Food and Agriculture Organization of the United Nations

Review of food and agricultural policies in Malawi

| Country Report 2014

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Acronyms

ACE	Agricultural Commodity Exchange
ACP	Africa, Caribbean, Pacific
ADB	Africa Development Bank
AHL	Auction Holdings Limited
AMIS	Agricultural Market Information System
AMP	Aid Management Platform
ASTI	Agricultural Science & Technology Indicators
ASWAP	Agricultural Sector Wide Approach
BADEA	Arab Bank for Economic Development in Africa
BASFA	Balaka Smallholder Farmers Organization
CAGR	Compound Annual Growth Rate
COFOG	Classification of the Functions of Government
DAC	Development Assistance Committee
DCGT	Dwangwa Cane Growers Trust
EBA	Everything But Arms
EOT	Eastern Out-growers Trust
EPA	Economic Partnership Agreement
ERS	Estimated Recoverable Sugar
EU	European Union
FISP	Farm Input Subsidy Program
GDP	Growth Domestic Product
GoM	Government of Malawi
GTAM	Grain Trade Association of Malawi
GTPA	Grain Traders and Processors Association
IFPRI	International Food and Policy Research Institute
LDC	Least Developed Countries
MaSSP	Malawi Strategy Support Programme
MGDS I/II	Malawi Growth and Development Strategy
MoAFS	Ministry of Agriculture and Food Security
MOF	Ministry of Finance
MWK	Malawi Kwacha
NAS	National Adaptation Strategy
NASFAM	National Smallholder Farmers' Association of Malawi
NES	National Export Strategy
NFRA	National Food and Reserve Agency
NFRA	National Food Reserve Administration
NSO	National Statistic Office
ODA	Official Development Assistance

OECD	Organisation for Economic Co-operation and Development
PEFA	Public Expenditure in Support of Food and Agriculture
SAT	Sukambizi Association Trust
SVCGT	Shire Valley Cane Growers Trust
TAMA	Tobacco Association of Malawi
TAML	Tea Association of Malawi Limited
USAID	United Stated Agency for International Development
WRS	Warehouse Receipt System
WB	World Bank

Executive Summary

Introduction, methodology and data constraints

The Food and Agriculture Organization of the United Nations (FAO) and its national, regional and international partners are committed to monitoring and analysing food and agricultural policies (MAFAP) in order to provide policy-makers in developing countries, as well as their development partners and other stakeholders in civil society, with the best possible information on the effects of policies and public expenditure influencing agricultural investment decisions and ultimately food security. Furthermore, MAFAP supports governments in their efforts to identify, articulate and assess options for reforming food and agriculture policies. MAFAP works with national and regional partners to: establish a community of practice on policy measurement, monitoring and analysis by developing institutional capacities that systematically analyse government policies and their effects; assess options of political reforms; and engage national stakeholders and development partners in policy dialogue.

This report provides an in-depth analysis of the effects of food and agricultural policies in Malawi over the period 2005–2013 and carefully examines:

- the effects of policies and market performance on price incentives for producers, consumers and other agents in six key agricultural value chains;

- the level and composition of public expenditure in support of the food and agriculture sector; and

- the degree of coherence between governments' stated policy objectives, the policy measures implemented to achieve those objectives, and the effects they generate.

Relevance in terms of production, trade, food-security and government policies, along with data availability, led to the selection of cotton, groundnuts, maize, sugar, tea and tobacco as commodities to be analysed. They represent 32 percent of the value of production, more than 90 percent of the value of exports, 30 percent of the value of imports and 25 percent of the value of products considered vital for food security (FAOSTAT, 2014). Owing to the lack of price information, analysing 70 percent of the total value of agricultural production, as stipulated in the MAFAP methodology, was not feasible. Indeed, investing in sustainable market information systems is a key policy recommendation emerging from this report.

The analyses presented in this report are based on the MAFAP methodology for measuring the effects of agricultural and food policies. However, the lack of price information has proved to be a key constraint in analysing the effects of policies and market performance on price incentives for producers and other agents. Therefore, in certain specific cases, the MAFAP methodology was adapted to deal with the data scarcity.

Main findings

Malawi is facing major challenges, with more than half of the population living below the national poverty line and almost a quarter not able to reach their minimum daily-recommended food intake. The country is highly populated, with 84 percent of the population living in rural areas. However, despite a low life expectancy and a high prevalence of HIV/AIDS and other diseases, most of Malawi's socioeconomic indicators have shown significant progress during the 2005 to 2013 period, especially in terms of food security and infant mortality.

Agriculture is a source of livelihood for more than 90 percent of the population and represents more than three quarters of national exports. However, in recent years, the economic and political environment has been particularly challenging because of deteriorating governance and macroeconomic challenges, namely, declining disposal incomes, the scarcity of foreign exchange and the overvalued exchange rate. This has affected both the performance of the agricultural sector and the level of expenditures allocated to agriculture and food security. Moreover, annual agricultural growth was also particularly uneven because of the unfavourable weather conditions in 2005, 2010 and 2012.

The results of MAFAP analysis are summarized as follows:

1. **The fixed exchange rate policy**, which led to the overvaluation of the exchange rate, **depressed producer prices by 22 percent on average from 2005 to 2011.**

2. **The lack of a market information system is a major constraint for producers and is also a major handicap for policy makers.** The scarcity of price information is one of the main determinants of price disincentives for producers as it reduces their capacities to set prices that reflect market dynamics and diminishes their bargaining power. Moreover, it prevents the design and implementation of suitable policy measures.

3. **The policy and market environment, including market inefficiencies and exchange rate misalignment, depressed maize producer prices by an average of 26 percent over the period 2005–2013.** This is surprising as maize is the main staple food and attracts significant policy interest. Factors contributing to low producer prices include undeveloped rural infrastructure and the inability of producers to store maize and sell when prices are higher later in the year. Only 2.6 percent of agricultural public expenditure was allocated to storage capacities during the period 2006–2013 and this was entirely for public procurement and stockholding. The ad hoc government trade and market policies implemented to contain consumer prices further exacerbated the price disincentives at farm gate in 2008, 2012 and 2013.

4. However, **consumer oriented policies were not sufficient to contain prices as maize consumers paid higher prices** than they should have paid in the absence of policy and market distortions (average 2005–2013).

5. **Maize attracted 71 percent of agricultural public expenditure (average 2006–2013).** Production and productivity were supported through the provision of variable input subsidies in the framework of the Farm Input Subsidy Program (FISP). However, the budgetary transfers allocated to maize could not compensate for the price distortions induced by the policy and market environment including market inefficiencies and exchange rate misalignment (average 2006–2013).

6. **The market and policy environment did not support producers of the key export commodities (cotton, groundnuts, tobacco, tea and sugar)** despite the current political will to increase and diversify agricultural exports. The market and policy environment, including market inefficiencies and exchange rate misalignment, depressed producer prices by 30 percent (average 2005–2013). Price

distortions are the result of poor infrastructure and lack of competition within the value chains and the inadequate enforcement and/or inefficiency of price policies.

7. **The trade and market environment, the excessive taxation and the exchange rate misalignment depressed tobacco producer prices by 11 percent (average 2005–2013).** Price distortions are attributed to uncompetitive behaviour, namely the monopolistic situation of services at auction, the oligopsonistic position of buyers at auction and to collusive practices.

8. **Cotton producers received prices almost aligned with international reference prices (average 2005–2013).** The atomistic market and the strengthening of regulation enabled effective price transmission between domestic and international markets. However, the enforcement of the minimum price was weak and the fixed price did not systematically reflect the price level in the international market.

9. **Had domestic sugar price at farm level been aligned with the export parity prices, producers would have received a 23 percent higher price (average 2005–2013).** The major factor contributing to the lower price is the lack of strong producers' organizations and the sugarcane monopsony, together leading to the inability of producers to negotiate.

10. **Smallholder tea producers received a price that was 37 percent lower than the price that should have prevailed in the absence of domestic policy and market distortions** (average 2005–2013). Despite the fact that the pricing model ensures remunerative prices, its functioning does not allow producers to benefit from international market opportunities.

11. **Groundnut producers involved in the high quality export value chain received prices aligned with the international reference prices until 2011 under National Smallholder Farmers' Association of Malawi (NASFAM).** After the creation of Afrinut in 2011, producers began receiving lower prices, likely resulting from a loss of bargaining power compared to the previous period. Other factors contributing to lower producer prices include the high transport costs and the high margins enjoyed by exporters.

12. Despite the predominant role of agriculture in the economy, **actual public expenditure in support of food and agriculture increased at a rate significantly lower than the total national budget over the 2006–2013 period.**

13. **Agricultural public expenditure was chiefly composed of support to producers through variable input subsidies.** However, this type of investment entails high opportunity costs against collective support to the sector, essential for long-term agricultural development.

14. **Public expenditure allocated to agricultural research were low**, accounting for only 3.6 percent of agricultural public expenditure on average from 2006 to 2013; 86 percent of this budget was contributed by donors.

15. Consistent with the need and objective to improve rural infrastructure, **public expenditure also focused on the development of rural roads.** The underdeveloped infrastructure leads to the fragmentation of markets, contributing to depressed prices for producers who bear the costs of remoteness from major wholesale markets.

16. **The significant budgetary transfers allocated to maize counteract the policy objective targeting the diversification of agricultural production.** Other commodities vital for food security, such as cassava and sweet potatoes, were barely supported between 2006 and 2013.

17. **Budgetary support to the agriculture sector was focused on short-term and ad hoc policies and programmes**, with fewer resources dedicated to long-term impact investments. The development budget was lower than the recurrent budget during the reviewed period.

18. **From 2010 to 2013, donors repeatedly suspended their aid, resulting in fall-outs of public expenditure in support of food and agriculture**, thereby affecting collective support to agricultural development. The disbursement rates of donor support were lower than 35 percent in 2010, 2011 and 2013. Donors had shifted to off-budget support, creating growing uncertainty towards alignment of donor spending with national political priorities.

Recommendations

The following policy recommendations are based on the main findings of the analyses of price incentives, public expenditure level and composition, and policy coherence as summarized above. These recommendations are aimed at the development of the agricultural sector and more precisely, the reduction of price distortions for producers and consumers and ensuring that producers benefit from market opportunities.

1. **Develop a sound and robust market information system.** Price information is necessary to:

- Reinforce the spatial and temporal arbitrage capacity of producers and strengthen their bargaining power with potential buyers;

- Support producers decisions concerning investments, marketing opportunities or storage decisions;

- Systematically monitor and analyse the effects of market and price policies, contributing to the implementation of adequate price and market interventions that consider the effects on both consumers and producers as well as on export crop competitiveness.

2. **Ensure continuity of public expenditure in support of food and agriculture** by:

- Securing high disbursement rates of national and donor funds;

- Pursuing the on-going efforts towards accountability and transparency of the public sector accounting system for the assurance of continual donor spending;

- Prioritizing on-budget donor support to ensure control of donor spending and alignment with national priorities.

3. **Explore the costs and benefits of higher level investments** in support of developing:

- **market services and infrastructure** to reduce market fragmentation and increase price transmission;

- **irrigation** to reduce weather dependency of the sector and therefore limit the supply shock effects on prices;

- **agricultural research** to improve agronomic performance and reduce the vulnerability of the sector;

- **private and public storage capacities** to reduce post-harvest losses and allow producers to fully benefit from market opportunities.

4. **Pursue investments undertaken in the development of feeder and rural roads** by:

- Prioritizing investments according to their relevance in terms of domestic and international agricultural trade flows;

- Strengthening the institutional relationship between the Ministry of Agriculture and the Road Fund Administration.

5. **Balance the budgetary transfer between maize and other commodities** in order to:

- Boost production and productivity of other crops vital for food security;

- Diversify exports and hence reduce the reliance on tobacco.

6. **Give priority to the implementation of policy measures that create a conducive environment for private investments in agro-processing activities**, namely:

- Supporting the implementation of a policy framework that enhances competition;

- Ensuring effective functioning of the Competition and Fair Trade Commission (CFTC) by securing its independence and enhancing its capacities to ensure competition;

- Increasing communication on market and trade policy changes to reduce uncertainty amongst value chain agents.

Introduction

The Monitoring and Analysing Food and Agricultural Policies (MAFAP) programme supports governments in identifying, articulating and assessing options for reforming food and agricultural policies. The programme has four main objectives:

- Collect, assemble and use targeted and policy-relevant data including prices, market access costs and public expenditure in support of the food and agriculture sector, as well as policy decisions;

- Consolidate and strengthen national policy monitoring systems to measure policy effects and identify current policy 'problems' that affect the competitiveness of agricultural producers;

- Articulate policy options and assess respective ex-post and ex-ante analysis to support suitable government reforms;

- Engage national stakeholders and development partners in policy dialogue as part of a more inclusive policy reform process.

Since 2009, FAO's MAFAP programme has been working in several developing countries to create sustainable policy monitoring systems and carry out a consistent set of policy and public expenditure analyses across a wide range of agricultural value chains.

To do this, MAFAP works with national partners to build capacity and systematically analyse the impact of food and agriculture policies and public expenditure on market incentives and disincentives faced by producers and other actors in key agricultural value chains. MAFAP analyses are used to inform targeted food and agricultural policy reforms that will result in a more conducive environment for agricultural investment and productivity growth, especially for smallholder farmers.

MAFAP's quantitative indicators are comparable across commodities, countries and over time. They provide sound evidence to support informed policy dialogue at national, regional and international levels, and can therefore be used to advocate for policy reforms when and where they are needed. Moreover, the common set of indicators makes it easier to understand how different food and agricultural policies work in various contexts.

This report constitutes the first compendium of the policy monitoring and analysis work undertaken in the framework of MAFAP in Malawi. It offers an overview of MAFAP results based on a rigorous methodology for measuring the effects of agricultural and food policies on agriculture and rural development, for analysing the level and composition of public expenditure allocated to food and agriculture and analysing the policy coherence. The approach is novel as it has not been used in Malawi before. The report establishes a baseline to support the dialogue on such policies in Malawi among key decision makers and with development partners. This MAFAP report seeks to: (1) establish a baseline for a monitoring system to measure policy effects; (2) provide evidence based information on policy effects and public expenditure allocated to food and agriculture; (3) identify current policy constraints to agricultural development; (4) inform and engage policy dialogue, especially on the key constraints on production incentives for farmers or accelerated development of specific value chains; and (5) promote a more inclusive policy reform process. However, the report alone is not intended to advocate for particular reforms: according to the MAFAP phase II (2014–2019) approach, such changes must be endogenous, and if they take place, must result from an intensive and highly consultative dialogue on government policies, primarily with the government but also among other stakeholders in the country.

The core part of the report draws from seven technical notes that provide detailed and innovative analyses of the 2005–2013 period, covering six key commodities that account for 40 percent of the average value of agricultural production in Malawi between 2005 and 2011, and one technical note covering public expenditure allocated to food and agriculture. The technical notes for each commodity present standalone results of the MAFAP project and are available in addition to the report. These notes were written by the MAFAP Secretariat, with contributions from local researchers from the Centre of Agricultural Research and Development (CARD) of the Lilongwe University of Agriculture and Natural Resources (LUANAR). The team also benefited from the help of several agricultural, public and private development stakeholders in Malawi, in particular from the Ministry of Agriculture and Food Security (MoAFS). The involvement of Malawian researchers and policymakers themselves is in

accordance with MAFAP's medium-term objective, which is the full institutionalization of its policy monitoring methodology within national institutions.

While the MAFAP country report is an initial and one-off, in-depth country study, taking stock of the situation of the policy framework and its effects, MAFAP technical notes are to be updated on a biennial basis in order to serve as a reliable and comprehensive tool to identify key factors constraining the development of the sector and understand their impact on value chain agents.

The report has three main parts:

- The first offers an overview of Malawi's economy based on key development and performance indicators (DPI), an analysis of the overall policy context as well as a description of policy decisions in the food and agriculture sector.

- The second describes the results of the aggregate and commodity specific price incentives analyses and public expenditure analyses.

- The third part provides a policy coherence assessment describing the extent to which policies in place are aligned to national development objectives, along with some preliminary policy recommendations.

Part 1.
Food security and agricultural policy context

This section presents and analyses the development and performance indicators (DPI) common to all countries covered by the MAFAP programme. The choice of a common group of indicators was made so as to facilitate comparison between countries (Table 1).[1]

1. Malawi in brief

Malawi is a landlocked, densely populated country and among the poorest in the world, with more than half of the population living below the national poverty line and almost a quarter not able to reach their minimum daily-recommended food intake. Malawi has an annual population growth rate of 2.7 percent and ranks sixth in the world among countries with the highest proportion of rural population, with only 15 percent living in urban areas (WB-WDI, 2014). Despite a low life expectancy and a high prevalence of HIV/AIDS and other diseases, most of Malawi's socioeconomic indicators have shown significant progress during the 2005 to 2013 period.

Agriculture is a source of livelihood for more than 90 percent of the population and represents more than three quarters of national exports, although this share on total GDP has decreased from 40 percent in 2000 to 30 percent in 2011. Since independence in 1964, agriculture has been the backbone of the country's economy and a main driver of its economic growth. First, through an export oriented agricultural system dominated by large-scale estates, and more recently by a smallholder-led system that now contributes to over 80 percent of the agricultural GDP. Agriculture's contribution to foreign exchange and GDP has been driven primarily by tobacco, the country's main cash crop and foreign exchange earner.

Agricultural production is dominated by maize, grown by nearly all smallholders, and contributing to more than half of the national calorie intake. Given the importance of maize in the Malawian diet, maize production is regarded as essential to the general welfare of the population and is therefore an important social and political variable. However, unpredictable weather patterns and frequent drought make maize production extremely vulnerable.

Since 1994, Malawi's political system has been classified as a presidential representative democratic republic. With multi-party elections, the President is both head of state and head of government and is elected by a universal direct ballot every five years. The legislative power is endowed in the National Assembly with 193 elected members. The Judiciary acts as an independent power based on the British law model.

Since 2005, after an era of double-digit inflation and continual problems with international financial institutions, a policy of fiscal discipline is now generally guiding public finances. However, artificial control over the exchange rate is one of the main features of the period analysed. The exchange rate was liberalized in May 2012, which produced an immediate effect on inflation and the cost of imports. However, it is estimated that in Malawi, the floating exchange rate will nurture an adjustment of the balance of trade in the long run as well as a boost in economic growth. Indeed, with the exception of the year 2012, Malawi has witnessed persistent economic growth for several years, despite the external and internal shocks that the country experienced. The significant growth is overwhelmingly driven by tobacco exports, accounting for 60 percent of export value (NSO, 2012b), which are benefiting from high prices on the international market. However, corrective measures are being taken to diversify income generation in Malawi as currently the country is extremely vulnerable to price and weather shocks.

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[1] The data cited in this section are developed and referenced in the text of the report.

TABLE 1. DEVELOPMENT AND PERFORMANCE INDICATORS (DPI)

Fields	DPI #	Development Indicators and Performance (DPI)	Recent value	Africa benchmark	Global benchmark
1. Macroeconomic performance	**DPI 1**	Share of agricultural value added/GDP (WDI)	30.2% (2013)	9.8% (2013) (Sub-Saharan Africa-developing) (WDI)	3,1% (2011) (WDI)
	DPI 2	Growth of agricultural GDP (WDI)	5.4% (2013)	9.2% (2012) (Sub-Saharan Africa) (WDI)	3.2% (2013) (WDI)
2. Performance of agriculture and rural sector	**DPI 3**	Share of agricultural land use (% national land) (WDI)	61% (2012)	44.1% (2012) (Sub-Saharan Africa) (WDI)	37.7% (2013) (WDI)
	DPI 4	Share of agricultural exports/total exports in value (incl. raw material and food exports) (WDI)	80.8% (2011)	5.4% (2012) (Sub-Saharan Africa) (WDI)	1.7% (2012) (WDI)
	DPI 5	Value of agricultural imports/total imports, in value (incl. raw material and food imports)(WDI)	1.1% (2011)	0.9% (2009) (Sub-Saharan Africa) (WDI)	1.4% (2012) (WDI)
	DPI 6	Proportion of households engaged in agricultural activities (IHS3,2012)	85.1 (2010/11)	NA	NA
3. Input market and constraints for sector development and performance	**DPI 7**	Fertilizer use, kg/ha on arable land (WDI)	39.9 (2012)	14.7 (2012) (Sub-Saharan Africa) (WDI)	141.3 (2012) (WDI)
	DPI 8	Share of farms with a tractor (NACAL, 2006/07)	>1% of smallholders	NA	NA
	DPI 9	Doing Business Index on: (1) the extent of legal rights (0-10);(2)depth of credit information (0-6) (WBI)	(1) 7 (2013)	NA	NA
			(2) 0 (2013)		
	DPI 10	Share of paved roads/total road network (WDI)	NA	15.6% (2011) (Sub-Saharan Africa) (WDI)	57% (2011) (WDI)
4. Environment and agriculture	**DPI 11**	Share of total land used for permanent meadows and pastures/ land area (FAOSTAT)	33.15% (2011)	77.92% (2011) FAOSTAT	68.38% (2009)
	DPI 12	Rate of deforestation (FAO GFRA)	0.99% (2005-2010)	0.5% (2005-2010)	0.14% (2005-2010)
5. Demography	**DPI 13**	Average population growth rate (NSO)	2.8% (2011)	2.7% (2013) (Sub-Saharan Africa) (WDI)	1.2% (2013) (WDI)
	DPI 14	Death rate and birth rate (WDI)	Death: 11.7/1,000 (2012); Birth: 40/1000 (2012)	Mortality: 11.4/1000 (2012);	Mortality: 8/1000 (2012);
				Birth rate 31.1/1000 (2013) (Sub-Saharan Africa) (WDI)	Birth rate: 20/1000 (2013) (WDI)
	DPI 15	Total fertility rate (WDI)	5.5 births/ woman (2012)	5.1 birth/woman (2010) (Sub-Saharan Africa) (WDI)	2.5 birth/woman (2012) (WDI)

Fields	DPI #	Development Indicators and Performance (DPI)	Recent value	Africa benchmark	Global benchmark
6. **Poverty, inequality and employment**	**DPI 16**	Share of the population living below the national poverty threshold (WDI)	50.7% (2011)	NA	NA
	DPI 17	Per capita gross national income (Constant 2005 US $) (WDI)	US$ 226.9 (2012)	US$ 944.5 (2012) (Sub-Saharan Africa)	US$ 6,455 (2012) (WDI)
	DPI 18	Gini coefficient (WDI)	0.46 (2011)	NA	NA
	DPI 19	Unemployment rate (NSO)	15.8% (2010)	NA	NA
7. **Migration and urbanization trends**	**DPI 20**	Rural population as proportion of total population (WDI)	84.1% (2013)	63.4% (2013) (Sub-Saharan Africa) (WDI)	47% (2013) (WDI)
	DPI 21	Urban population growth rate (WDI)	3.7% (2013)	4.1% (2013) (Sub-Saharan Africa) (WDI)	2.1% (2013)(WDI)
	DPI 22	Net migration rate (UNDATA)	-0.3 (2000-2005)	-1.524 (2012) (Sub-Saharan Africa) (WDI)	NA
8. **Food security and socio-sanitary conditions**	**DPI 23**	Human Development Index (UNDP)	0,414 (2013)	0.502(2013) (Sub-Saharan Africa) (UNDP)	0.702 (2013) (UNDP)
	DPI 24	Mortality rate for children under 5 (per 1000 live births) (UNDP)	67.9/1000 births (2013)	92.4/1000 (2013) (Sub-Saharan Africa) (WDI)	45.6/1000 (2013) (WDI)
	DPI 25	Proportion of births attended by skilled health provider (WDI)	71.4% (2010)	49.7% (2010) (Sub-Saharan Africa) (WDI)	67.3% (2010) (WDI)
	DPI 26	Prevalence of undernourishment (WDI)	20% (2012)	21.5% (2012) (Sub-Saharan Africa) (WDI)	13,8% (2013) (WDI)
9. **Education and gender**	**DPI 27**	Gross enrolment rate for primary education (WDI)	141.3%* (2013)	100.2% (2012) (Sub-Saharan Africa) (WDI)	108.04% (2012) (WDI)
	DPI 28	Adult literacy rate (% of 15-year-olds and over) (NSO/UNDP)	74% (2011)	59.3% (2010) (Sub-Saharan Africa) (WDI)	84.3% (2010) (WDI)
	DPI 29	Gender inequality index (UNDP)	0.591 (2013)	0.578 (2013) (Sub-Saharan Africa) (UNDP)	0.450 (2013) (UNDP)
	DPI 30	Employment to population ratio 15+, female and male (5) (WDI)	Women: 77.2%, Men: 76.2% (2013)	Women: 58.39%,	Women: 47.3%,
				Men: 71.1% (2012) (Sub-Saharan Africa) (WDI)	Men: 72.4% (2012) (WDI)

*Note: According to the World Bank; ""Gross" enrolment includes students of all ages. In other words, it includes students whose age exceeds the official age group (e.g. repeaters). Thus, if there is late enrolment, early enrolment, or repetition, the total enrolment can exceed the population of the age group that officially corresponds to the level of education – leading to ratios greater than 100 percent."

Source: World Bank, WDI (2014), UNDP (2014), Malawi NSO, FAOSTAT

2. Geographical context

Malawi is a landlocked country in Southern Africa that shares boundaries with Zambia to the northwest, Tanzania to the north and northeast, and Mozambique to the east, south and southwest (Figure 1). The northern half of the country is bordered on the east by Lake Malawi, which is 570 kilometres long and occupies 24 800 of the total 118 484 square kilometres that make up Malawi.

Malawi can be divided into three regions: North, Central and South and further subdivided into 28 districts, six in the Northern Region, nine in the Central, and thirteen in the Southern. Administratively, the districts are governed by Traditional Authorities (T/As), presided over by chiefs, and are composed of villages: the smallest administrative units, headed by village chiefs and heads. Malawi's capital, Lilongwe, has about 1 230 834 inhabitants but the economic centre is the southern region's main city of Blantyre, with a population of approximately 661 256 (National Census, 2008).

FIGURE 1. **MAP OF MALAWI**
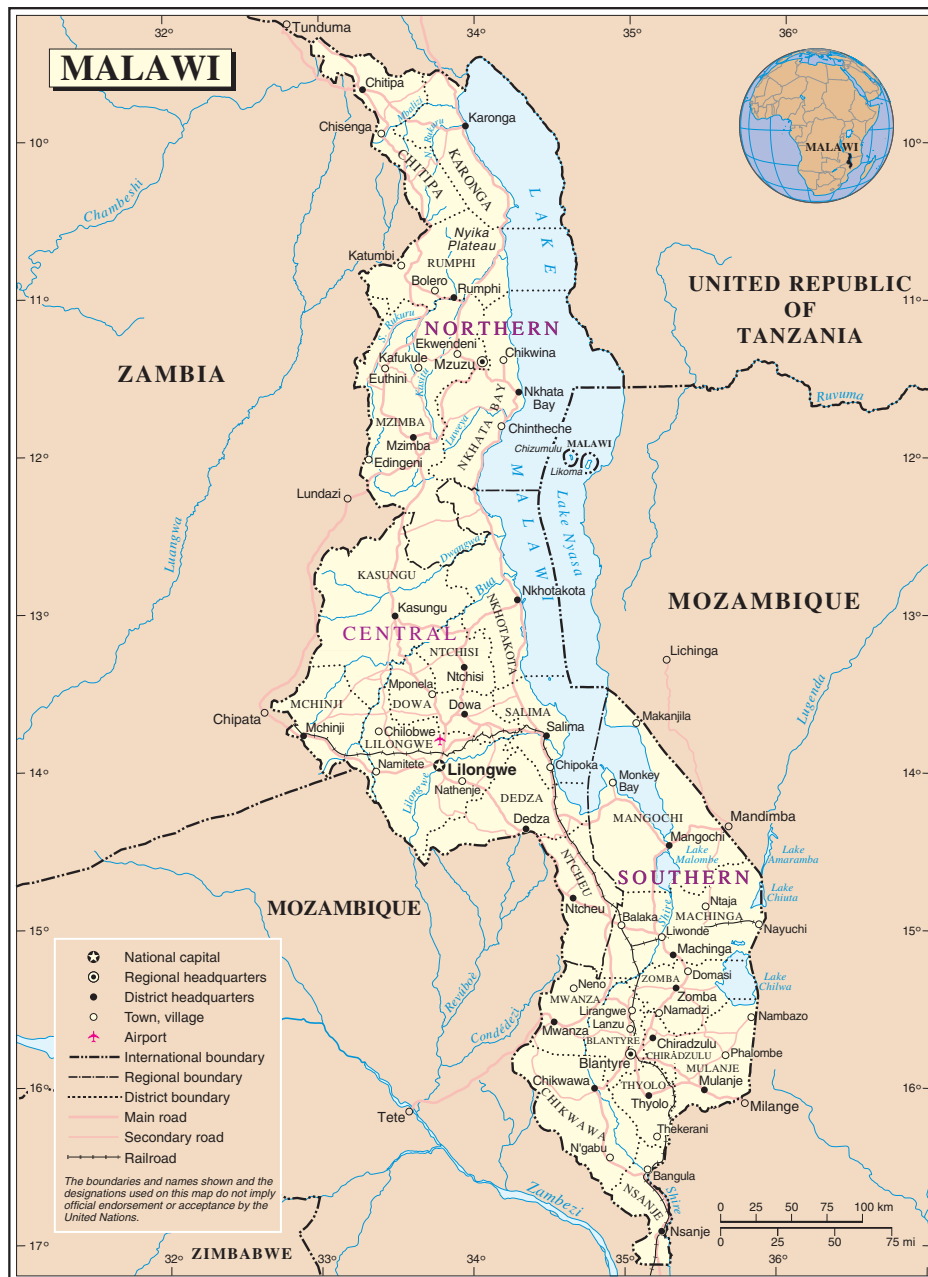
Source: United Nations Cartographic Section, 2004

Malawi's economy strongly depends on its large neighbouring countries, Tanzania, Mozambique and Zambia, providing access to the sea and international markets. For more than two decades, Malawi suffered from the chronic instabilities in these countries. Fortunately, regional stability over the past decade has been a major contributor to more sustained economic growth.

3. Socio-economic aspects

Population

Malawi is one of the most densely populated countries in the world, with around 134 persons per km² of land in 2012 (UNdata, 2014).

The 2008 census estimated Malawi's population at 13.07 million, indicating an annual inter-census growth rate of 2.8 percent (NSO, 2009). Furthermore, the United Nations (UN) estimates that the population reached almost 16 million inhabitants in 2012, and confirms an annual growth rate of 2.8 percent for the period 2010–2015. Malawi's high population growth is due to one of the highest fertility rates in Africa (5.5 births per woman in 2012) which is estimated to remain high (5.4 live births per woman) for the period 2010–2015. Moreover, the birth rate stood at 40/1000 in 2012, while the death rate stood at 11.7/1000. This is comparatively higher than the Sub-Saharan Africa (SSA) average rates of 31.1/1000 and 11.4/1000 (WDI). It is expected that the country's population will double by the year 2030.

Although the urban population is rapidly increasing, Malawi is still a predominantly rural country, with more than 84 percent of Malawians living in rural areas in 2013 (WDI, 2014). The average household size is 4.5 persons (NSO, 2012a) and women represent 50 percent of the population. The population is very young; in 2013, 45 percent were under age 14, 51 percent were between 15 and 64, while only 3.2 percent of the population were age 65 or older (WDI, 2014).

Poverty, inequality and employment

Malawi is one of the poorest countries in the world, with a GDP per capita (in PPP) of only 779 current US$ in 2012 (WDI, 2014). In overall development terms, Malawi ranked 174 out of 187 countries on the UNDP Human Development Index (2013). In addition, the share of the population living below the National Poverty Line in 2011 (MWK 37 002 per person per year) was 50.7 percent, meaning that over half of the country's population is poor (NSO, 2012a). Moreover, almost half of the poor fall below the national food poverty line (MWK 22 956 per person per year), this means that about one in every four people cannot even afford to meet the "minimum standard for daily-recommended food requirement" (NSO, 2012a). National poverty rates show a noticeable difference between urban and rural areas, since it is estimated that three out of five people in rural areas live in poverty, compared to only one in five inhabitants in urban areas (NSO, 2012a). Poverty is also distinct among genders in Malawi, as the incidence of poverty is higher in female-headed households at 57 percent, while for male-headed households at 49 percent (NSO, 2012a).

The official Gini coefficient reveals that economic inequality was slightly higher in 2011 than in 2005, increasing from 0.39 to 0.45 overall. Furthermore, the coefficient is higher among the urban (0.49) than rural (0.37) population (NSO, 2012a). Since poverty rates are much lower in urban areas (~25%), inequality seems to be driven by the increasing wealth of elites in city centres (Kwengwere, 2010).

The Welfare Monitoring Survey (WMS) 2011 (NSO, 2012) estimates an unemployment rate of 15.8 percent of the national workforce: 14.5 percent of women and 13.3 percent of men. The share of unemployed is remarkably higher in urban areas at 49.6 percent, compared to 10.7 percent in rural areas, with agriculture employing more than 85 percent of the national workforce in 2011. The majority of the rural population are employed as *mlimi* (subsistence farmers). This is especially so for women, of whom 87.5 percent are working under *mlimi* conditions and only 3.5 have access to a stable salary, which is significantly lower than the male rate of 11.9 percent (NSO, 2012). According to FAO (2011), this is worsened by the significant domestic work burden that women carry out.

Migration and urbanization

Although Malawi currently has one of the highest shares of rural citizens in the world, according to estimates by the United Nations Department of Economic and Social Affairs, the average annual increase in the urban population in Malawi during the period 2010–15 is as high as 4.2 percent, also amongst the highest in the world (WDI). The urban population in Malawi has increased from about 850 000 in 1987 to 2.6 million in 2013 (WDI, 2014). The main urban areas are the

cities of Blantyre, Lilongwe, Mzuzu and Zomba, where 12 percent of the total urban population lives (NSO, 2009). The high urban migration has put significant pressure on housing supply. In the past, the issue was officially addressed by designating Traditional Housing Areas, successful for many years but now overwhelmed. Their role has been taken up by informal settlements controlled by community chiefs (UN-HABITAT, 2010).

As urbanization rates imply, migration within the country exists. The Third Integrated Household Survey (IHS3) captured that 10 percent of the population moved from one locality to another in the five years previous to the 2011 survey. Of these, 54 percent had moved from rural to urban areas (NSO, 2012a). The internal migration rate decreased 7 percent from the 17 percent shown in the IHS2 of 2005.

The net international migration rate, according to the UN Statistics Division, stood at -0.3 migrants per 1000 population between 2005 and 2010. The percentage of migrants over the total population has been decreasing over time up to a share of 1.8 percent of international migrations on total population in 2010 (WDI, 2014).

Education and gender

The proportion of adult (aged 15 and above) literacy in Malawi decreased from 64.1 percent in 1998 to 61.3 in 2010 (WDI, 2014), still higher than the African average of 59.3 for the same year (WDI, 2014). Female literacy (wait, do we mean illiteracy? – if we do mean literacy we could insert 'however') decreased from 54 percent in 1998 to 51.2 percent in 2010 and the literacy gender gap amongst young males and females is improving, calculated as a percentage of young female literacy over young male literacy (% ages 15-24), which increased to 94 percent in 2010 (WDI, 2014).

The primary net education enrolment rate[2] for Malawi has gone up from 80 percent in 2005 to 97 percent in 2010 (WDI, 2014). The World Development Indicators (WDI) show a prevalence of female enrolment share over males with a ratio of more than 103 in 2010 (WDI, 2014). The gross enrolment rate was 141 percent in 2012 but was higher for women than for men, with 144 and 139 percent in 2012, respectively (WDI, 2014). It seems however, that the increasing number of new students caused deterioration in quality indicators,

such as the student/teacher ratio, which, for primary education stood at 74:1 in 2012, much higher than ratios under 64:1 in neighbouring Zambia, Mozambique and Tanzania (WDI). Moreover, the high rates of child malnutrition, long walking distance to school, and the need for child labour on farms has resulted in high failure and drop-out rates (NSO, 2012 and NSO, 2012a).

Finally, Malawi scored 0.591 in the Gender Inequality Index in 2013, ranking 129 out of 146 countries (UNDP). Although in April of 2012, the presidency came for the first time in the hands of a woman, Mrs. Joyce Banda, only 20 percent of the seats in the National Assembly were occupied by women (UNDP).

Food security and health

Although Malawi has not experienced widespread famine since 2005 (FAO, 2012), the IHS3 household survey results indicate that a substantial proportion of the population experiences extreme forms of food insecurity. Figure 2 shows that about 33 percent of the population live in a state of very low food security[3], such that at some time during the year they experienced multiple indications of reduced food intake and disrupted eating patterns or hunger owing to lack of resources. Another 8 percent showed low food security that caused a reduction in the quality and variety of food intake. Figure 2 also shows that the proportion of food insecurity is significantly higher in rural areas relative to urban areas (34 to 23 percent) and is more prevalent in female-headed households compared to male-headed households (38 to 31 percent).

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[2]   Proportion of all children aged six to thirteen years that are enrolled in primary school.

[3]   High food security: No concern about accessing enough food nor altered the quality, variety, and quantity or eating patterns. Marginal food security: Have concerns about adequacy of the food supply but the quantity, the quality, the variety and the eating patterns were not disrupted. Low food security: Might have been concerned about not having access to enough food, they reduced the quality and the variety of the food consumed but quantity of food intake and normal eating patterns were not disrupted. Very low food security: Experience multiple indications of disrupted eating patterns and reduced food intake. They report reduction in food quality, variety, quantity and frequency of food consumed. Consumption by adults could have been restricted in order for small children to eat and could also depend on food assistance from relatives or friends (NSO, 2012a).

FIGURE 2.   **FOOD SECURITY STATUS BY POPULATION GROUPS (2011)***
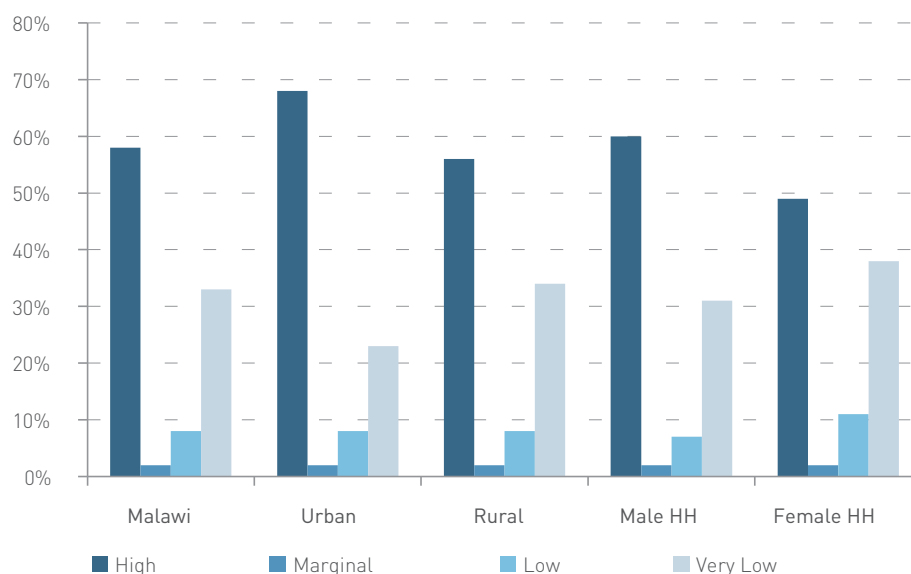
Note: Status in the week prior to the survey.

According to IHS3 results presented in Table 2, 49 percent of the country's population experienced food shortage in the 12 months previous to the survey. The proportion and causes differ significantly among the rural and urban population. Lack of farm inputs and weather conditions represent almost 70 percent of the causes for food shortage among the rural population. Among the urban population, of which 30 percent experienced food shortage, the main cause identified was the limited economic access to food as a result of excessive food prices in the market.

TABLE 2.   **POPULATION THAT EXPERIENCED FOOD SHORTAGE IN THE PAST 12 MONTHS AND CAUSES IN 2011**

	Causes of food shortage						
	Population that faced food shortage in the past 12 months	Drought, poor rains, floods, etc.	Crop pest damage	Small land size	Lack of farm inputs	Food in the market was very expensive	Other
Malawi	49.1%	25.8%	2.1%	10.7%	40.8%	14.3%	6.3%
Urban	30.4%	11.9%	0.4%	7.7%	19%	39.5%	21.5%
Rural	52.4%	27%	2.3%	11%	42.8%	12%	4.9%

There are other underlying reasons for food shortage in the rural areas that might not appear in this survey. One of them might be low prices received for end of season commercialization (when supply is high and prices are low) to buy household needs, limiting their budget to purchase off-season food later in the year (when supply is low and prices are higher). The WMS 2011 (NSO, 2012) showed that among the households that grew staple crops (89 percent), close to one third sold their staple food during the harvest season and 84 percent sold food to pay for household needs; 8.6 percent of the population produced food but ran out by August-October 2011 (however, this is significantly lower than the previous figure for the year 2009, which was 32 percent for the same period that year).

With regard to health, statistics in Malawi look bleak but are improving. According to the World Bank, the child

mortality rate (children dying before their fifth birthday per 1000 births) was 68 in 2013, still very high but better than the 2005 rate of 125. Life expectancy was 54.7 years in 2012; although remaining amongst the lowest in the world, this is a significant increase from the 2005 figure of just 49 years (WDI, 2014). These improvements might be due to the important budgetary efforts made by the government, which from 2008 to 2012 allocated an average of 17.6 percent of the total annual budget to healthcare (WDI), in accordance with the African Union's Abuja Declaration (April 2001), which set the threshold of 15 percent. This resulted in an increase in health expenditure per capita in PPP (constant 2005 US$) from 64.5 US$ in 2008 to 82.6 US$ in 2012 (WDI, 2014).

In 2005, 13 percent of adults aged 15-49 were infected with HIV; this figure decreased to 10 percent in 2013 according to World Bank data. The prevalence rate is higher in urban areas and among women (NSO, 2011). In the same way, the incidence of tuberculosis (per 100,000 people) passed from 354 in 2005 to 191 in 2011 (WDI). According to the Malawi Demographic and Health survey 2010, 73 percent of births in Malawi were delivered in a health facility (NSO, 2011). The proportion of the population with access to improved sanitation facilities has hardly changed in the past 6 years and remains at around 10 percent of the population. The share of total population with access to an improved water source however, increased from 75 percent in 2005 to 85 percent in 2013 (WDI, 2014).

Economic structure and macroeconomic performance

Although on average the service sector comprised 51 percent of the country's GDP over the period 2005–2013, Malawi has a strong agriculture sector, contributing 30 percent to the national GDP (Figure 3). The main staple crop is maize, followed closely by cassava and potatoes. The food and agriculture sector had a share of more than 80 percent of the country's total merchandise exports in 2011 (WDI, 2014). It is worth noting however, that the share of exports of raw agricultural material has increased while the share of food exports has decreased to 75 percent of total merchandise exports. Tobacco is by far Malawi's largest cash crop and export, followed by sugar and tea (FAOSTAT, 2014). Cotton lint and groundnuts are also among the relevant traded Malawian products (FAOSTAT, 2014).

FIGURE 3. **AVERAGE GDP CONTRIBUTION BY SECTOR, 2005–2013**

19%   Industry

51%   Services

30%   Agriculture
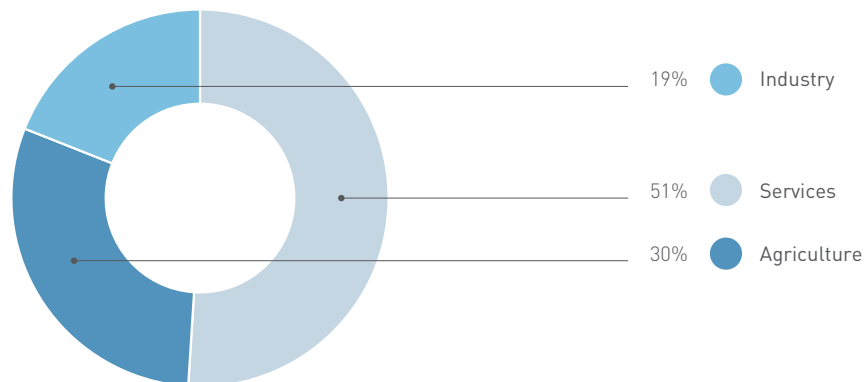
Source: Authors' calculations based on WDI, 2014

GDP increased by 4.9 percent from 2012 to 2013, mainly driven by a good food crop harvest and an increase in tobacco production, offsetting the suspension of uranium production owing to depressed international uranium prices. The weak performance of tobacco production was the main driver of the relatively low GDP growth rate in 2012 (1.9 percent). During the period 2005–2013, Malawi's average annual GDP growth was 5.5 percent (WDI, 2014).

Variance in the growth rates can often be explained by a high dependency on the agricultural sector, which in turn is highly susceptible to weather changes (2005 drought, followed by extraordinarily good rains in 2006 and 2007). Despite high overall economic growth due to the increase in population, per capita GDP decreased from US$ 266 to 226 (current) and is therefore the second lowest among all the SADC countries after the Democratic Republic of Congo (NSO, 2012b). The

dependency on weather and aid for GDP growth is overwhelming. However, the declining growth trend during the period 2009–2011 could also be explained by the overvalued international exchange rate, which negatively affected Malawi´s exports and local industry in the face of cheap imports.

The Government of Malawi's overarching policy goal is to further diversify income-generating economic activities in order to become less reliant on the agricultural sector. However, energy and food supply are essential if the country is aiming to expand its industry and service sector. In particular, the Government has identified the mining sector as a key driver to reduce reliance on agriculture (primarily tobacco). At present, Kayelekera, the biggest mine in Malawi, contributes around 10 percent to total GDP, although the objective is to bring this contribution to 20 percent for the entire mining sector by way of reducing taxes to attract investors. Moreover, oil, gas and rare earth explorations are currently ongoing.

FIGURE 4.   **MALAWI'S GDP ANNUAL GROWTH**

Source: WDI, 2014

As Figure 5 shows, Malawi's average annual balance of trade for goods and services throughout the period was -707 million US$, with a stable trend. The deficit went from -775 million US$ in 2005 to -661 million US$ in 2013 (WDI, 2014). The average value of imports of goods and services accounted for about 47 percent of Malawi's GDP, while exported goods and services represented only 30.8 percent of the national GDP between 2005 and 2013 (WDI, 2014). However, it is worth mentioning that the share of exports on GDP has doubled from 22 to 46 percent over the period 2005–2013. This improvement may also be due to the shift in the exchange policy with the Malawi Kwacha left free to float since May 2012.

The adoption of a floating exchange rate resulted in a de facto 50 percent depreciation of the Malawian Kwacha (Figure 6). This depreciation has slightly improved the balance of trade as it made exports cheaper, although imported goods have become more expensive. During the period analysed, the international reserves (excluding gold) were, on average, only 226 million US$ (WDI, 2014). Exchange rates and international reserves usually fluctuate according to the tobacco season and auctions, and are somehow influenced by the success or failure of the tobacco crop (EIU, 2008), which makes macroeconomic stability in Malawi over-dependent on a single commodity.

FIGURE 5. **MALAWI´S BALANCE OF TRADE**

■ Exports (Mln current US$)   ■ Imports (Mln current US$)   ■ Balance of trade (Mln current US$)
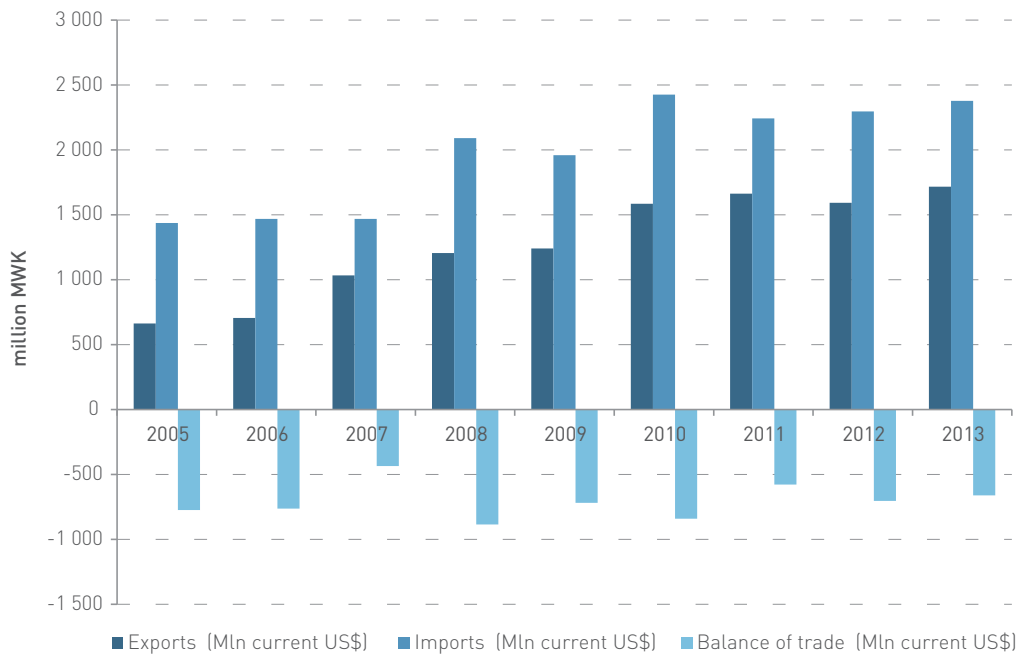
Source: WB, WDI (2014)

FIGURE 6. **OFFICIAL EXCHANGE RATE (ANNUAL AVERAGE)**
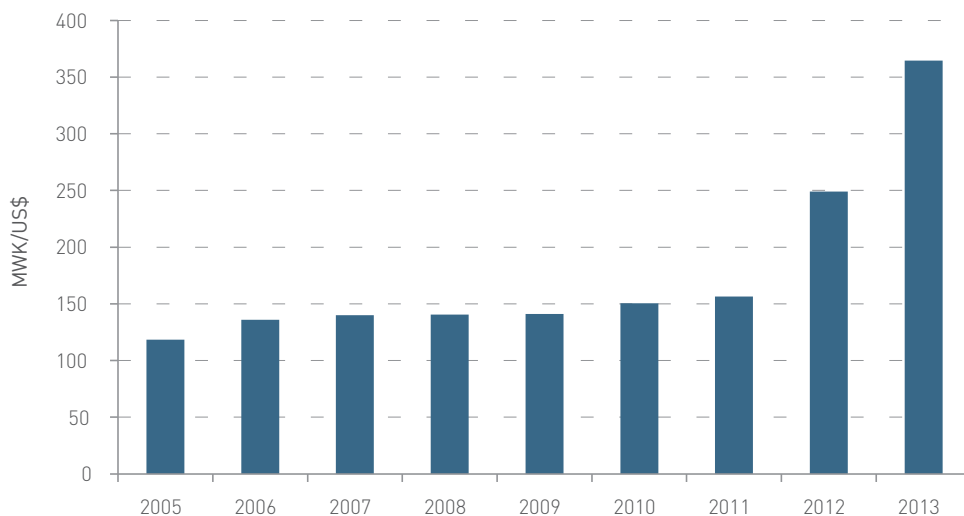
Source: WDI, 2014

Falling global food and fuel prices as well as a good national harvest have eased inflation to about 23 percent on average in 2014, comparing to the 30 percent registered in 2013. As the effects of currency depreciation slow down, domestic food production increases and oil prices fall, it is expected that inflation will fall to around 9 percent in 2015. However, it is unlikely that inflation in Malawi will reach low single-digit levels due to (i) the removal of fuel and electricity subsidies, (ii) a depreciated currency and (iii) the periodic food shortages. An additional factor that will keep inflation levels high is the increasing demand driven by economic growth. In this context, if a weather adverse event occurs, maize production would reduce generating a new significant increase in inflation.

FIGURE 7.   MALAWI ANNUAL CONSUMER PRICE INDEX
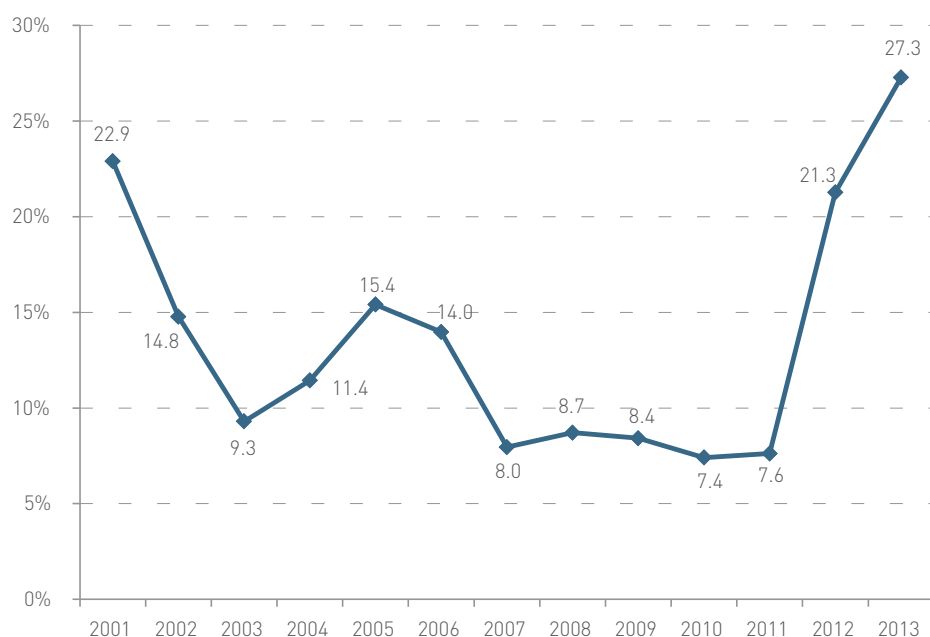
Sources: NSO, 2012b, the Reserve Bank of Malawi (RBM), WDI, 2014

Malawi's public finances seem to have improved over the last decade. The average annual external debt as a percentage of the GNI between 2005 and 2013 stood at 36 percent. Moreover, the period trend shows a significant decrease in the country's external debt, from 117 percent of the GDP in 2005 to just 31 percent in 2012 (WDI, 2014).

Total government revenue (including donor grants) averaged an annual 29 percent of GDP between 2005 and 2012. Figure 8 shows the progressive increase of the total revenues including grants in all years since 2004/05, with exception of 2013/14 when revenues fell sharply. Although the general trend seems to be relatively stable, if revenue from grants is considered separately, the dependency of Malawi on external sources of funding is still significant and exceeding other African Low Income Countries (LICs) (IMF, 2013). Owing to a large corruption scandal that occurred at the end of 2013, donors suspended disbursements and only one-third of grants budgeted were actually released in

fiscal year 2013/14. Since donors are still reluctant to disburse aid funds, the government assumes no direct budget support for 2014/15 fiscal year. So far, some measures have been put in place to improve domestic revenue collection and, to attract investors through tax incentives. Tax incentives have generated a further slowdown in domestic revenue. Nevertheless, it is expected that the government will strengthen public financial management sufficiently for donors to reinstate at least parts of suspended aid funds.

The uncertainty about future revenue and fiscal solidity has thus made the food security situation unclear in the long-run as essential interventions to improve resilience of the agricultural sector have been delayed owing to the suspension of donors grants.

Table 3 summarizes some of Malawi's selected macroeconomic indicators used in this section for the period 2005–2013.

FIGURE 8. **MALAWI'S GOVERNMENT REVENUE (MILLIONS OF MWK), 2005–2013**
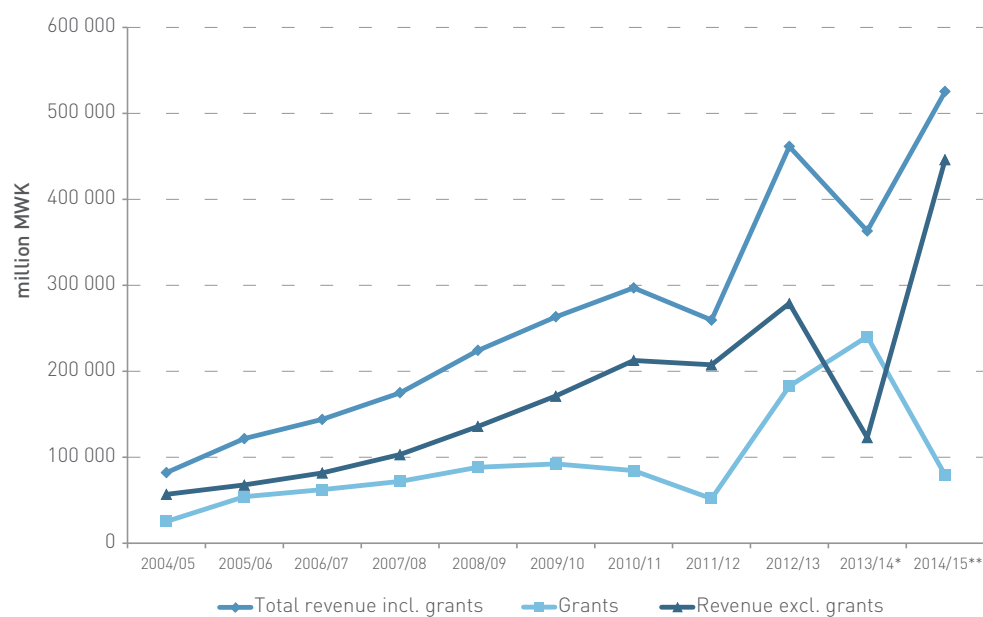
*Budget; **Outturn;   Source: NSO, Statistical Yearbook 2012 and EIU, 2014

TABLE 3. **SELECTED MACROECONOMIC INDICATORS FOR MALAWI**

Indicator	Unit	2005	2006	2007	2008	2009	2010	2011	2012	2013
GDP at Current Prices	Million US$	2,755	3,117	3,648	4,277	5,031	5,399	5,628	4,240	3,705
GDP Annual Growth Rates	(%)	2.8	2.1	9.5	8.3	9	6.5	4.3	1.9	5
Per Capita GDP at Current Prices	Million US$/head	213.2	234.2	266	302.5	345.2	359.6	364.1	266.6	226.5
Annual Inflation Rates	(%)	15.4	14	8	8.7	8.4	7.4	7.6	21.3	27.3
Imports of Goods and Services	Million US$	1,438	1,468	1,469	2,092	1,960	2,426	2,242	2,297	2,378
Exports of Goods and Services	Million US$	662	705	1,033	1,206	1,240	1,586	1,663	1,593	1,717
Balance of Trade	Million US$	-775	-763	-435	-886	-720	-840	-579	-704	-661
Imports of goods and Services as Percent of GDP	(%)	52	47	40	49	39	45	40	54	64
Exports of goods and Services as Percent of GDP	(%)	24	23	28	28	25	29	30	38	46
Total External Debt, end of year	Million US$	3,000	982	900	709	800	877	1,081	NA	1,306
Total Debt/ GDP Ratio	(%)	108.9	31.3	24.7	16.5	15.9	15.2	21.4	30.8	NA
Average Official Exchange Rates	MWK/US$	118	136	140	141	141	150	157	249	364
International Reserves (excl. Gold) end of year	Million US$	159	134	217	243	149	307	197	223	413
Total Revenue + Grants/GDP	(%)	26.3	31.7	31.2	33.2	24.5	23.8	34	26.9	NA
Total Revenue (excluding grants)/GDP	(%)	18.2	17.6	17.7	19.6	40.5	36.6	24	21.5	NA

Source: NSO, 2012 and WDI, 2014

Performance of agriculture and rural development

About 80 percent of Malawi's population depends on agriculture for their livelihood; thus, agriculture remains the most important economic sector in the country (NSO, 2010), generating more than 75% percent of export earnings and contributing around 30 percent to the country's GDP (WDI, 2014). Smallholders are accountable for 90 percent of production, with women representing three quarters of subsistence farmers.

One of the most significant changes in Malawi's agricultural system was the repeal of the Special Crops Act in the early 1990s. This act limited the production of certain export crops, most notably tobacco, to large estates; production by small-scale farmers was forbidden. The reform made it legal for smallholders to grow export crops, leading to a dramatic change in the sector - from nearly zero in 1990, smallholders now produce around 75 percent of tobacco (WB, 2009b). Currently, there are two production sub-sectors: the estate sector and the smallholder sector. However, smallholder farmers are still predominantly engaged in rain-fed/subsistence oriented production. The estate sector operates on about 1.15 million ha of freehold and leasehold land with an average plot size of 10 ha. The smallholder sector operates mainly under the customary land tenure system with an average plot size of 0.4 ha (NSO, 2010).

Malawi´s agricultural GDP grew at an annual average rate of 7 percent throughout the 2005–2013 period. Years in which agricultural GDP growth was weaker, 2010 and 2012 were the years in which droughts negatively impacted crop production, especially tobacco and maize.

FIGURE 9. **MALAWI'S AGRICULTURAL GDP ANNUAL GROWTH**

Source: EIU, 2014

As shown in Figure 10, Malawi's top agricultural products, in terms of production gross value, are also Malawi's main staple crops: potatoes, maize and cassava, which had average production values of 487, 425 and 372 million US$, over the period 2005–2013, respectively. Unmanufactured tobacco is the fourth major crop in the country, with a production value of around 240 million US$.

Maize is the main staple food in Malawi and is grown by virtually all smallholders. Food security is mainly defined in terms of availability of and access to maize. It is the first commodity produced in terms of area harvested and the second in terms of volume of production (Figure 11).

FIGURE 10. **TOP AGRICULTURAL PRODUCTS BY GROSS PRODUCTION VALUE (CONSTANT 2004–2006, AVERAGE 2005–2012**
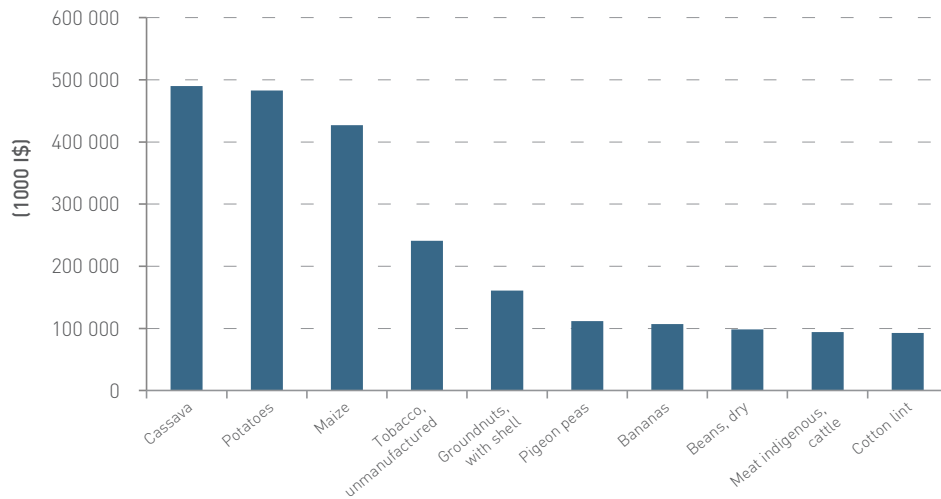
Source: FAOSTAT, 2014

FIGURE 11. **VOLUME OF PRODUCTION AND AREA HARVESTED, AVERAGE 2005–2012**
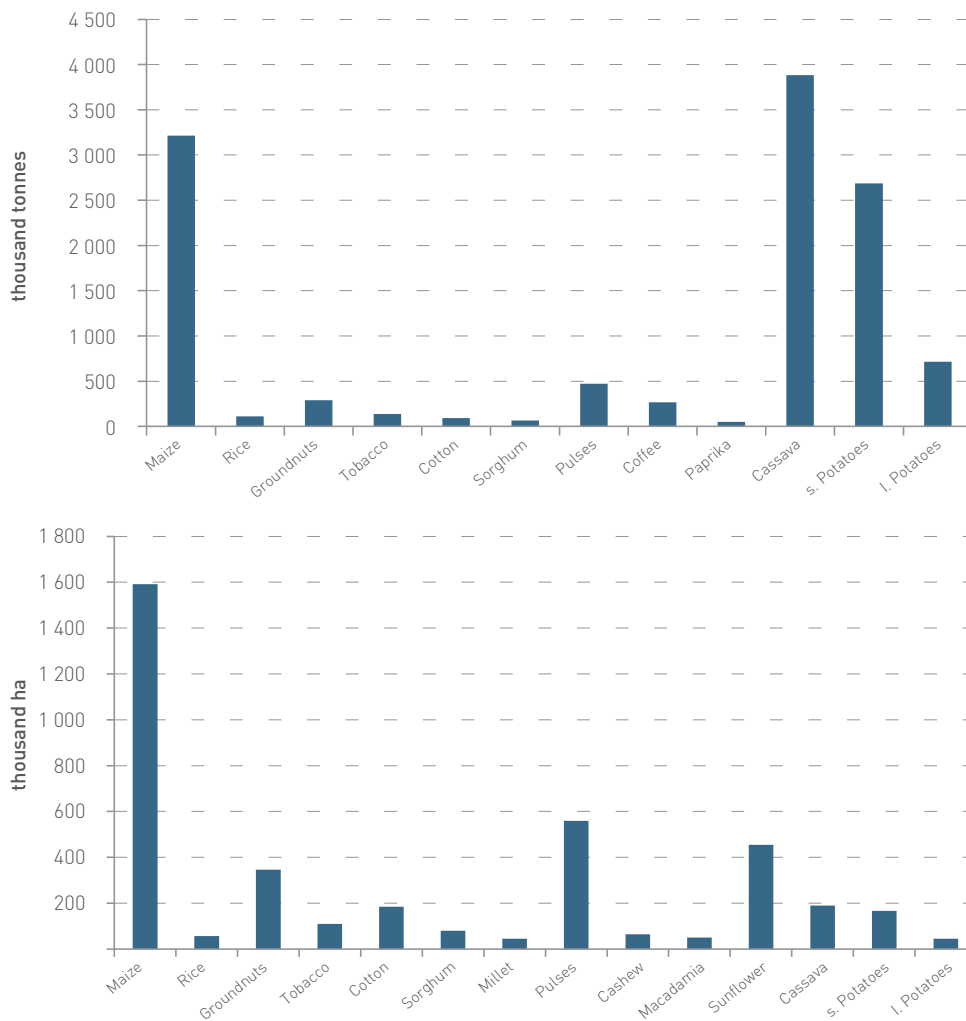
Source: AMIS, 2014[4]

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[4] Commodities covered according to the data availability of AMIS, only commodities for which production exceeds 50,000 tonnes were included.

Production of staple crops is an important component of food security. In 2007/08, 92 percent of Malawian households grew staple food crops (NSO, 2010). Maize, potato and cassava cover more than 65 percent of the country caloric food supply. Table 4 shows that Malawi is practically self-sufficient in its three main staples, although this does not imply that food commodities are equally accessible to all. Many rural poor still suffer from a "hungry season" (the three month period preceding the maize harvest), when most smallholders run out of their self-produced stocks of maize several months before the next harvest and maize prices are highest (FAO, 2011).

TABLE 4. **MALAWI´S MAIN STAPLE CROPS PRODUCTION, TRADE AND SELF-SUFFICIENCY, AVERAGE 2005–2012**

Three main staple crops	Share of Country's Food Supply (kcal/capita/day)	Production ('000 tonnes)	Export ('000 tonnes)	Import ('000 tonnes)	Self-Sufficiency	Trade balance ('000 tonnes)
Maize	50%*	2,920	120	41	103%	+79
Potatoes (thinly traded)**	9%*	2,686	n/a	n/a	100%	n/a
Cassava (thinly traded)**	6%*	3,881	n/a	n/a	100%	0

Source: *FAOSTAT 2014, MoAFS 2014 and Ministry of Trade and Industry, 2014

**Information on trade flows for cassava and potatoes is not available or inconsistent across sources. However, volumes traded are negligible for all years

Malawi's agricultural trade balance differs significantly from the country's general trade balance, which stands in a high deficit due to excessive imports of goods and services (pg. 11). Figure 12 shows the agricultural trade balance dominated by the increase in Malawi's agricultural exports over imports, resulting in an average trade surplus of more than US$ 600 million between 2005 and 2011. Although the country's food availability has proven highly correlated to internal shocks (i.e. droughts), it is fairly exogenous to international economic shocks because agricultural imports are not very important.

Although increasing, productivity levels for many crops in Malawi are still below their potential and facing significant constraints. The average agricultural Value Added per agricultural worker in Malawi is 209 US$ (in constant 2005) for the 2005/2012 period (WDI, 2014). This is far below the SSA average for the same period of 686 US$ per agricultural worker.

FIGURE 12. **AGRICULTURAL TRADE BALANCE**
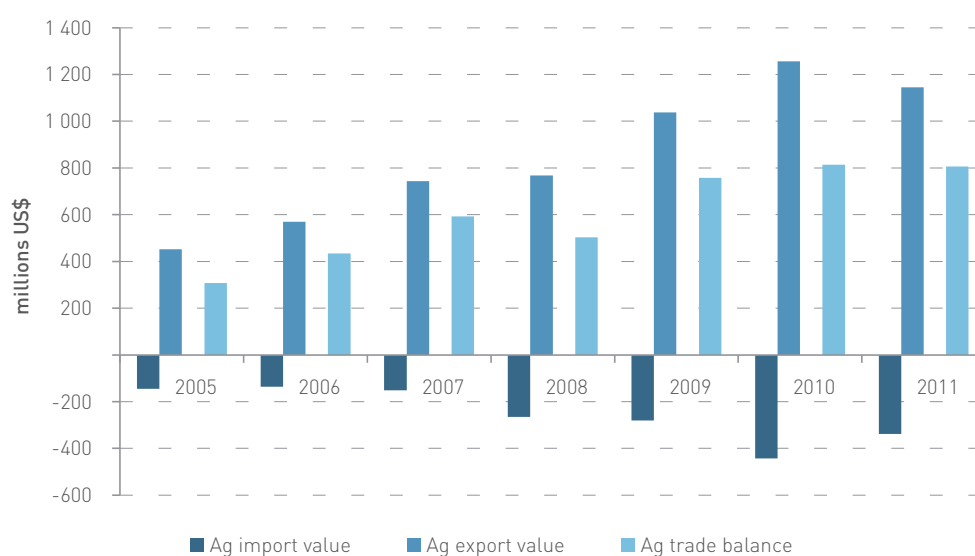
Source: FAOSTAT, 2014

Although staples have an important social and political value for the country, cash crops are the engine of Malawi's agricultural GDP growth. As seen in Figure 13, unmanufactured tobacco is the main agricultural export, followed by sugar and tea. Together, they accounted for more than 80 percent of the country's total exports between 2005 and 2011. Tobacco alone represented an average of 60 percent of Malawi´s total exports (NSO, 2012b).

As seen previously, the agricultural trade balance is positive with low import levels. Tobacco accounted for 26 percent of the total import value between 2005 and 2011. Dried leafs are imported from Mozambique and Zambia to Malawi and are re-exported as unmanufactured tobacco after being processed in Malawi. Wheat is the second import commodity, representing 25 percent of the total import value between 2005 and 2011 (Figure 14). Wheat and soybean oil are the two products showing sustained growth over time.

FIGURE 13. **TOTAL EXPORTS COMPOSITION**
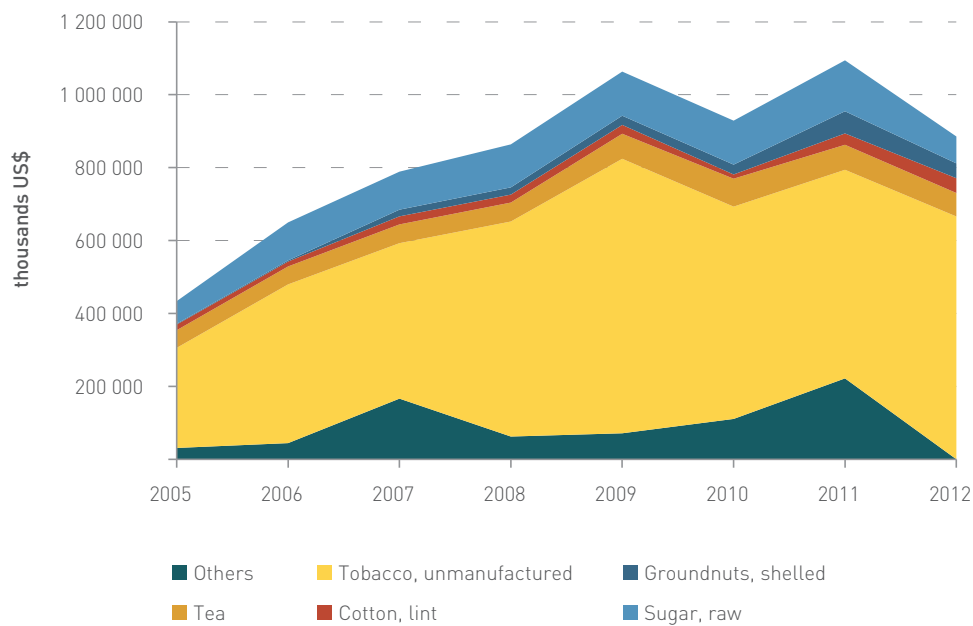
Source: FAOSTAT, 2014 (others); NSO, 2014 (tobacco, cotton, groundnuts); TAMA, 2014 (tea); Illovo, 2014 (sugar) *Data for 2012 are not available*

FIGURE 14. **TOTAL IMPORT COMPOSITION**
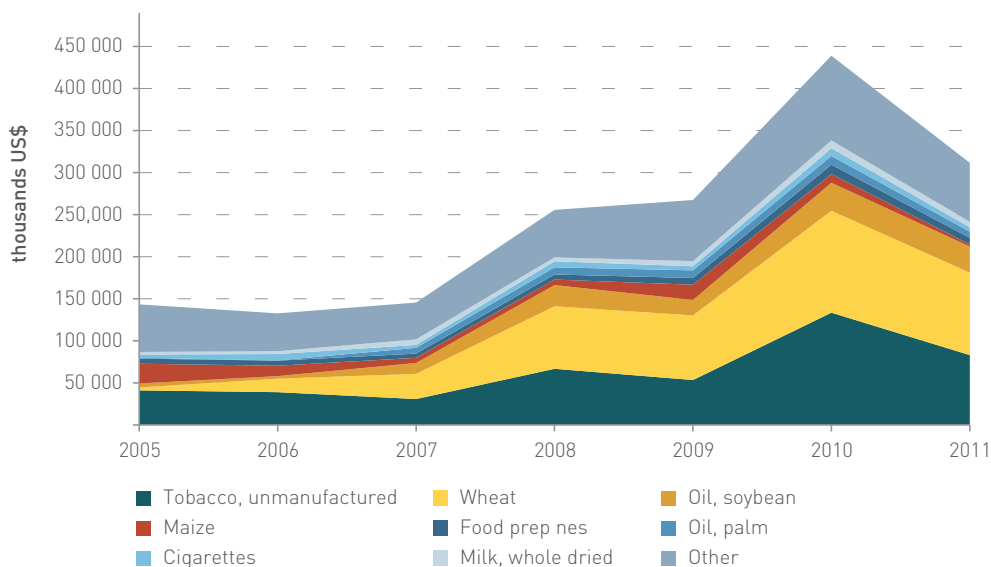
Source: FAOSTAT, 2014

Major constraints to production

The economy faces serious challenges in the diversification into non-traditional agricultural exports but also in production, marketing and distribution of agricultural products. These challenges are linked to: an over dependence on rain-fed farming and lack of irrigation infrastructure, which increases vulnerability to weather related shocks; inadequate producer incentives and low profitability owing to high transport costs, lack of access to credit, few farmers' organizations, poor rural infrastructure and lack of market information systems (WTO, 2011).

High population density is also hindering production by putting excessive pressure on land, leading to loss of fertility, particularly in the southern parts of the country. Almost 60 percent of Malawi's land is under agricultural use (FAOSTAT). Furthermore, the scarcity of land and increasing population leads to a very small average plot size of only 0.4 ha per household.

Apparently, productivity increases in Malawi have been over dependent on fertilizer use, which is quite high compared to neighbouring countries. In 2012, fertilizer use reached 40 kg/ha, compared to the average of 14.7 kg/ha in the SSA region in the same year (WDI). The main reason behind the high use of fertilizer in Malawi is the government's Farm Input Subsidy Program (FISP). Almost 80 percent of the agricultural households have benefited from this programme in 2010/11 (see Table 7 in section 4). This policy seems to have increased national maize productivity; in the period 1990 to 2013, yields increased from 1.10 to 2.03 tonnes/ha. However, the high share of public spending allocated to the FISP has prevented the government from investing in complementary growth programmes that are necessary for sustained agricultural growth.

The overdependence on subsidized fertilizer might be a major constraint to agricultural production in the long term, as practically all of Malawi's fertilizer is imported and fertilizer prices are extremely dependant on international oil prices and exchange rates (recently left to float and hence depreciated by more than 50 percent), putting an enormous burden on public finances.

Additionally, poor infrastructure is a major constraint for the agricultural sector, affecting production and causing limited access to markets for both producers and consumers. High transport costs result in higher prices, and penalize both producers and consumers. As a land locked country, Malawi is further penalized by deficiencies in regional trade infrastructure, leading to even higher transport costs to the sea ports in Mozambique (Beira and Nacala) and to a lesser extent, South Africa (Durban).

In Malawi, agricultural growth is highly dependent on rainfall. Low irrigation development constrains agricultural production, which makes Malawi's agriculture extremely vulnerable to weather conditions. According to FAO Aquastat estimates, the area equipped for irrigation in 2012 was 74 000 ha, only 2 percent of the arable area. In 2000, the total area equipped for full or partial control irrigation was 55 000 ha, of which 48 135 ha belonged to estates cultivating sugar cane, tea and coffee (FAO, 2005xx). The National Census of Agriculture and Livestock 2006/07 (NACAL) shows that only 5 percent of the smallholder parcels were irrigated. Among those, 62 percent by watering can and only 6 percent used treadle pumps (NSO, 2010).

Other constraints for the smallholder sector are the lack of sufficient storage facilities and post-harvest treatment. This is reflected in high post-harvest losses and also results in limited opportunities for farmers to capture higher off-season prices. The NACAL 2006/07 shows that only 22 percent of households owned a granary and that 55 percent of hybrid maize and 71 percent of traditional maize was not treated after harvesting.

Limited access to credit, a common problem in a developing agricultural sector, is another important constraint to Malawi's agriculture. According to the NACAL 2006/07, only 3 percent of the smallholders were credit beneficiaries. The private lending system is almost non-existent for smallholders, of whom only 1 percent (of the 3 percent that received credit), were able to access credit through a formal lending agency or bank. The rest is supplied mainly by NGOs (35 percent) and public development banking (25 percent) (NSO, 2010).

Lack of secure tenure rights, rule of law and security also reduce the potential for increased production and investment in agriculture. The NACAL 2006/07 showed that almost half of the villages (47 percent) had conflicts over land in the previous five years to the census. Fear of losing land hinders the will to invest, and thereby constrains production. Strikingly, the NACAL 2006/07 indicated that more than one out of five households

feared that their land would be encroached upon or taken away from them. Moreover, the same study showed that 17 percent of the households experienced theft of livestock during the previous 5 years to the census, and 28 percent experienced theft of produce from the field and an additional 5 percent from storage (NSO, 2010).

Finally, health conditions of household members are a major determinant of the performance of the agricultural sector. Tuberculosis, malaria and specially HIV/AIDS, hinder significantly Malawi´s agricultural potential due to sickness and death. The NACAL 2006/07 results showed that in Malawi 53 percent of the households in the smallholder sector had at least one member suffering from malaria, 30 percent from HIV/AIDS, 26 percent from asthma, 9 percent from TB and 12 percent from diabetes.

The impact of HIV/AIDS on the agricultural sector is particularly devastating; apart from the loss of persons in economically productive years, it adds a burden on affected households as it (i) requires them to save money to care for the sick, (ii) results in increased work load for household members and (iii) limits the time devoted to income generating activities due to caring for the sick.

Environment and agriculture

Malawi has a tropical climate and fertile soil that make it a very productive agricultural region when rainfall is good. Droughts and floods have had devastating effects on crop and livestock production. Between 1967 and 2011, the country experienced eight major droughts and over eighteen major floods.

The effects of agriculture on the environment are compounded by the high population density that is putting increasing pressure on land. Land for agriculture already occupies 61 percent of the country´s total land but the continual pursuit of more cropland and firewood supposes a heavy burden to the environment (WDI).

As Table 5 shows, deforestation is severe in Malawi, with a rate of almost 1 percent from 2005 to 2010, significantly higher than the eastern and southern Africa average, which experienced a 0.67 percent deforestation rate from 2005 to 2010. Moreover, the share of total land used for permanent meadows and pastures is only 33.15 percent, while the African average stands at 77.92 percent (FAOSTAT).

Due to restricted access to land, an increase in production must necessarily come from increased land intensification, likely resulting in increased pressure on natural resources due to overexploitation of water and soil, as well as contamination and degradation.

Finally, Lake Malawi is another vital resource as fish caught from the lake provide a needed source of animal protein to the population. However, the lake has been overfished and fish production per head has fallen since the mid-1980s (EIU, 2008).

TABLE 5. **PERCENTAGE OF DEFORESTATION IN MALAWI**

Period	1990–2000	2000–2005	2005–2010
Deforestation rate	0.88%	0.94%	0.99%

Source: FAO, FRA 2010

4. Agricultural policy framework in Malawi

The focus of the economic policy of the Malawi Government has evolved over the last few decades: the emphasis on large-scale agricultural and industrial development in the 1980s that caused widening income disparities has since been reformulated or entirely reversed lately. Moving away from the 'trickle down' approach to economic growth, the main goal is now to alleviate poverty directly. Strategies to achieve this have included the liberalisation of domestic markets, privatisation of parastatals, and initiatives specifically targeting smallholder farmers (EIU, 2008).

The right to food is enshrined in Malawi's constitution, stating that access to *"nutritionally adequate and safe food in the right quantities is a right of each individual"*. Agricultural development and food security are amongst the key priorities of the Government of Malawi (GoM) to achieve sustainable economic growth and poverty alleviation. The overarching national development framework, the **Malawi Growth and Development Strategy (MGDS) 2006–2011** followed by the **MGDS II 2011–2016**, focuses on increased agricultural productivity, diversification and commercialization.[5] MGDS builds on the Malawi 2020 Vision, adopted in 1998, that provides the framework to implement short- and medium-term plans for development sectors, stating that *"by the Year 2020, Malawi as a God-fearing nation will be secure, democratically mature, environmentally sustainable, self-reliant with equal opportunities for and active participation by all, having social services, vibrant cultural and religious values and being a technologically driven middle-income country"*.[6]

The thematic framework of the MGDS represented a policy shift towards economic growth and infrastructure development. Six broad themes were identified (sustainable economic growth; social protection; social development; prevention and management of nutrition disorders and HIV/AIDS; infrastructure development; and

improving good governance) and six key focus areas were recognized as critical to accelerate the attainment of the Millennium Development Goals (MDGs). These are agriculture and food security; infrastructure development; irrigation and water development; energy generation and supply; integrated rural development; and HIV/AIDS prevention and management.

From 2005 to 2013, the economy maintained an average real GDP growth rate of 5.5 percent (just below the MGDS rate target of 6 percent). The re-introduction of farm input subsidies, through the Farm Input Subsidy Program (FISP) in 2005/06, combined with favourable climatic conditions, led to a series of bumper harvests that allowed the country to recover an adequate level of food availability. However, the adverse weather conditions in 2012 led to a bad tobacco harvest: the main determinant of the sharp reduction in GDP growth that year. Moreover, the first MGDS failed to achieve a more equitable and hence, sustainable growth distribution (World Bank, 2013).[7]

Like its predecessor, MGDS II plans to reduce poverty through sustainable economic growth (targeting a 6.9 percent average rate per year, in real terms), infrastructure development, and prioritizes similar thematic areas. Among its nine key priority areas, are agriculture and food security; transport infrastructure, integrated rural development; irrigation and environmental management.

Another pillar of the country's reform agenda is the **Economic Recovery Plan** (ERP), launched in May 2012. The ERP consists of a short- and medium-term implementation plan for achieving poverty eradication focused on commercial agriculture and agro-processing (including value addition), tourism, energy, mining and infrastructure development. The recently finalized **National Export Strategy (NES) 2013–18** complements the ERP and provides a prioritised road map for developing the country's productive base to allow for both export competitiveness and economic empowerment of the poor, farmers, women and other vulnerable groups. It is based on four priority areas:

1. *Export Clusters*: development of priority clusters that have the potential to complement tobacco and drive exports through value addition. These clusters are

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[5] Prior to MGDS, the Malawi Poverty Reduction Strategy (MPRS) 2002–2005 emphasized priorities that are still valid today but its operationalization was weak. The MPRS was the first attempt to translate the long-term strategy of Malawi Vision 2020, issued in 1998, into medium-term focused action plans. The overall goal of the MPRS was to achieve "sustainable poverty reduction through empowerment of the poor". The MPRS was built around four strategic pillars, namely: sustainable pro-poor growth; human capital development; improving the quality of life of the most vulnerable; and governance (World Bank, 2013).

[6] http://www.sdnp.org.mw/malawi/vision-2020/

[7] According to the Integrated Household Survey 3, the Gini coefficient at national level has deteriorated from 0.39 to 0.45 since IHS2 (based on 2004–2005 data).

oil seed and sugar cane products and manufactures (beverages, agro-processing including dairy and maize, wheat, horticulture and pulse value addition);

2. *Conducive Environment* to economic competitiveness and economic empowerment of youth, women, farmers and micro, small and medium enterprises;

3. *Supportive Economic Institutions to Build the Productive Base of the Economy*: invest in supportive economic institutions, specifically on consumer, financial and market information systems, and improve communication and dialogue;

4. *Competencies, Skills and Knowledge*: invest significantly in competencies, skills and knowledge as a foundation of Malawi's productive base and its export capacity.

Despite being recognized as the driver of economic growth in all the overarching policy frameworks mentioned above, the agriculture development priority was only recently translated into a series of sector-specific strategic documents. These documents (see Figure 15) include the National Agricultural Policy Framework (NAPF) 2010–2016, the National Irrigation Policy and Development Strategy 2010, and the Agricultural Sector Wide Approach (ASWAp) 2010 (updated in 2011).

FIGURE 15. **MAIN POLICY FRAMEWORKS AND RURAL AND AGRICULTURAL POLICIES**
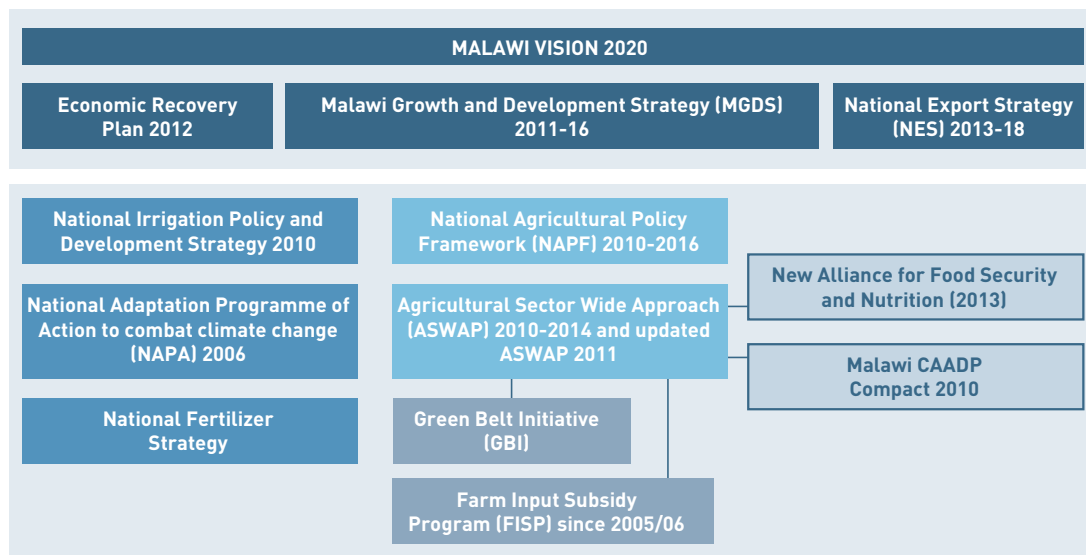
Source: Authors' elaboration

In view of harmonizing policies, the government has reviewed various national development strategies and agricultural-related legislation and policies to produce the **National Agricultural Policy Framework (NAPF)**. The main purpose of the NAPF is to promote agricultural productivity and sustainable management of land resources to achieve national food security, increased incomes and ensure sustainable socio-economic growth and development (MoAFS, 2011).

In 2010, the government also decided to adopt a more broad-based approach, through the formulation of the **Agricultural Sector Wide Approach (ASWAp)**, which foresees a single comprehensive priority programme and budget framework for the agricultural sector, based on the agricultural priority of the MGDS, and consistent with the Comprehensive African Agricultural

Development Programme (CAADP) under the umbrella of the New Partnership for Africa's Development (NEPAD) (MoAFS, 2011). It also offers a formalized process for better coordination, harmonization of investments and alignment of funding arrangements between the GoM and donors, and encourages the involvement of the private sector, farmers' organizations and civil society in the implementation process.

The ASWAp, implemented from 2010–2015, sets a growth target of 6 percent per annum for the agricultural sector, in line with the Maputo Declaration and CAADP. Considered one of the most ambitious programmes in Malawi's history, the ASWAp is characterized by three focus areas, two key support services and cross-cutting issues mainstreamed throughout the entire programme (Table 6).

TABLE 6. MAIN FEATURES OF ASWAP

FOCUS AREAS	COMPONENTS
1.Food security and Risk Management	Maize self-sufficiency through increased productivity and reduced post-harvest losses
	Diversification of food production and dietary diversification for improved nutrition
	Risk management for food stability at national level
2.Commercial agriculture, agri-business and market development	Agricultural exports of several high value commodities for increased revenue and income
	Agro-processing for value addition and import substitution
	Market development for inputs and outputs through public/private sector partnerships
3. Sustainable land and water management	Sustainable agricultural land management
	Sustainable agricultural water management and irrigation development through the Green Belt initiative
KEY SUPPORT SERVICES	
Technology generation and dissemination	Results and market oriented research of priority technology needs and provision of technical and regulatory services
	Efficient farmer-led extension and training services
Institutional strengthening and capacity building	Strengthening public management systems
	Capacity building of the public and private sectors
CROSS-CUTTING ISSUE	
HIV prevention and AIDS impact mitigation; Gender quality and empowerment	Mainstream gender and HIV/AIDS

Source: MoAFS, 2010

Instrumental to ASWAp, the **Malawi CAADP Compact** was signed in 2010, setting principles and ways of working amongst the public institutions, development partners, Civil Society, private sector, and other actors engaged in the agricultural and food security sectors. The Compact is expected to guide the alignment of existing projects and programmes to the ASWAp framework, prompting the enhanced coordination in implementing prioritised sector investments.

With similar objectives, the GoM, private sector and the G8 members also committed to the "**New Alliance for Food Security and Nutrition**" in 2013 and to working together to generate greater private investments in agricultural development and achieve sustainable food security outcomes and poverty reduction. According to the New Alliance, donors' resources are to be channelled towards high priority, high-impact investments within the ASWAp, particularly in the three growth product clusters identified in the National Export Strategy and in priority areas of the *Scaling Up Nutrition Strategy*.[8] In parallel, the Government commits to:

- consult with the private sector on key policy decisions;

- create a competitive environment with reduced risk in doing business for private sector investments

in various value chains related to food security and nutrition, while also ensuring consistency and coherence in policies;

- improve access to land, water and basic infrastructure to support food security and nutrition;

- reorganise extension services targeting nutrition, agribusiness and cooperative programmes focusing on priority crops in their primary growing areas (maize, groundnuts, soya beans, sunflower, cotton, pigeon peas and sugar cane and dairy);

- reduce malnutrition by promoting production and utilization of diversified foods with high nutritive values.

In an attempt to improve policy harmonization and coherence, some of the main on-going sub-sectoral programmes were linked to ASWAp. Among them is the **Farm Input Subsidy Program (FISP)**, reintroducing

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[8] Malawi was one of the first countries to launch the Scaling Up Nutrition (SUN) initiative in 2011. The country has a Food and Nutrition Security Policy (2005) and a National Nutrition Policy and Strategic Plan (NNP-SP) for the period 2007–2012 guiding a number of programmes to address (i) improved maternal nutrition and care; (ii) improved infant and young child feeding practices; (iii) improved intake of essential micronutrients; (iv) prevention and treatment of common infectious diseases and (v) improved management of acute malnutrition.

agricultural inputs subsidies since 2005/06 (after their abolishment in the 1990s) and implements the focus area 1 of ASWAp, while the **Green Belt Initiative (GBI)**[9] implements the focus area on sustainable agricultural land and water management (focus area 4). These programmes account for 70 percent of the total ASWAp budget; significantly less attention and budgetary resources are devoted to the private sector, capacity building, agricultural diversification efforts, value chain development and financing to accelerate the commercialization of agriculture (COMESA/NEPAD, 2010).

Other major on-going agricultural programmes in Malawi are the (i) *Farm Income Diversification Programme (FIDP) 2010 – 2014* to improve rural livelihoods, including activities aimed at improved capacity in trade policy; the (ii) *Irrigation, Rural Livelihoods and Agricultural Development Project (IRLADP) 2006 – 2011* which seeks to strengthen institutional capacity for irrigation development and management; and the (iii) *Institutional Development Across the Agri-food Sector (IDAF)*, which includes the development of state and non-state actors in the agricultural and food sectors.

Recently, in an effort to improve the productivity and profitability of smallholder agriculture, the GoM has also issued a written policy on fertilizer that was embedded in the **National Fertilizer Strategy (NFS)** with the purpose of addressing issues affecting the adoption and utilization of fertilizer technologies through short-, medium- and long-term actions for developing private sector-led fertilizer markets.[10] In implementing the NFS thus far, the government has primarily focused on the less capital- and time-intensive actions, namely the enactment of a legal and regulatory framework, enhancing the skills and knowledge of agro-input dealers through donor programme collaboration and implementation of a subsidy programme.[11] Given the fiscal burden of the subsidy programme, other actions

that could increase fertilizer market development have been neglected (IFDC, 2013).

4.1 Recent Policy Developments

The Government of Malawi implemented a number of liberalizing policy reforms within the agricultural sector over the past 20 years. In general, the reforms were oriented to market liberalization of agricultural input and output markets; removal of trade restrictions to allow smallholder farmers to participate in growing high value export commodities such as tobacco, and the privatization of parastatals in the agricultural sector (WTO, 2010). The policy decisions taken in the period under review are not always aligned with the past liberalization trend. This is due, in part, to political, economic and food security crises experienced in recent years. The re-introduction of input subsidies, exchange rate control until mid-2012, and trade restrictions, primarily on maize were some of the key interventions adopted by the government to face these emergency situations.

International trade policy

Malawi has been a member of the Common Market for Eastern and Southern Africa (COMESA) since its establishment in 1994, the Southern Africa Development Community (SADC) and the African Caribbean and Pacific- European Union (ACP-EU). The COMESA Common External Tariff (CET) is zero for capital goods and raw materials, 10 percent for intermediate goods and 25 percent for finished products. The SADC Free Trade Area has been in effect since 2008.

According to the WTO, Malawi is one of Africa's more open economies. The country has a relatively low tariff average of 13.5 percent and a general absence of non-tariff barriers (WTO, 2011). Maize grain, the principal food and subsistence crop in the country, is tax-free in the tariff schedule. For maize meal however, a tariff of 25 percent is applied to imports from Most-Favoured-Nation and SADC origins whereas those from COMESA member countries and other origins are duty free. Despite these free trade agreements, in response to food crises in the early 2000s, the government has imposed quantitative restrictions over maize trade. Formal maize imports were only carried out through a government tender system that licensed the private sector to procure maize abroad. Official maize exports only took place under specific government licenses monitored by the

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[9] The GBI aims at reducing poverty, improving livelihood and sustainable food security at both household and national level through increased production and productivity of agricultural crops, livestock and fisheries (GoM, 2011).

[10] To address these issues, the NFS sets five objectives (i) increase timely fertilizer availability, (ii) to facilitate farmer access to affordable fertilizer, (iii) to improve utilization of fertilizer and related inputs and (iv) to facilitate infrastructure improvement.

[11] On this see Chinsinga B. (2011). Agro-dealers, Subsidies and Rural Market Development in Malawi: A Political Economy Enquiry. Working Paper 031, Future Agricultures.

National Food Reserve Agency (NFRA). Authorities, expecting a sharp fall in production and increase in domestic maize prices, also imposed temporary export bans on maize export in 2005, in mid-2008, late 2011 and in April 2013.

FIGURE 16.   MAP OF COMESA (LEFT) AND SADC MEMBER COUNTRIES (RIGHT)
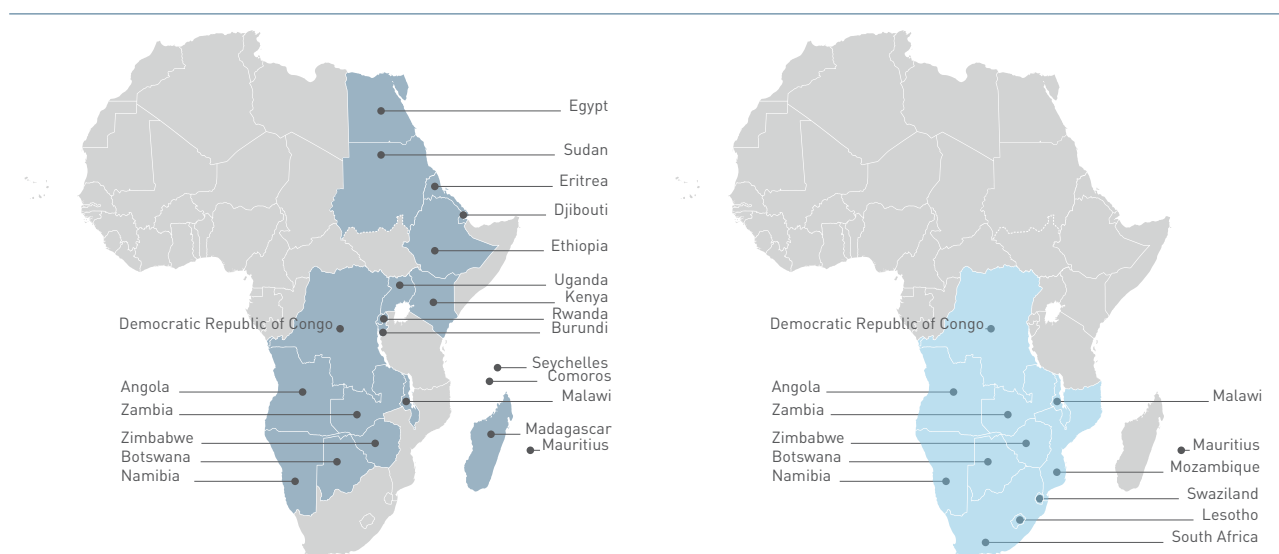
Exchange rate policy

The main macroeconomic policy affecting the agricultural sector has been the government control over the foreign exchange rates, directly affecting the costs of imported agricultural inputs and agricultural exports. Officially, the exchange rate has been floating freely since 1994; however, it really functioned as a managed float with market interventions by the Reserve Bank of Malawi. In 2008, the government tightened the control of the exchange rate, moving almost to a fixed rate regime. Prior to the devaluation in May 2012, when the government decided to modify the exchange rate policy and allow the currency to float freely against the US dollar, the currency was estimated to be significantly overvalued. Despite the negative short-term impacts, especially with regard to the inflation rate that affected most severely the poorest and caused social unrest, the devaluation is expected to help boost Malawi's export sector and attract international donor funds that were conditional on exchange rate policy reforms.

Direct input subsidies

Input subsidies were an important feature of Malawi's agricultural sector for decades, until they were largely abolished in the 1990s by the imposition of the WB-IMF Structural Adjustment Program (SAP). Following the Malawi food crisis of 2005 however, a large-scale input

subsidy programme was re-introduced during the 2005/06 crop season to increase agricultural productivity and thus improve food security.

The main feature of the FISP is the provision of fertilizer and seed subsidies for maize, targeting smallholder (poor) farmers through vouchers.[12] Inputs for other commodities were also distributed through the programme. Tobacco fertilizers were included only until the 2008/09 agricultural season and the provision of legumes seeds was introduced in 2009/10. Cotton seeds and chemicals were included in the 2007/08, 2008/09 and 2011/12 cropping season only. Table 7 summarizes key features of the programme each year.

The most relevant developments of the programme are the noticeable growth of volumes of subsidized fertilizer and seed sales, the growing involvement of the private sector in procurement and importation of inputs, and the adjustment of targeting criteria, registration and selection processes, placing increasing emphasis on vulnerable beneficiaries and voucher distribution.

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[12] Vouchers entitle the beneficiaries to purchase two 50kg-bags of fertilizers at a subsidized price. This quantity is to be considered sufficient for 0.4 hectares of land. In the first two years, farmers were required to purchase subsidized maize seed; from the 2008/09 to 2012/13 seasons, these (mainly hybrid) seeds were provided free of charge.

TABLE 7. FISP MAIN FEATURES, 2005/06 TO 2011/12

		2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Fertilizer voucher distribution (tonnes equivalent)		166 156	200 128	216 000	195 369	160 000	160 000	140 000
Households receiving coupon(s)		n/a	54%	n/a	67%	n/a	79%	n/a
Total subsidized fertilizer sales (tonnes)	planned	137 006	150 000	170 000	170 000	160 000	160 000	140 000
	actual	131 388	174 688	216 553	197 498	159 585	160 531	139 901
Fertilizer voucher value, approx. (MWK/bag)		1 750	2 480	3 299	7 951	3 841	5 237	6 539
Subsidy % (approx.)		64	72	79	91	88	91	93
Subsidized maize seed (tonnes)		n/a	4 524	5 541	5 365	8 652	10 650	8 245
% Hybrid seed		0	61	53	84	88	80	68
Cotton seed/chemicals;		No	No	Yes	Yes	No	No	Yes
legume seed (tonnes)				24	1	1 551	2 726	2 562
Total programme cost (MWK million)	planned	5 100	7 500	11 500	19 480	21 908	19 700	21 586
	actual	4 480	10 346	13 362	33 922	15526	21 868	23 455

Source: Dorward and Chirwa, 2013

Various analysts have remained positive about FISP, as it is considered the main factor contributing to the shift from the national maize deficit situation in 2002/03 - 2004/05 to the recent surplus. Despite that, the sustainability of the programme in the long run appears debatable, both in financial terms and in terms of government capacity to procure and distribute greater quantities of inputs. In recent years, the government has faced some challenges in bearing FISP costs, accounting for more than half of the total MoAFS budget on average (Table 8). In particular, in 2008/09, soaring fertilizer prices caused programme costs to skyrocket to over US$ 214 million. Additionally, the sharp currency devaluation in 2012 likely had a major effect on programme costs in the 2012/13 implementation period (Douillet *et al*, 2012).

TABLE 8. FISP COSTS

	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Exchange rate (MWK/US$)	140	140	140	140	141.31	151.55	166.71
Programme budget (US$ million)	36.43	53.57	82.14	139.14	155.04	129.99	129.48
FUNDING:							
Direct donor support (US$ million)	0	9.51	7.13	37.75	17.48	22.05	44.85
Balance: GoM	n/a	64.39	100.31	214.04	100.92	129.12	95.84
Cost, % MoAFS budget	n/a	46.8	57.2	67.6	52.7	60.1	48.9
Cost, % national budget	n/a	6.8	8.2	16.2	6.5	8	7.1
Cost, % GDP	n/a	2.5	3.1	6.6	2.5	3	n/a

Source: Dorward and Chirwa, 2013

Marketing and price policies

Since the 1980s, marketing and price policies were also gradually liberalized from a domain controlled by the state marketing agency Agricultural Development and Marketing Corporation (ADMARC), with fixed pan-territorial and pan-seasonal pricing for main commodities, to a market in which private traders operated within the limits of a government-set price band.

However, following the critical situations in the availability of and access to maize in 2002 and 2005, the government introduced both minimum producer prices as well as price ceilings at retail, to be enforced by ADMARC. This pricing policy has been pursued since 2006 even though ADMARC has failed to defend the move and private trade takes place outside of the price bands set by the government. In August 2008, all private international and domestic trade was banned and ADMARC was re-established as the exclusive legal buyer and seller of maize. However, the ban was removed a month later and replaced by a new price band within which private trade was allowed. In addition to blocking the circulation of maize within Malawi, from surplus to deficit areas, banning private trade also impedes informal import of maize from Mozambique and Tanzania to the deficit areas in North and South Malawi.

On the other hand, the National Food Reserve Agency (NFRA) has a mandate to maintain adequate buffer stocks of grain to ensure domestic supplies. The NFRA, established as an independent trust in July 1999, buys from ADMARC, private traders and imports maize when necessary. Their sourcing depends mostly on the domestic availability of maize and in times of emergencies, on availability of transport; although they do rent warehouses throughout the country.

Land policies

Following a countrywide consultation process, a new land policy was finalized in 2002, as initial step in revising the legal framework governing land rights and correcting imbalances between estate and smallholder land ownership.[13] The 2002 Land Policy's objectives are to promote tenure reforms that guarantee security and fairness in all land transactions, ensure secure tenure and equitable access to land for all citizens without any discrimination, establish a modern land registration system for delivering land services, and enhance conservation and community management of local resources, among others.

Despite the creation of the Malawi Land Reform Programme Implementation Strategy (2003–2007), in the absence of an implementing land law, adoption of the principles in the Land Policy has been limited to a few donor-sponsored projects (USAID, 2010).

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[13]   The Malawi National Land Policy is available at http://www.cepa.org.mw/documents/legislation/policies/Malawi_National_Land_Policy_2002.pdf

TABLE 9.   **SELECTED FOOD AND AGRICULTURAL POLICY DEVELOPMENTS**

DATE		POLICY DEVELOPMENT
2005	JUL	Export ban on maize and fertilizers
	OCT	Government declares national emergency: export ban reiterated
		Emergency social safety nets in place (cash-for-work and food-for-work)
2006	JAN	Launch of the Farm Input Subsidy Program (FISP), primarily targeting maize producers
		Temporary ban on domestic private maize sales. ADMARC is the sole maize seller
	FEB	Export ban lifted due to estimated output surplus
	DEC	Industry Tax Rebate Scheme: tax on raw materials reduced to promote local value addition
		Safety net programmes launched in response to food crisis: cash-for-work and food-for-work
		Construction of maize silos to increase the national storage capacity from 180 000 tonnes to 240 000 tonnes
	APR	Maize export ban re-introduced, except for export quota to Zimbabwe (government-to-government deal)
		Ban on private trade of maize, ADMARC is the sole trader in the country and buys maize from farmers at fixed rate (MWK 45/kg)
		Price cap on maize sold by ADMARC to consumers (MWK 52/kg). However, maize prices remained generally above the maximum set prices

DATE		POLICY DEVELOPMENT
2008	SEP	Construction of additional large-scale silos and promotion of Mini Metal Grain Silos for storage at community level
		Domestic private trade allowed under restrictive licensing conditions and operation within price band
	OCT	FISP extended to 65 percent of households, including additional commodities (maize, tobacco, cotton, pulses, and groundnuts).
	NOV	Government started the construction 600 metal maize storage facilities across the country
2009	JAN	Tax on tobacco sales though Auction Floors or direct sales
		Green Belt initiative launched to improve credit access to farmers, and extend irrigation up to 1 million ha of cereals, legumes, sunflower and sugarcane
	JUN	Minimum purchase prices set for main food crops: price for maize set at MWK 40/kg (US$ 0.28), with ADMARC procurement price at MWK 50-60 per kg. However private traders are buying maize at well below the set minimum purchase price
	AUG	Maximum retail price of maize set at MWK 52 (US$ 0.37) per kg to protect consumers
	SEP	Food aid distribution (totalling 140 000 tonnes)
2010	MAR	Reduction of tax on tobacco sold at the auction from 7 to 4 percent in order to increase tobacco farmers' income
	JUN	Budget increase for the Green Belt Initiative, focused on irrigation development through the National Water Development Program (NWDP)
		Construction of small grain silos
		Procurement of maize by the National Food Reserve Agency through private bid system
	AUG	Export ban lifted (until then, only government to government export agreements were allowed)
	OCT	Introduction of 16.5 percent VAT on previously exempted commodities such as water supply, ordinary bread, meat, residues, wastes from food industries
2011	FEB	Import duty on wheat flour rose from 5 to 10 percent in 2011
	JUN	Maize consumer price increased from US$ 12 to 18 per 50-kg bag due to limited stocks
	DEC	Export ban on maize and maize products imposed.
2012	APR	Devaluation of the currency (10 percent in August 2011 and an additional 40 percent in April 2012) to address a foreign exchange shortage and stem a thriving black market.
	MAY	Instauration of a free-float foreign exchange regime
2013	APR	Export ban on maize re-affirmed by government and border patrols increased

Sources: FAPDA, ITC (2012), Chinsinga & Chirwa (2013), Ellis & Manda (2012) and FEWS NET (2014)

Part 2.
The effects of agriculture and food policies

To achieve specific development objectives, governments adopt policies to curb the rules governing the economy as a whole (macro-economic policy), or those governing a particular economic sector (sector policies), in order to guide and modify the behaviour and decisions of agents operating in the economy. Governments can influence the economy by creating policies which regulate, incentivize or inform economic agents. This can be done by establishing a legal framework that agents must adhere to (e.g. food quality or safety norms, property rights) or run the risk of legal prosecution. Another approach is institutional reform or the provision of incentives or disincentives to certain types of behaviour via price and trade policies, input and output marketing policies, social policies (income transfers, safety nets, social security schemes) and finance policies. Finally, governments can establish policies which increase agents' access to critical research, training and market information.

Public expenditure, on the other hand, can be used to make goods and services available to the food and agriculture sector, to support the implementation of government policies and to facilitate the achievement of development objectives. Expenditure may, for example, include the provision of public goods through public investment in infrastructure, or provide private benefits such as subsidies or income transfers.

To monitor government actions and ensure that they adequately contribute to development objectives, it is essential that authorities are aware of the incentives or disincentives that the policies they implement may provide to the economy, as well as the consistency, efficacy and adequacy of the way in which public resources are spent.

Some of the key questions that governments need to consider include the following:

- Do policies in place provide incentives for production, processing and marketing in key food and agricultural value chains?

- Which agents operating in the most strategic value chains benefit from the policies in place: producers, processors, traders, consumers?

- Which policies should be changed so that the incentive structure in the food and agriculture sector is more aligned with government objectives?

- Is public expenditure allocated in a way that key issues characterising the food and agriculture sector are effectively addressed? (i.e. what is the most efficient way to improve farmer incomes – implement an input subsidy programme or undertake an investment on rural roads?). Is public investment focusing on key investment needs?

- Are policy incentives and public expenditure consistent, or do they provide contradictory signals to the economy in some cases?

- Are public resources spent efficiently, or is an excessive share of it used for administrative costs?

5. Incentives, disincentives and market development gaps

5.1 Highlights of the methodology

MAFAP methodology seeks to measure price incentives for producers and other marketing agents in key agricultural value chains. The analysis is based on the comparison between observed domestic prices and constructed reference prices. Reference prices are calculated from the international price of the product at the country's border, where the product enters the country (if imported) or exits the country (if exported). This price is considered the benchmark price free of influence from domestic policies and markets. MAFAP estimates two types of reference prices – observed and adjusted. Observed reference prices are those that would prevail if distortions from domestic market and trade policies as well as overall market performance were removed. Adjusted reference prices are the same as observed reference prices, but also exclude any additional distortions from domestic exchange rate policies and structural inefficiencies in the commodity's value chain.

MAFAP's price incentives analysis is based on the law of one price, which is the economic theory that there is

only one prevailing price for each product in a perfectly competitive market. This law only applies in the case of homogeneous goods, if information is correct and free and if transaction costs are zero. Thus, this analysis was conducted for goods that are either perfectly homogeneous, perfect substitutes in the local market in terms of quality or are simply comparable goods. Indicators calculated from reference and domestic prices will therefore reveal whether domestic prices represent support (incentives) or a tax (disincentives) to various agents in the value chain.

Domestic prices are compared to reference prices at two specific locations along commodity value chains – the farm gate (usually the main production area for the product) and the point of competition (usually the main wholesale market where the domestic product competes with the internationally traded product). The approach for comparing prices at each location is summarized below, using an imported commodity as an example. In this situation, the country is importing a commodity that arrives in the port at the benchmark price (usually the unit value CIF price at the port of entry). In the domestic market, we observe the price of the same commodity at the point of competition, which is in this case the wholesale market, and at the farm gate. We also have information on observed access costs, which are all the costs associated with bringing the commodity to market, such as costs for processing, storage, handling, transport and the different margins applied by marketing agents in the value chain. These include access costs between the border and wholesale, as well as between the farm gate and wholesale.

The benchmark price is made comparable to the domestic price at wholesale by adjusting for three factors to derive the observed reference price at wholesale. The first factor is the access costs between the border and wholesale. For an imported commodity, these costs are added to the benchmark price to take into account all the costs incurred by importers and other agents to bring the commodity to market, which in effect, raises the price of the commodity. The second factor is the difference in quantity between the imported product and domestic product, if relevant. This adjustment is made when the type of product imported differs from the domestic product marketed at wholesale. For example, if the country primarily imports milled rice, but paddy rice is the domestic product marketed at wholesale, then a quantity conversion ratio would need to be applied to the benchmark price before adding the

access costs, so that the reference price is expressed in the same unit as the domestic price at wholesale. The quantity conversion ratio is equivalent to the volume of outputs produced with one unit of inputs. In the case of rice, it would be the volume of milled rice produced with one unit of paddy rice. Finally, the third factor is the difference in quality between the imported product and domestic product, if relevant. This is usually the ratio of the average retail price for the domestic product to the average retail price of the imported product.

The observed reference price at wholesale is further made comparable to the domestic price at the farm gate by adjusting for the same three factors, resulting in the observed reference price at farm gate. This is done by deducting the access costs between the farm gate and wholesale, which take into account all the costs incurred by farmers and other agents to bring the commodity from the farm to the wholesale market, and by adjusting for any quantity and quality differences between the domestic product marketed at wholesale and the domestic product marketed at farm gate, if relevant. Mathematically, the equations for calculating the observed reference prices at wholesale (RP_{owh}) and farm gate (RP_{ofg}) for an imported commodity are as follows:

$$RP_{owh} = (P_b \ x \ QT_{wh} \ x \ QL_{wh}) + AC_{owh}$$

$$RP_{ofg} = (RP_{owh} \ x \ QT_{fg} \ x \ QL_{fg}) - AC_{ofg}$$

where P_b is the benchmark price, QT_{wh} is the quantity conversion ratio between the border and wholesale, QL_{wh} is the quality conversion ratio between the border and wholesale, AC_{owh} are the observed access costs from the border to wholesale, QT_{fg} is the quantity conversion ratio between the wholesale and farm gate, QL_{fg} is the quality conversion ratio between the wholesale and farm gate and the AC_{ofg} are the observed access costs from the farm gate to wholesale.

The same steps described above can be taken a second time using benchmark prices that have been adjusted to eliminate exchange rate misalignments and access costs that have been adjusted to eliminate structural inefficiencies in the commodity's value chain[14], where possible and relevant. The adjusted benchmark prices and access costs are then used to generate a second set

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[14] Structural inefficiencies in commodity value chains may include high transportation and processing costs, high profit margins captured by various economic agents, bribes and other non-tariff barriers.

of *adjusted* reference prices, in addition to the first set of observed reference prices calculated.

For exported commodities, a slightly different approach is used. In this case, the auction or border is generally considered the point of competition (referred to here as "wholesale" for consistency), and the unit value FOB price for the commodity is usually taken as the benchmark price. Furthermore, reference prices at wholesale are obtained by subtracting, rather than adding, the access costs between the border and wholesale. Mathematically, the equations for calculating the observed reference prices at wholesale (RP_{owh}) and farm gate (RP_{ofg}) for an exported commodity are as follows:

$$RP_{owh} = (P_b \ x \ QT_{wh} \ x \ QL_{wh}) - AC_{owh}$$

$$RP_{ofg} = (RP_{owh} \ x \ QT_{fg} \ x \ QL_{fg}) - AC_{ofg}$$

After observed and adjusted reference prices are calculated for the commodity, they are subtracted from the domestic prices at each point in the value chain to obtain the observed and adjusted price gaps at wholesale and farm gate. *Observed price gaps* capture the effect of distortions from trade and market policies directly influencing the price of the commodity in domestic markets (e.g. price ceilings and tariffs), as well as overall market performance. *Adjusted price gaps* capture the same as the observed, in addition to the effect of any distortions from domestic exchange rate policy and structural inefficiencies in the commodity's value chain. Mathematically, the equations for calculating the observed price gaps at wholesale (PG_{owh}) and farm gate (PG_{ofg}) are as follows:

$$PG_{owh} = P_{wh} - RP_{owh}$$

$$PG_{ofg} = P_{fg} - RP_{ofg}$$

where Pwh is the domestic price at wholesale, RP_{owh} is the observed reference price at wholesale, P_{fg} is the domestic price at farm gate and RP_{ofg} is the observed reference price at farm gate.

In general, price gaps provide an absolute measure of the market price incentives (or disincentives) that producers and wholesalers face. Therefore, price gaps at wholesale and farm gate are divided by their corresponding reference price and expressed as a ratio, referred to as the **Nominal Rate of Protection (NRP)**, which can be compared between years, commodities and countries.

The *Observed Nominal Rates of Protection* at the farm gate (NRP_{ofg}) and wholesale (NRP_{owh}) are defined by the following equations:

$$NRP_{afg} = \frac{PG_{afg}}{RP_{afg}} \ ; NRP_{owh} = \frac{PG_{owh}}{RP_{owh}}$$

where PG_{ofg} is the observed price gap at farm gate, RP_{ofg} is the observed reference price at the farm gate, PG_{owh} is the observed price gap at wholesale and RP_{owh} is the observed reference price at wholesale.

Similarly, the *Adjusted Nominal Rates of Protection* at the farm gate (NRP_{afg}) and wholesale (NRP_{awh}) are defined by the following equations:

$$NRP_{afg} = \frac{PG_{afg}}{RP_{afg}} \ ; NRP_{awh} = \frac{PG_{awh}}{RP_{awh}}$$

where PG_{afg} is the adjusted price gap at farm gate, RP_{afg} is the adjusted reference price at the farm gate, PG_{awh} is the adjusted price gap at wholesale and RP_{awh} is the adjusted reference price at wholesale.

When calculating the price gap and NRP, there are three possible outcomes. The first is a price gap and NRP of zero, resulting when producers or wholesalers receive a price equal to the reference price. This reflects a situation of neutral policy impact on commodity prices, where the allocation of resources is consistent with the country's comparative advantage in producing the commodity, which is the ideal situation from an economic efficiency standpoint.

The second possible outcome is a positive price gap and NRP, resulting when producers or wholesalers receive a price higher than the reference price. This means that the policy environment generates price incentives (support) to producers or wholesalers. In this case, producers or wholesalers are supported through transfers from consumers and/or taxpayers, who are penalized. As a result, more resources are allocated to the commodity relative to the optimal allocation from an economic efficiency standpoint. In an economy with fixed resources, more of the commodity and less of other competing commodities may be produced. For an imported commodity, this could be due to distortions such as an import tariff, which raise the domestic price of the commodity, thereby taxing consumers and supporting producers and/or wholesalers.

The third possible outcome is a negative price gap and NRP, resulting when producers or wholesalers receive a price lower than the reference price. This means that the policy environment generates price disincentives (taxes) to producers or wholesalers. In this case, consumers and/or taxpayers are supported through transfers from producers or wholesalers, who are penalized. As a result, fewer resources are allocated to the commodity relative to the optimal allocation from an economic efficiency standpoint. In an economy with fixed resources, less of the commodity and more of other competing commodities may be produced. For an imported commodity, this could be due to distortions such as a price ceiling, which reduces the domestic price of the commodity, thereby supporting consumers and taxing producers and/or wholesalers.

If budgetary and other transfers to producers of the commodity are added to the price gap at farm gate when calculating the ratios, the **Nominal Rate of Assistance (NRA)** is generated. Thus, this indicator summarizes the incentives (or disincentives) due to domestic policy, market performance and budgetary and other transfers allocated to the commodity. Mathematically, the *Observed Nominal Rate of Assistance (NRA$_o$)* and *Adjusted Nominal Rate of Assistance (NRA$_a$)* are defined by the following equations:

$$NRA_o = \frac{PG_{ofg} + BOT}{RP_{ofg}} \; ; \; NRA_a = \frac{PG_{afg} + BOT}{RP_{afg}}$$

where PG_{ofg} is the observed price gap at farm gate, BOT are the budgetary and other transfers allocated to the commodity, RP_{ofg} is the observed reference price at farm gate, PG_{afg} is the adjusted price gap at farm gate and RP_{afg} is the adjusted reference price at farm gate.

Finally, MAFAP methodology estimates the **Market Development Gap (MDG)**, which is the portion of the price gap that can be attributed to exchange rate misalignments and "excessive" or inefficient access costs within a given value chain. "Excessive" access costs may result from factors such as high transportation costs due to poor infrastructure, high processing costs due to obsolete technology, high profit margins captured by various economic agents due to non-competitive behaviour, bribes and other non-tariff barriers. Therefore, the total MDG at farm gate is comprised of two components – gaps due to "excessive" access costs and the exchange rate policy gap. When added together, these components are equivalent to the difference between the observed and adjusted price gaps at farm gate.

Similar to the price gaps calculated, the MDG is an absolute measure, which is also expressed in relative terms to allow for comparison between years, commodities and countries by calculating the ratio of the total MDG at farm gate (MDG_{fg}) to the adjusted reference price at farm gate (RP_{afg}) as follows:

$$MDG_{fg} = \frac{(ACG_{wh} + ACG_{fg} + ERPG)}{RP_{afg}}$$

where ACG_{wh} is the access costs gap at wholesale defined as the difference between observed and adjusted access costs at wholesale, ACG_{fg} is the access costs gap at farm gate defined as the difference between observed and adjusted access costs at the farm gate, $ERPG$ is the exchange rate policy gap and RP_{afg} is the adjusted reference price at farm gate.

This report presents MAFAP's price incentives results at both the commodity-specific and aggregate level in order to provide a more general picture of trends. NRPs and MDGs for the commodities analysed in each country were aggregated as a means of presenting and comparing results for different commodity groups, country groups and multi-year periods. All aggregate indicators were calculated as a weighted average, based on contribution to the total value of production for the respective aggregate group.

A more detailed description of the methodology applied in this analysis is available on MAFAP's website at www.fao.org/in-action/mafap.

To demonstrate how the methodology has been applied to the analysis of price incentives and disincentives in Malawi, the following subsections briefly discuss the main decisions taken for calculating MAFAP indicators for the commodities studied.

5.2 Commodities selection

For Malawi, six key commodities were selected for the price incentives analysis. For the selection, a review of agricultural production, trade and food consumption was undertaken according to the following criteria:

• Contribution to food security

• Contribution to food import bill

- Contribution to export revenue

- Contribution to value of agricultural production

- Policy interest

- Data availability.

To ensure that the set of indicators allow cross-country comparison across Low and Middle Income Countries (LMIC), agricultural products representing a significant share of total agricultural production value within their respective region or within Africa as a whole, were identified for analysis in each country. Where applicable, products with high potential for use in promising or emerging value chains were also taken into account. In principle, the commodities analysed should represent at least 70 percent of the total value of agricultural production in the country, and should be representative of different categories of tradability in terms of import, export, non-tradable products, and food-security-relevant commodities.[15] However, given the major data constraints in Malawi, covering 70 percent of the total value of agricultural production was not possible.

The sources used for the selection of products were:

- FAOSTAT (2014) production data for the value of total production in 2005–2011 in constant 2004–2006 prices

- FAO TRADESTAT (2014) imports and exports data in terms of value and volumes (2005–2011)

- FAOSTAT (2014) Food Balance Sheets for food intake data (2005–2009)

The value of production, exports and imports and food intake of the most relevant commodities are presented in the table in Annex 1.

Based on these criteria, the products initially selected for the analysis of incentives/disincentives are reported in the Table 10.

In addition to the above-mentioned criteria, it is important to take into account commodities targeted by national strategies as well as to consider the feasibility of the analysis in terms of data availability, in selecting the products.

In Malawi, the ASWAp targets a large number of commodities and groups of commodities important for food security such as maize, pulses, horticulture crops, tubers, livestock (including milk), and fish. The ASWAp also focuses on: export commodities such as tobacco, tea, sugar, and groundnuts; import-competing commodities; and high value addition crops such as rice, fruits, vegetables, livestock, and dairy products. The NES focuses on a limited number of products: (i) oil seed products (sunflower, groundnuts, soya and cotton), (ii) sugar cane products, and (iii) manufactures (in terms of commodities this includes dairy, maize, wheat, horticulture and pulses). The G8 New Alliance gives priority to maize, groundnuts, soybeans, sunflower, cotton, pigeon peas, sugar cane and dairy.

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[15] In this context, a commodity is considered "non-traded" when less than 2.5 percent of total production is traded (internationally), while it is considered "export" or "import" depending on whether the country is a net exporter or a net importer for that specific product.

TABLE 10.   COMMODITY SELECTION FOR MALAWI BASED ON MAFAP CRITERIA

MAFAP Criteria					
	Production	Import	Export	Food security	Africa wide representativeness
1. Cassava	■			■	■
2. Maize	■			■	■
3. Potatoes	■			■	
4. Sugar	■		■		
5. Tobacco	■	■	■		
6. Groundnuts	■				■
7. Wheat		■			
8.Tea			■		
9.Roots, tuber dry equivalent				■	

The collection of data for the price incentives analysis, undertaken by MAFAP team members based in Malawi in collaboration with the Center for Agricultural Research and Development (CARD) and the Ministry of Agriculture and Food Security (MoAFS), include annual average prices at the farm gate, wholesale and border as well as information on access costs.[16] This proved particularly cumbersome due to lack of farm gate, wholesale and benchmark price data in the form of a historical time series for the period under analysis (2005–2013) as well as for access costs data: all of which are essential for MAFAP price incentives analysis. Data gaps were encountered especially with respect to thinly traded commodities such as cassava and potatoes as

well as wheat, soybean oil and roots, owing to the lack of information on (i) domestic prices, (ii) access costs and (iii) trade flows and market pathways.

Taking into consideration all of these criteria, and in consultation with the MoAFS, it was decided to focus MAFAP analysis on the products reported in Table 11: cotton, groundnuts, maize, sugar, tea and tobacco. These commodities altogether represent 32 percent of the value of production, more than 90 percent of the value of exports, 30 percent of the value of imports and 25 percent of the value of those products considered important for food security. As mentioned above, analysing commodities representing 70 percent of the total agricultural value of production as required by the MAFAP methodology was not possible owing to the lack of price information on major commodities important for food security, namely, cassava and potatoes.

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[16] All costs incurred to move the commodity from the farm gate to whole-sale and from wholesale to the border or from the border to wholesale in the case where the commodity is mainly exported.

TABLE 11.   **FINAL COMMODITY LIST USED IN THE ANALYSIS OF PRICE INCENTIVES AND DISINCENTIVES**

Export Products	Food Security
Cotton	Maize
Groundnuts	
Sugar	
Tea	
Tobacco	

The analysis of these six commodities required a huge effort given the data fragmentation encountered. This situation can be attributed to the lack, not only of a Market Information System, an issue in many developing countries and SSA in particular, but also of a statistical service within MOAFS dedicated to monitoring producer, wholesale and retail prices. Hence, as far as aggregate indicators are concerned, the level of representation was considered adequate to carry out the analyses for export products and food security products only.

5.3 Data inputs and sources

This section provides a general summary of the data and sources used in the market price incentives analysis conducted for selected commodities. More detailed descriptions of data inputs and calculations are

provided in the MAFAP Technical Notes drafted for each commodity.[17]

Farm gate and point of competition

As mentioned previously, observed domestic and reference prices are compared at two specific locations along each commodity's value chain – the farm gate and the point of competition. The farm gate is the major production area for the commodity and the point where observed producer prices are obtained, while the point of competition is the location along the value chain where domestic products compete with identical products at equivalent world market prices. If the products against which domestic ones are compared are not identical, quality and quantity adjustments are applied to make the two commodities comparable. A detailed analysis of the value chain for each product was

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[17] http://www.fao.org/in-action/mafap/products/publications-archive/tech-nical-notes/en/

conducted to identify the commodity pathway, primarily key production areas and the point of competition.

Farm gate prices were available only for cotton (from a private company) and groundnuts (from a producers' organization), while for tobacco, maize, tea, and sugar, farm gate prices were constructed from primary and secondary data derived from value chain studies and sub-sector associations. This unorthodox approach has been taken as an exception to the official MAFAP methodology but will be no longer possible in the next phase of the programme. Therefore it is critical to emphasize the need for systematic agricultural price data collection in Malawi henceforth.

The point of competition was analysed for maize and tobacco, while for the remaining commodities (cotton, groundnuts, sugar and tea), a point of competition was either not appropriate to the analysis for methodological reasons or there was no reliable data at this point in the value chain. For maize, the first and largest wholesale market where imports from Mozambique meet domestically produced maize, was taken as the point of competition. Tobacco is sold only through auction in Malawi and therefore, the Auction Holdings Limited price was taken as the point of competition. Tea on the other hand is sold either through the auction or directly to overseas buyers. Since only one third of high-grade tea is sold through auction while the remaining lower priced tea is directly exported at an unknown but lower price, meaning the two grades are not comparable at point of competition, the auction could not be used for the analysis of tea. The export value chains for cotton and groundnuts are fully integrated from producer to border and thus no point of competition was considered in the analysis of these commodities. Table 12 provides a summary of the data sources for domestic prices.

TABLE 12. **METHODOLOGICAL OPTIONS AND DATA SOURCES FOR DOMESTIC PRICES USED**

Option	Data source	Commodity
Wholesale price	Reserve Bank of Malawi/TCC	Tobacco
	Constructed	Maize
Farm gate price	NASFAM, 2014 / Great Lakes Cotton Company	Groundnuts, Cotton
	Constructed	Tobacco, Maize, Tea, Sugar
Exchange rate	Nominal: IMF (2014)	All commodities
	Adjusted: Calculated using misalignment as estimated by IMF, 2012	All commodities

Note: NASFAM: National Smallholder Farmers' Association of Malawi; TCC: Tobacco Control Commission

Source: Authors' elaboration based on commodity-specific technical notes, 2014

Benchmark prices

Benchmark prices are taken as annual unit values of imports (CIF price) or exports (FOB price) of individual commodities as reported by trade statistics databases of national trade or statistics institutions, the United Nations (UnComtrade), FAOSTAT or the Global Trade Atlas (GTA). In the case of maize, where trade volumes are low and of a primarily informal nature (FEWSNET, 2014) except in cases of government negotiated contracts, the benchmark price was taken from the nearest wholesale markets in Mozambique, where the majority of informally traded maize crosses the border into Malawi. For cotton, the data observed in the UNComtrade Database (2014) showed values that were significantly different from the price trends in the international cotton market. For that reason, the internationally accepted Cotlook A index (an international price) was used as a benchmark.[18] The FOB price for groundnuts was constructed from the South Africa CIF price minus access cost between Malawi and South Africa. The FOB price for tea is derived from NSO data on total value and volume of exported tea.

Table 13 provides an overview of the benchmark price option applied for each commodity.

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[18] The Cotlook A Index is calculated by taking a simple average of the day's cheapest five import (CIF) quotations, which are found in Asia. Therefore, transport costs from Asia to the Malawi border have been deducted.

TABLE 13. METHODOLOGICAL OPTIONS AND DATA SOURCES FOR BENCHMARK PRICES USED IN MALAWI ANALYSES

Option	Data Source	Commodities
Unit export or import value for all destination (origin) countries of exports (imports)	MoTI/NSO/UNComtrade/TCC	Tobacco (FOB), Tea (FOB), Sugar (FOB)
Unit export or import value for one destination (origin) country of exports (imports) minus (plus) access costs	MoTI/NSO/ UNComtrade /Global Trade Atlas	Groundnuts (CIF South Africa)
Wholesale price in major import (export) market considering the access costs to country's border	GIEWS price data and analysis tool	Maize
World Price Indicator (minus access cost)	Cotlook A Index	Cotton

Note: MoIT: Ministry of Industry and Trade; NSO: National Statistics Office of Malawi

Source: Authors' elaboration based on commodity-specific technical notes, 2014

Access costs

In order to assess whether domestic prices are affected by domestic policies or market performance, it is necessary to establish 'distortion-free' reference prices at the two points along the value chain that can be compared with observed prices in the domestic market: at wholesale and at the farm gate. To do this, access costs are either subtracted (export) or added (import) to the price at the border to reach the reference price at point of competition and then subtracted to reach a reference price at farm gate.

The access costs are defined as all costs involved in bringing the commodity from one point in the value chain to another. Access costs should include all concepts related to market access such as processing, storage, handling, transport and the various profit margins applied by agents in the chain.

Access costs between the farm and the wholesale market (point of competition) are calculated based on information collected by the national team from a wide variety of data sources. These sources include value chain analyses, international databases and interviews with stakeholders. In the absence of sufficient data, access costs can be calculated as the difference between wholesale prices and producer prices. Indeed, it is considered under this alternative that the gap between the two prices reflects the real functioning of the chain when all explicit taxes are excluded. A detailed explanation of the access costs considered for each commodity can be found in the individual technical notes, and the components considered for each commodity are summarized in Table 14.

Access costs between the point of competition and the border include all import or export procedures, transport and handling, agents' fees and trader margins. If no specific data was available, trader margins were considered as 10 percent of the value of the purchased commodity (i.e. of the wholesale price for exports and of the CIF price for imports). It is important to note that the components of access costs, both between the point of competition and the border as well as between the farm gate and the point of competition, depend on the respective commodity and the chosen commodity pathway. Table 14 summarizes the different components of access costs that were considered for each product.

Adjusted access costs take into account better functioning markets. To determine access costs reflecting efficient value chains, the following adjustments have been made:

• Excessive profit margins were reduced to 5 percent of the commodity price at purchase

• Due to indications of excessive transport costs as a result of underdeveloped infrastructure, transport costs have been reduced by deriving the share of costs in comparison with those of South Africa as indicated by the Logistics Performance Index (LPI) of the World Bank.[19]

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[19] The LPI includes 6 dimensions: (1) efficiency of the clearance process by border control agencies, including customs; (2) quality of trade and transport related infrastructure; (3) ease of arranging competitively price shipment; (4) competence and quality logistic services; (5) ability to track and trace consignments; (6) timeliness of shipments in reaching destination within schedules or expected time delivery.

- Levies, duties and fees have been eliminated where applicable.

- Illegal taxes on roads from production areas to point of competition and from the point of competition to ports for export / import have been deducted.

TABLE 14. **ACCESS COSTS COMPONENTS IN MALAWI**

Access costs component	Data source	Commodities (except cotton)	Cotton
Transport	Value Chain Study	Maize (2005, 2010)	All Access costs for cotton are derived from the Malawi Seed Cotton Pricing Model for Buying Season 2008/09 from the GoM
	WB Transport Study (surveys conducted: 2008/2013)	Tobacco, Groundnuts, Maize, Sugar	
Handling	Value Chain Study	Maize (2005)	
	Other	Groundnuts (NASFAM), Tea (Eastern Produce)	
Margins	Value Chain Study	Tobacco (2004, 2011), Maize (2005, 2010)	
	Other	Groundnuts (NASFAM), Tea (Eastern Produce)	
Processing	Value Chain Study	Tobacco (2004)	
	Other	Groundnuts (NASFAM), Tea (Eastern Produce), Sugar (Agritrade, 2010)	
Taxes and Fees	Value Chain Study	Tobacco (2004, 2011), Maize (2005, 2010)	
	Other	Groundnuts (NASFAM), Tea (WB, 2014), Sugar (KCGT)	

Note: NASFAM: National Smallholder Farmers' Association of Malawi; KCGT: Kasinthula Cane Growers Trust

Source: Authors' elaboration based on commodity-specific technical notes, 2014

Aggregate indicators

Farm gate-level indicators for commodities are aggregated into relevant product groups to enable the presentation of results for the agriculture sector as a whole or according to the trade status of the product analysed. Aggregate indicators are calculated as weighted averages based on each commodity's relative contribution to the total value of agricultural production. The main indicators of MAFAP are:

- The nominal rate of protection for the agricultural sector (NRPag)

- the nominal rate of protection for imported products (NRPimp)

- the nominal rate of protection for exported products (NRPexp)

- the nominal rate of protection for non-or thinly traded (NRPnot)

- the nominal rate of protection for food security products (NRPfs)

- market development gaps for the product categories and for the agricultural sector as a whole (MDGimp, MDGexp, MDGnot, and MDGsag)

- The Nominal Rate of Assistance (NRA)

For Malawi, only three types of aggregate indicators are presented for the six commodities analysed: export products and the nominal rate of assistance for group of commodities targeted by input subsidies programmes such as the FISP.

5.4 Indicators of effects of incentives or disincentives

Table 15 and Table 16 show the two sets of indicators that MAFAP has produced for Malawi: price gaps and NRPs.

- The indicators calculated using observed prices and access costs (observed price gap and observed NRPs) represent the effects of policy measures and the overall market performance in the country on agricultural incentives. Indicators are expressed in

absolute terms (price gap) and relative terms (Nominal Rate of Protection).

• The indicators calculated using adjusted costs (adjusted price gaps, adjusted NRPs and MDG) take into account several other sources of price distortions such as market power in international and domestic markets, the effects of exchange rate policies, and excessive access costs. Indicators are expressed in absolute terms (price gap) and relative terms (Nominal Rate of Protection).

TABLE 15. **OBSERVED AND ADJUSTED PRICE GAPS IN MWK/TONNE**

	MWK/tonne	2005	2006	2007	2008	2009	2010	2011	2012	2013	AVG
Observed price gap at point of competition	Maize	3,024	3,551	-104	5,311	11,235	2,411	3,817	55	17,005	5,145
	Tobacco	87	30	581	401	12	-200	-316	906	587	232
Adjusted price gap at point of competition	Maize	1,053	1,484	-885	-1,765	10,796	302	-2,973	-17,818	17,803	888
	Tobacco	80	23	574	393	3	-209	-325	899	581	224
Observed price gap at farm gate	Maize	1,043	-772	473	-8,915	-407	3,991	3,613	-5,872	-15,937	-2,532
	Shelled Groundnuts	2,181	13,141	-5,466	-47,765	1,775	-2,775	-27,845	-135,201	-538,234	-82,243
	Made Tea	-37,632	-28,522	-14,958	-26,339	-81,898	-77,355	-123,523	-67,220	-290,170	-83,068
	Tobacco	10,300	4,141	81,342	56,404	1,708	-30,036	-49,397	225,684	213,964	57,123
	Sugar	-6,641	-28,616	-12,484	-22,674	-14,146	-21,084	-15,286	31,744	-50,629	-15,535
	Cotton	5,190	-2,628	-5,354	24,270	13,521	-7,230	-71,479	-25,668	1,452	-7,547
Adjusted price gap at farm gate	Maize	-3,271	-5,461	-3,709	-18,321	-3,603	-1,890	-7,352	-27,971	-18,432	-10,001
	Shelled Groundnuts	-19,052	-9,946	-28,154	-97,092	-15,400	-32,949	-94,176	-151,202	-557,169	-111,682
	Made Tea	-54,133	-46,048	-26,062	-58,945	-88,045	-99,740	-178,350	-67,756	-290,845	-101,103
	Tobacco	-9,369	-16,940	63,761	-1,670	-29,193	-84,498	-114,490	176,317	144,268	14,243
	Sugar	-13,900	-38,918	-19,412	-41,194	-17,501	-32,085	-37,331	30,336	-52,404	-24,712
	Cotton	-3,671	-12,432	-13,680	5,992	8,201	-22,702	-111,637	-30,741	-5,020	-20,632

Source: Authors' elaboration based on commodity-specific technical notes, 2014

TABLE 16. **OBSERVED AND ADJUSTED NOMINAL RATES OF PROTECTION (NRP)**

		2005	2006	2007	2008	2009	2010	2011	2012	2013	AVG
Tobacco	NRPOfg	20%	-9%	39%	21%	-9%	-10%	-31%	110%	44%	19%
	NRPAfg	-2%	-24%	23%	-2%	-20%	-27%	-49%	70%	24%	-1%
	NRAO	20%	1%	46%	25%	-4%	-10%	-31%	110%	44%	22%
	NRAA	-2%	-15%	29%	0%	-16%	-27%	-49%	70%	24%	2%
	EDM (MDG)	-21%	-20%	-12%	-23%	-16%	-24%	-43%	-11%	-11%	-20%
Tea	NRPOfg	-40%	-29%	-18%	-23%	-46%	-44%	-56%	-24%	-52%	-37%
	NRPAfg	-49%	-40%	-28%	-40%	-48%	-50%	-65%	-25%	-52%	-44%
	NRAO	-40%	-29%	-18%	-23%	-46%	-44%	-56%	-24%	-52%	-37%
	NRAA	-49%	-40%	-28%	-40%	-48%	-50%	-65%	-25%	-52%	-44%
	EDM (MDG)	-29%	-25%	-17%	-36%	-6%	-23%	-57%	0%	0%	-22%
Maize	NRPOfg	10%	-6%	7%	-31%	-2%	24%	26%	-15%	-22%	-1%
	NRPAfg	-22%	-31%	-35%	-48%	-15%	-9%	-29%	-47%	-24%	-29%
	NRAO	10%	42%	51%	-15%	24%	72%	46%	1%	1%	26%
	NRAA	-22%	4%	-9%	-36%	8%	26%	-18%	-36%	-3%	-10%
	EDM (MDG)	-37%	-39%	-61%	-47%	-15%	-29%	-62%	-69%	-4%	-40%
Groundnuts	NRPOfg	5%	26%	-6%	-38%	2%	-2%	-13%	-38%	-68%	-15%
	NRPAfg	-29%	-13%	-26%	-55%	-12%	-23%	-34%	-58%	-69%	-36%
	NRAO	5%	26%	-6%	-38%	2%	-2%	-13%	-38%	-68%	-15%
	NRAA	-29%	-13%	-26%	-55%	-12%	-23%	-34%	-58%	-69%	-36%
	EDM (MDG)	-47%	-36%	-28%	-63%	-16%	-27%	-37%	-7%	-8%	-30%
Cotton	NRPOfg	22%	-9%	-15%	60%	47%	-9%	-49%	-20%	1%	3%
	NRPAfg	-11%	-32%	-31%	10%	24%	-23%	-60%	-24%	-2%	-16%
	NRAO	40%	4%	-4%	84%	78%	3%	-38%	-6%	11%	19%
	NRAA	0%	-23%	-23%	24%	47%	-14%	-51%	-10%	7%	-5%
	EDM (MDG)	-31%	-36%	-28%	-28%	-13%	-20%	-54%	-5%	-3%	-24%
Sugar	NRPOfg	-27%	-57%	-31%	-42%	-31%	-34%	-24%	69%	-33%	-23%
	NRPAfg	-44%	-64%	-41%	-57%	-36%	-44%	-43%	64%	-34%	-33%
	NRAO	-27%	-57%	-28%	-38%	-25%	-34%	-24%	69%	-33%	-22%
	NRAA	-44%	-64%	-39%	-54%	-30%	-44%	-43%	64%	-34%	-32%
	EDM (MDG)	-41%	-47%	-24%	-59%	-11%	-27%	-45%	-2%	-2%	-29%

Source: Authors' elaboration based on commodity-specific technical notes, 2014

5.5 Results by commodity

Maize

- Disincentives at the farm gate over the 2005–2013 period were primarily driven by low producer prices, owing to farmers marketing their maize when prices are lowest (April-June).

- Sharp price increases on the domestic and regional market and ad hoc government trade policies further exacerbated already extreme seasonal price variations, leading to severe disincentives at farm gate in 2008, 2012 and 2013.

- Additional disincentives arise from high access costs between farm gate and wholesale due to poor rural infrastructure and an overvalued exchange rate until mid-2012.

- Incentives at farm gate are due to high domestic maize prices in Malawi relative to the region, particularly in years of limited domestic and international trade restrictions, namely, 2007, 2010, and 2011.

- Incentives at the point of competition in all years except a neutral situation in 2007 and 2012 are due to the ability of wholesalers and medium and large-scale traders to store maize in anticipation of higher prices later in the year.

- Conversely, consumers received disincentives throughout the period since the NRP at wholesale can be taken as an inverse proxy indicator for consumers.

Maize is Malawi's main staple food crop and is of great strategic importance as the country's food security status is generally defined in terms of adequate availability of and access to maize. The crop is almost exclusively produced by smallholder farmers and makes up almost 60 percent of total food consumed (Mazunda & Droppleman, 2012). Thus, the need to ensure low maize prices for consumers while at the same time improving income for small farmers constitutes a constant food price dilemma for policy makers (Timmer, 1984). A well-functioning maize market is a key condition for reducing food insecurity in Malawi. For these reasons, maize has been the primary target of food and agricultural policy interventions in Malawi.

Production

Almost all maize production is rain-fed, occupying 54 percent of all smallholder farmers' cultivated land. Following the Malawi food crisis of 2005 (FAO & WFP 2005), a large-scale input subsidy programme was introduced during the 2005/06 crop season to tackle some of the key constraints faced by Malawian small farmers, including low yields and high costs of inputs. The main feature of the FISP is the provision of vouchers for seeds and fertilizer for maize production, targeting approximately 50 percent of small-scale farmers. After

the introduction of the FISP in the 2005/06 cropping season, maize production almost doubled by 2011 (see Figure 17), before declining in 2012/13 due to poor rains in most parts of the country. After removing the effect of above-average rainfall, it is estimated that the impact of the programme on the national maize harvest amounts to 300 000-400 000 tonnes in 2006 to 60 000-70 000 tonnes in 2007 (Doward & Chirwa, 2011).

Consumption and utilization

Chimanga ndi moyo – maize is life – is a famous Malawian saying, and underlines the importance of maize as the main staple food for Malawians. Thus, the main objective of smallholder households is to produce enough maize to meet the annual food requirements of their families. Maize constitutes almost 90 percent of the total intake of cereals and 54 percent of the total caloric intake per capita. Adults of 10 years and above require 270kg of maize per year while children below the age of 10 require 135kg (Jayne *et al*. 2010; GoM, 2012). In 2011 however, the average per capita intake was only 131.2 kg of maize per year (FAOSTAT, 2014). Low cereal prices are crucial for nutrition because higher cereal prices can crowd out expenditures on more nutritious food such as eggs and green leafy vegetables.

The majority of households are net buyers of maize and over the period 2003–2009, it is estimated that only 10-15 percent of maize produced by smallholder farms was marketed. Over half of rural households do not sell maize at all and an additional roughly 10 percent of rural households buy and sell grain in the same year. These largely consist of relatively poor households that make distress sales of grain after harvest in order to meet immediate cash needs, only to buy it back later in the season at higher prices (Jayne *et al*, 2010).

Marketing and trade

Since 2006, Malawi has been practically self-sufficient in maize, with relatively low traded volumes in comparison with total production. Apart from 2005, in all other years under review, Malawi registered more production than what the nation consumed. However, there are deficit areas in the North and most severely in the South, supplied by means of informal trade by Tanzania and Mozambique surplus areas. Though the 2007–2009 crop seasons have generally witnessed good harvests, FEWSNET (2014) data indicates that informal imports significantly exceeded total exports in most years under review. In terms of official trade volumes, data as provided by the NSO shows that Malawi was a net importer of maize in most years. Only in 2007 and 2011, was the country a net exporter of maize. These formal exports of maize from Malawi are based on government-to-government agreements, carried out by the private GTAM and monitored by the NFRA. Aggregate official and informal imports and exports data as reported by the NSO and FEWS NET indicate that Malawi was a net exporter in both domains only in 2011.

FIGURE 17. **MAIZE PRODUCTION, YIELD AND AREA IN MALAWI**
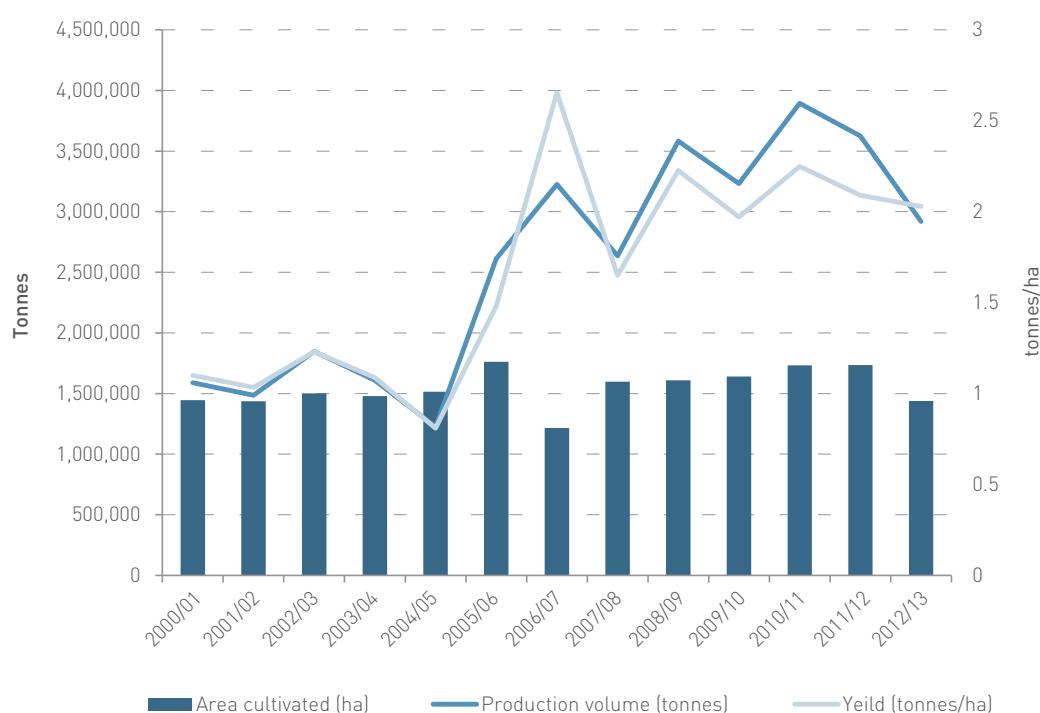
Source: MoAFS, 2014

The marketing environment in Malawi has a high level of unpredictability due to the changing government role in the market. Some examples of this are; government procurement and sale of subsidized grain, operation of price bands, contracts only for selected traders, banning of internal and external trade as well as import tariff rate changes. Export bans on maize were in place in 2005/06, 2008/09 and 2012/13 and import restrictions were present throughout the entire period under review. The Ministry of Agriculture and Food Security operates a price band system for maize in order to protect consumers and support producers; however, this policy has not been sufficient for price stabilization, particularly during 2008/09 and 2012/13 due to the limited financial capital of ADMARC.

Value chain

The majority of maize producers are smallholders, with an average cultivated land holding of about 1 hectare and dependent on favourable weather conditions for a good harvest. Most maize is produced for home consumption but of the small portion marketed by smallholders, the majority is sold just after the harvest to meet immediate cash needs.

There are many traders at the primary assembly level where the market is characterized by a high degree of competition. Since these areas are difficult to access by truck, many use bicycles to transport small amounts of grain to assembly points that can be accessed by larger vehicles.

Medium and large-scale traders usually have access to transportation and storage facilities. This enables them to buy from producers when the price is low, immediately pre or post-harvest, and to sell stocks when prices are higher later in the year. Large-scale traders often buy from small-scale traders and not directly from producers. This allows them to obtain larger volumes and reduce transaction costs (USAID, 2009). These large traders, such as Mulli Brothers and members of the GTPA, also supply the NFRA and contract requirements with the WFP, NGOs and other institutions. Larger traders and farms also supply maize to processing companies that produce maize flour and animal feeds. Large milling companies usually purchase maize grain through traders or are traders themselves. Due to their storage capacity, they concentrate their purchases during the trading season of June-July to take advantage of the low prices.

Indicators and analysis

As the most important food security crop in Malawi, maize tends to be the focus of both producer and consumer oriented national programmes and policies. Between 2006 and 2013, 71 percent of food and agricultural specific public expenditure[20] exclusively targeted maize production, mainly through input subsidies in the framework of the FISP. Besides increasing domestic supply through increased productivity, trade and market policy measures were also implemented to contain domestic prices for consumers, namely, export bans, maximum retail prices, and marketing restrictions.

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[20] Food and Agricultural public expenditure refers to expenditure specific to agriculture and does not include expenditure supporting rural development (indirect support). It includes national expenditure and on-budget support from donors.

This analysis utilizes an adaptation of the orthodox MAFAP analysis due to severe data constraints but aims to identify and measure the effects of such policies on producers, wholesalers and consumers.

Disincentives at the farm gate over the 2005–2013 period (see Figure 18) were primarily driven by low producer prices, owing to the fact that the majority of farmers market maize from April to June when prices are lowest. Sharp price increases on the domestic and regional market due to international market or climatic factors and ad hoc government trade policies further exacerbated the already extreme seasonal price variations, leading to severe disincentives at farm gate in 2008, 2012 and 2013. Our results show that there are additional disincentives for producers that arise from high access costs between farm gate and point of competition due to poor rural infrastructure, high margins of traders and an overvalued exchange rate in most years under consideration.

Farmers received mild incentives in 2005 since the domestic price at farm gate was higher than the benchmark price because of the maize deficit at the domestic level in the context severe drought and the subsequent national food crisis. Mild disincentives in 2006 on the other hand, were the result of low farm gate prices owing to the oversupply following a bumper harvest, an export ban in effect since July 2005 and the arrival of grain imports negotiated in the previous year. Mild incentives in 2007 can be attributed to the lifting of the 2005 export ban in February that year, which prevented prices from dropping too low during the harvest period.

The greatest disincentives for farmers were registered in 2008, the year of the food price crisis in Malawi. Domestic prices were kept artificially low only during the harvest period by the implementation of an export ban in April, therefore, the producer price increased in 2008 but to a lower extent than the benchmark and retail prices, creating disincentives of -48 percent. While food prices were falling across the border, they remained high in Malawi much longer. Producer and retail prices continued to be high into the harvest season of 2009 while the benchmark price decreased, leading to only minimal disincentives at farm gate that year. In 2010, farmers received a 25 percent incentive to produce. Due to a slight fall in production, domestic prices were high in relation to the benchmark price, particularly around the harvest period when the majority of farmers market

their maize. The 2008 export ban was lifted in August 2010; this enabled Malawi to become a net exporter in 2011 when production peaked and international prices were high that year, creating incentives of 26 percent to farmers. In 2012, strong disincentives (-47 percent) were the result of the export ban imposed in December 2011, causing domestic prices to plummet, reaching their lowest point in April and May 2012. However, the benchmark price had been rising since April, surpassing domestic prices in May but remaining high until the end of the year. The devaluation of the kwacha in May 2012 led to high inflation, reaching almost 40 percent in 2013; this drove up the cost of transportation and services in the value chain, increasing the reference price at farm gate and therefore leading to disincentives for producers.

FIGURE 18. **OBSERVED AND ADJUSTED NOMINAL RATES OF PROTECTION AT FARM GATE AND POINT OF COMPETITION FOR MAIZE IN MALAWI**
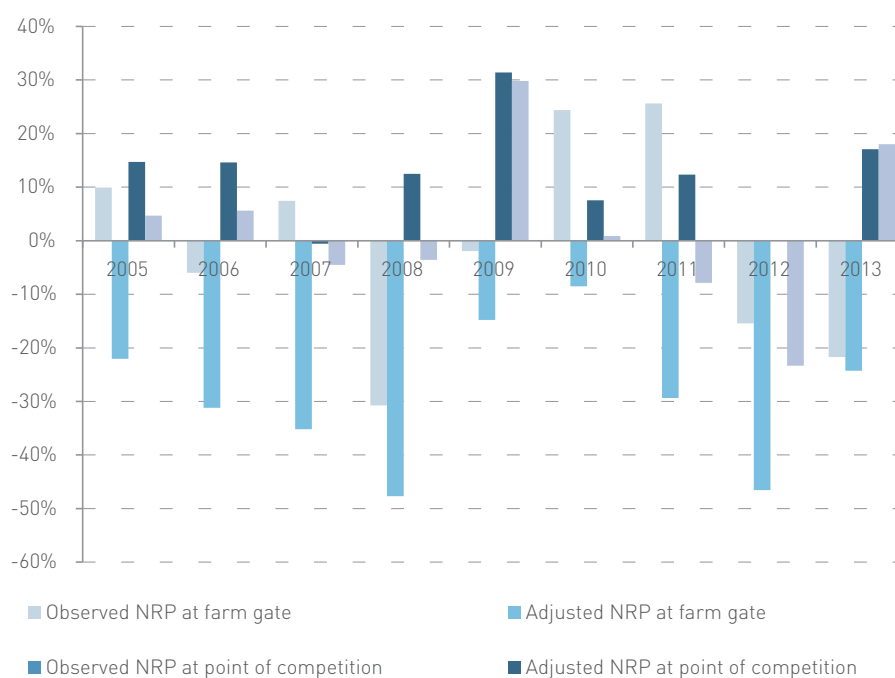
Source: Authors' calculations, 2014

Price incentives at farm gate can be generally considered a product of the high domestic maize prices in Malawi in relation to the region, particularly in years of limited domestic and international trade restrictions, namely, 2007, 2010 as well as 2011 (net export year). In other words, trade restrictions – both foreign and domestic – resulted in price disincentives for producers.

Incentives at the point of competition in all years under consideration, aside from a neutral situation in 2007 and 2012, can be attributed to the ability of wholesalers and large-scale traders to store maize in anticipation of higher prices later in the season. Conversely, consumers received price disincentives to purchase maize throughout the entire period under consideration except 2007 and 2012 since the NRP at wholesale serves as an inverse proxy indicator of disincentives for consumers.

In the adjusted domain, farmers and wholesalers receive further disincentives although more pronounced for farmers due to inefficiencies in the farm gate – point of competition segment of the value chain. The MDG, reported in Figure 19, allows us to disaggregate the adjusted indicators in order to assess the composition. The access costs gap from wholesale to farm gate shows that farmers were penalized an average 40 percent of the farm-gate price due to inefficiencies in this segment of the value chain. The rural feeder road network is highly underdeveloped and is difficult to travel for many larger vehicles. This severely limits the capacity of traders in terms of economy of scale. Because of this, many small-scale traders and assemblers are required to meet the volume demanded by medium and large-scale traders. The reported margins of traders have not been adjusted since they are not considered excessive;

however, the fact that there are many, pushes up the total margins. Exchange rate misalignment from 2005 to 2012 further penalized producers by -26 percent of the farm gate price on average, with minus 58 percent as maximum taxation value in 2012.

FIGURE 19.   MARKET DEVELOPMENT GAP FOR MAIZE IN MALAWI
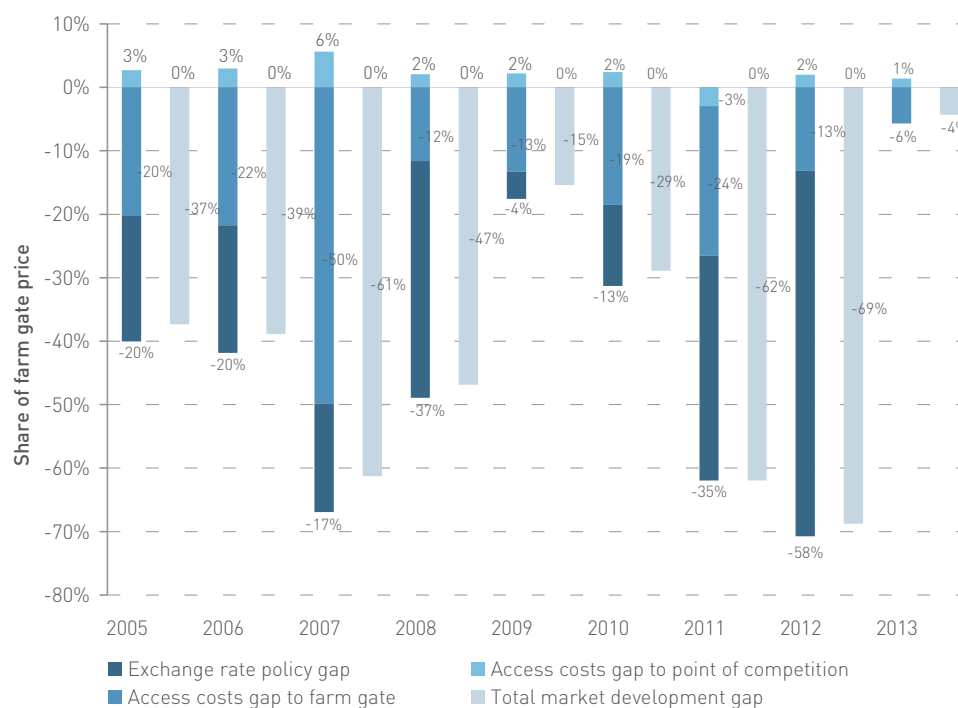
Source: Authors' calculations, 2014

The NRA, like the NRP, measures the effect of domestic market and trade policies and overall market performance, but in addition, considers budgetary transfers to maize. Public expenditure allocated to maize has been added to the price gap at farm gate. Farmers received an average 6 500 MWK per tonne of maize produced between FY 2005/06 and FY 2012/13 owing to input subsidies under the FISP for fertilizer (NPK and urea) and seed (OPV and hybrid).

The average observed NRA over the 2005–2013 period was 26 percent, in contrast to the observed NRP at an average -1 percent. The observed NRAs in 2006, 2007, and 2010 demonstrate substantial, additional (roughly 50 percent) incentives at farm gate. In 2008 and 2011–2013 period, the additional incentives received were between 16 and 23 percent: less than half the incentives of other years despite a similar level of support in absolute terms. The effects of budgetary transfers on incentives at farm gate are greater in years when price transmission is better owing to minimal domestic and international trade restrictions.

The adjusted NRA is negative in all but three years indicating that, overall, value chain inefficiencies and overvalued exchange rate out-weigh the benefits of subsidies throughout the period.

Main message

Considering the strategic importance of maize for Malawi, further analysis must be conducted based on real price data at the farm gate and wholesale level. Collection of farm price data is a key priority.

In order to promote more timely and informed decisions by policy makers, expanding the market information system in use by Malawi's ACE as well as increasing the scope of data collected under the auspices of AMIS to include wholesale and farm gate prices as well as input prices would be instrumental.

Exploring the possibilities offered by an expansion of the current Warehouse Receipt System to cover more rural communities as well as assessing the potential benefits of secure access to storage and credit should be a top priority to increase the capability of farmers to negotiate

prices and make informed decisions on the marketing of their produce. This would enable farmers to sell when prices are higher later in the season.

As the maize market in Malawi is thin, stable prices are reliant on high volumes of domestic maize production, which in turn is heavily reliant on rainfall. Instead of focusing only on input subsidies, longer-term production solutions such as small-scale irrigation schemes and further efforts to promote crop diversification on smallholder plots to drought tolerant commodities such as cassava and sweet potatoes would help to mitigate this production risk.

FIGURE 20. MAFAP OBSERVED AND ADJUSTED NOMINAL RATES OF ASSISTANCE AT FARM GATE FOR MAIZE IN MALAWI
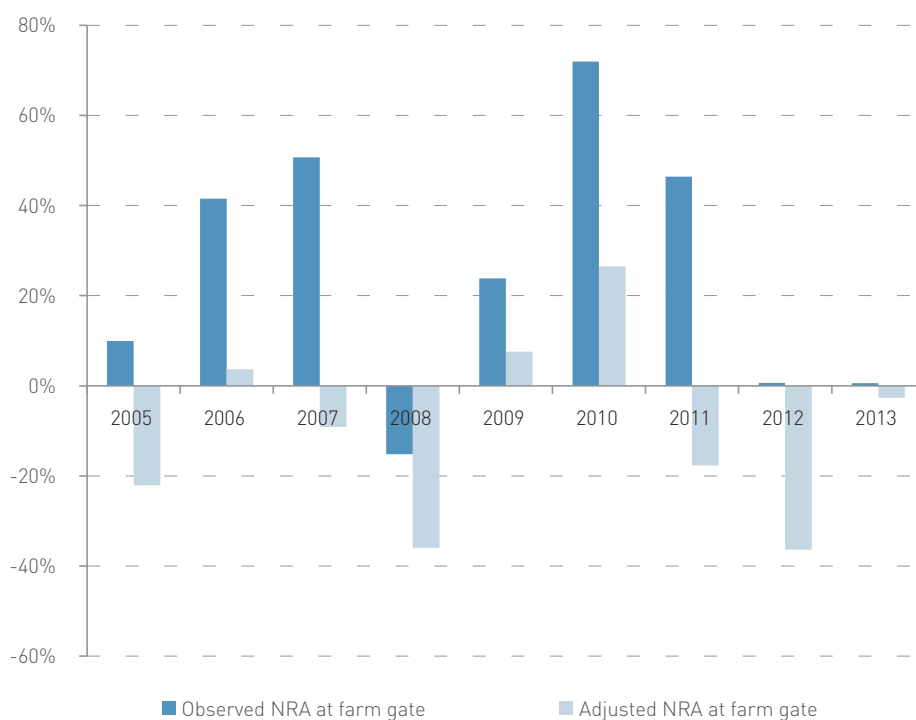
Source: Authors' calculations, 2014

Reducing domestic and international trade restrictions originating from local trade policies could increase the level of maize marketed within the country and facilitate movement of grain from surplus to deficit areas. Improving rural infrastructure such as feeder roads would also cut transport costs between the farm-gate and central markets – the most costly leg of the value chain. This would also limit the number of intermediaries necessary to collect and assemble grain from remote villages to where it could be transported by truck.

It would be important to strengthen the monitoring system of agricultural market at wholesale and farm gate level in order to assist value chain agents and the government in taking more informed decisions. A transparent price information system and a better understanding of the effects of the numerous price policies adopted on maize (trade and market restrictions and price ceilings) would help make them more effective.

Groundnuts

- Groundnut producers involved in the National Stallholder Farmers' Association of Malawi (NASFAM) value chain faced disincentives of -31 percent on average between 2005 and 2013.

- From 2005 to 2010, producers received more closely aligned prices with the reference price except in 2006 and 2008. Since the value chain under NASFAM control was integrated, the price transmission between international and domestic markets was high. As NASFAM is a producer association, producers also benefited from collective bargaining power.

- With the creation of Afrinut in 2011, a fair trade company that took over NASFAM, price disincentives increased. This could be the result of the declining bargaining power for farmers and the increasing number of intermediaries in the newly implemented market structure.

- Poor access to market, namely high transport costs and high margins enjoyed by exporters, resulted in disincentives for producers.

- Overvaluation of the exchange rate until 2012 resulted in further disincentives to production.

Groundnuts are the most important legumes produced in Malawi and are largely produced by smallholder farmers. Because of the added nutrient value to the primarily maize based Malawian diet, groundnut is considered to be valuable for improving food security and nutrition. The crop also has significant economic importance as approximately 40 percent of total production is marketed. As a result, groundnuts are both a source of food and income for smallholder households in Malawi. While policy support has been limited over the past decade, groundnut is currently targeted by the ASWAp, FISP and NES. Moreover, various donors and research institutes are supporting the groundnut value chain as well as taking actions to reduce the risk of contamination due to improper storage.

Production

Small-scale farmers produce 93 percent of groundnuts, with estate farms producing the remainder. The majority of groundnut production relies on rain-fed systems and almost all farming activities are done manually. The average area dedicated to groundnut production is 0.4 hectares per farmer (Sangole, 2010).

Production increased significantly during the period 2005–2012 and total production in 2012 almost doubled that of 2005. Increases are attributed to the expansion of the total area of production, improved techniques mitigating post–harvest losses as well as improved hybrid varieties (Simtowe, 2009). Furthermore, implementation of the FISP, targeting legumes including groundnuts since 2008/09, certainly had a positive impact on yields because of the increasing use of fertilizer.

Consumption and utilization

It is estimated that from total production: 60 percent is consumed at household level, meaning consumed by the farming families or sold in local markets in the surrounding villages; 25 percent is sold in national markets; and 15 percent is exported. The annual consumption of groundnuts (shelled equivalent) per head in Malawi in 2009 amounted to 7.4 kg per year. Groundnut is considered an important component of the Malawian diet because of its high nutritional value. Consumers however face price volatility directly linked to the seasonality of production, namely prices are low at harvest season in April-May.

Trade and marketing

While Europe used to dominate the export market in the 1970s and 1980s, of the 15 percent of groundnut production that is exported, the majority is currently exported to regional markets including South Africa, Zimbabwe, Tanzania and Kenya. High levels of aflatoxin contamination, inconsistent and unstandardised sizes of kernels have all contributed to the lack of confidence among overseas buyers and thus reduced international demand for Malawian groundnuts (Emmott, 2013; Sangole, 2010).

NASFAM was the main exporter of groundnuts until 2011, when together with the British Fair Trade company, Twin, and other commercial and development partners, the brand Afrinut was launched, a Fair Trade company that has become an important exporter of nuts and peanut butter to the UK.

FIGURE 21. **NASFAM AND TOTAL NATIONAL EXPORT IN MALAWI (TONNES)**
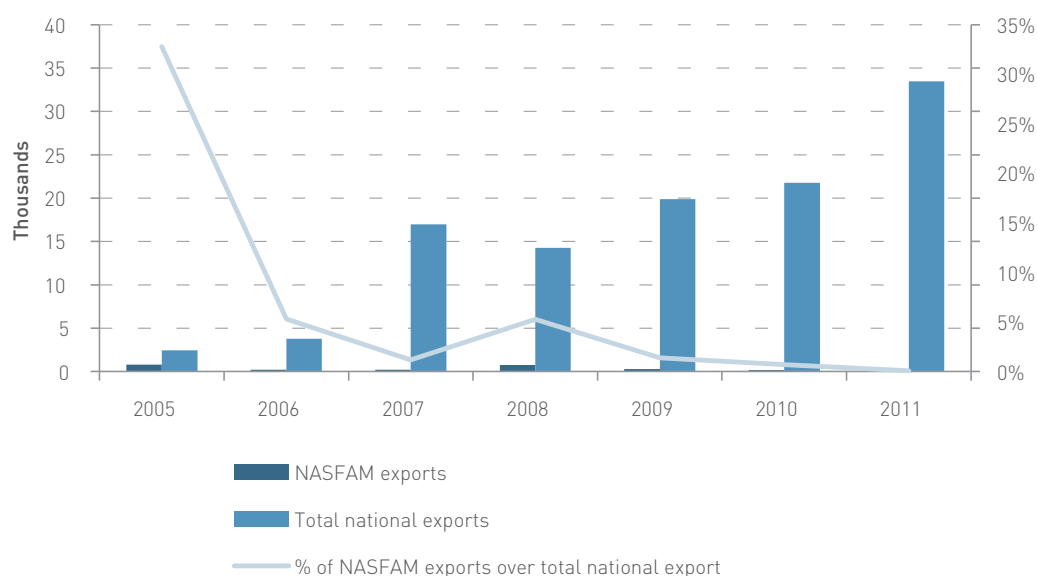
Source: NASFAM and FAOSTAT, 2014

In the period 2007–2010, processors abandoned groundnut oil production due to strong competition from consumable oil imports from neighbouring countries. However, in 2010, NASFAM installed an oil extraction plant in Lilongwe, which is intended to reinvigorate groundnut oil production in Malawi as targeted by the NES.

Value chain

Often, small-scale groundnut farmers in Malawi are either integrated as member farmers in an organized value chain such as NASFAM or are supplying traders, who in turn sell to other processing companies. NASFAM has its own processing facilities and was the main association dealing with exports of agricultural commodities until Afrinut was established, now the main exporter of groundnuts. There are around 15,000 groundnut farmers that are members of the association. Despite the stable price for processed groundnuts, prices for raw nuts at producer level are volatile from year to year. While NASFAM buys only shelled nuts, traders will buy them either shelled or unshelled. The groundnuts are then sold in trading centres to small traders or assemblers to be sold to urban traders and transported to Lilongwe or Blantyre. The main traders and processors are: Rab Processors, Export and Trading Company, Farmers World, and NASFAM.

It is estimated that of total shelled nuts, 60 percent are able to meet export quality standards, while the remaining 40 per cent were processed to secondary products such as flour, groundnut cake or peanut butter.

Indicators and analysis

The analysis focused exclusively on the NASFAM and Afrinut value chain, namely export-quality groundnuts. Indeed, data from NASFAM were used owing to the fact that producer and wholesale prices are not collected at national level. Due to this factor as well as the fact that only 40 percent of groundnut production is marketed and 15 percent is exported, the analysis does not reflect the level of price incentives and disincentives received by the majority of groundnut producers. Therefore, the collection of price information at farm gate and wholesale level is a key priority to analyse the level of incentives or disincentives received by the majority of farmers. However, the identification of price incentives for producers exporting groundnuts is of major interest to the government of Malawi, as outlined in the NES, to achieve the objective of increasing high value seed oil exports. Since the export value chain is integrated, the effects of policy and market performance were not analysed at the point of competition.

MAFAP analysis reveals that, overall, the policy and market environment created price disincentives to production throughout the period. Producers involved in the NASFAM and subsequently in the Afrinut marketing system received disincentives of -31 percent on average. Moreover, if inefficiencies along the value chain and

the exchange rate misalignment are taken into account (adjusted NRP), the results show that producers received further disincentives during the whole period.

The relatively neutral situation faced by producers, namely low price incentives and disincentives from 2005 to 2010, reflects favourable price transmission and an efficient value chain that was well integrated under NASFAM. Since NASFAM has their own storage and processing facilities, they were able to limit the number of intermediaries and control of costs incurred from farm gate to the export market. Moreover, as a producer association, producers were empowered through collective bargaining abilities. There are two years which constitute an exception to this scenario due to exceptional circumstances; in 2006, producers received incentives likely due a decrease in high quality groundnut production, and in 2008, the food price crisis occurred, creating strong distortions.

FIGURE 22.   **DOMESTIC PRICE VS. OBSERVED AND ADJUSTED REFERENCE PRICES AT FARM GATE FOR GROUNDNUTS IN MALAWI**
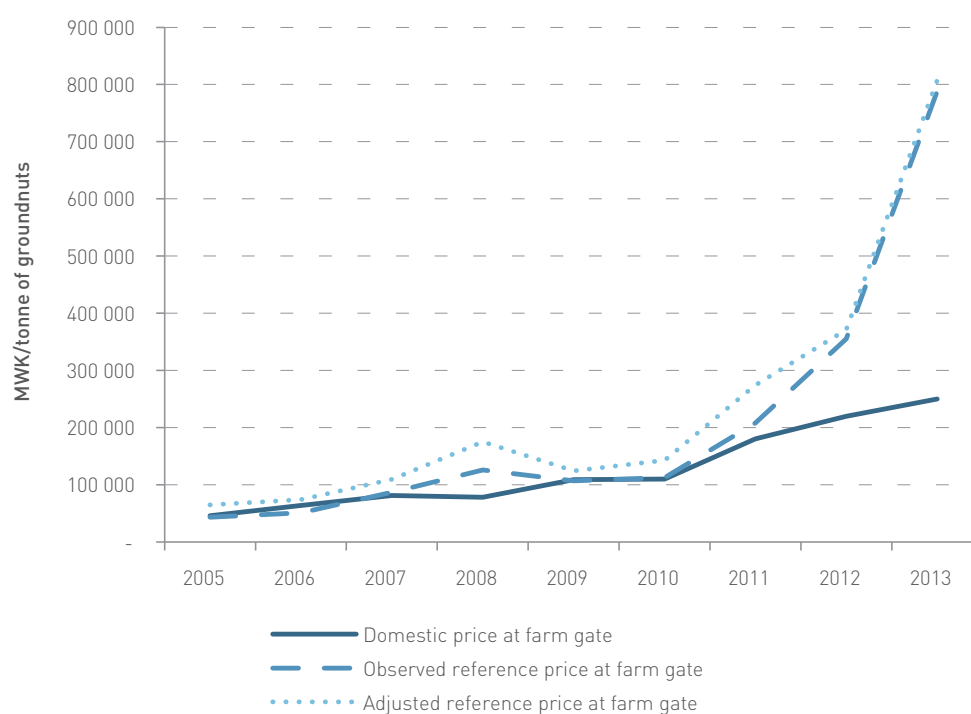
Source: Authors' calculations, 2014

Price transmission appeared to be more effective in the years previous to the creation of Afrinut in 2011, when the domestic and international markets became disconnected. From the launch of the Afrinut brand in 2011, disincentives to production progressively increased to reach -68 percent in 2013. The increasing disincentives are likely linked to the significant structural change in the groundnut export value chain and reflect a poor price transmission from regional and international to domestic markets. Indeed, while international prices increased by 57 percent on average between 2011 and 2013, domestic retail prices rose by 31 percent and producer prices only by 16 percent. The poor price transmission could be the result of an increasing number of intermediaries since the newly implemented company Afrinut involves various commercial and development actors. The market structure change could have also resulted in loss of bargaining power for producers, resulting in a less favourable price fixation compared to the previous situation.

The Adjusted NRP depicts strong disincentives throughout the period. Poor access to market, namely high transport costs and high price margins of exporters, resulted in disincentives to production.

The decomposition of the adjustments through the MDG indicator shows that the price gap is attributed to low market performance and to the exchange rate misalignment. Inefficiencies between the border and farm gate caused additional disincentives of an average -13 percent of the producer price between 2005 and 2013. On average, the exchange rate misalignment

resulted in disincentives of -17 percent of the producer price. However, the overvaluation of the exchange rate apparently did not prevent groundnut exports since national export increased overall during the period.

Policy transfers allocated to groundnuts chiefly consist in input subsidies in the framework of the FISP. However, the NRA was not estimated owing to the difficulty in identifying the precise level of expenditure allocated to groundnuts among total FISP expenditures.

FIGURE 23. **OBSERVED AND ADJUSTED NOMINAL RATES OF PROTECTION AT FARM GATE FOR GROUNDNUTS IN MALAWI**

Legend: ■ Observed NRP at farm gate ■ Adjusted NRP at farm gate
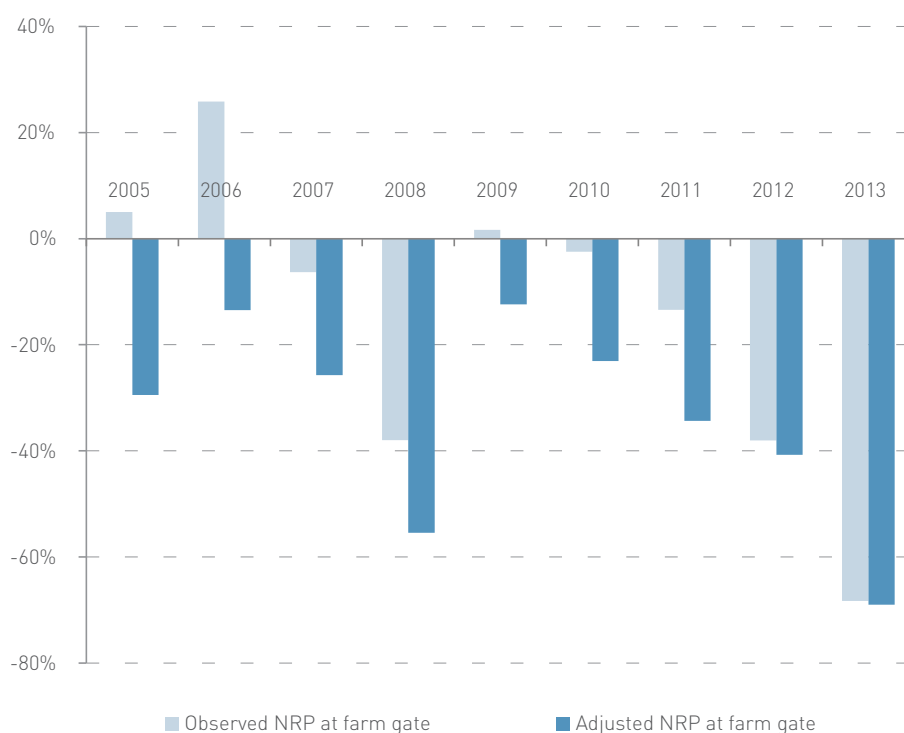
Source: Authors' calculations, 2014

Main message

The analysis focused on the high-quality groundnuts export value chain and demonstrates how producers in Malawi faced a neutral situation overall until 2010, reflecting favourable price transmission from export markets to producers. However, structural changes in the value chain after 2011, with the introduction of the niche Fair Trade company Afrinut, have negatively affected price transmission between export market and producers. Indeed, international prices increased at a higher rate than domestic prices, resulting in increasing disincentives for producers. There is a need to further analyse the marketing system and the price fixation mechanism used by Afrinut to identify the factors affecting this. Furthermore, as Afrinut is operating in a niche fair trade market and is a major exporter of groundnuts, the possibilities of expansion, replicability and sustainability of this model as well as other models should be further explored. With the involvement of a growing number of market actors, the private sector could arbitrate the price differential with external markets.

Broadening the scope of AMIS in order to systematically collect producer and wholesale prices is needed in order to identify the national average level of incentives for groundnut producers. This would contribute to the implementation of policy measures in the framework of the NES, which would precisely address the deficiencies of the groundnut value chain. Moreover, this would help to determine whether price disincentives might counteract the overall objectives of the FISP.

FIGURE 24.   COMPOSITION OF MARKET DEVELOPMENT GAP FOR GROUNDNUTS IN MALAWI
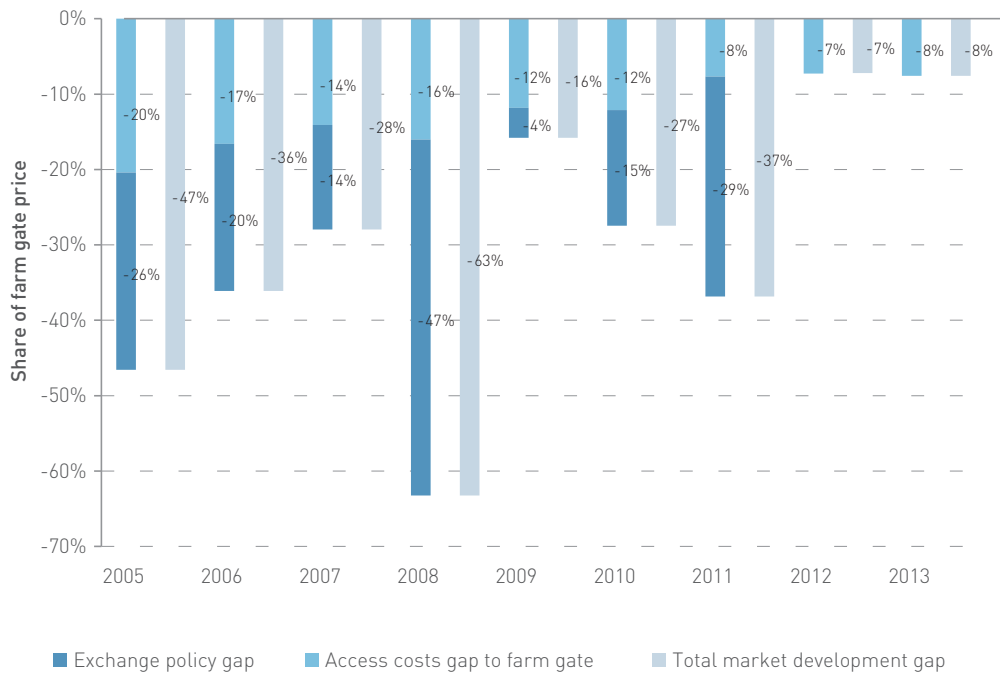
Tea

- Smallholder tea producers received price disincentives to production of -37 percent on average throughout the period, owing to the low price of green leaf fixed by a pricing model.

- The base price reflects the Cost of Production for tea producers, composed primarily of labour and fertilizer costs; however, the low cost of labour in Malawi means a low base price for green leaf.

- Price transmission between border and farm gate is impeded by the bonus system, which although works in favour of farmers in most years as it is pegged to the higher auction prices, does not reflect the direct sales market where the majority of tea is sold.

- Exchange rate misalignment resulted in additional disincentives to producers of -11 percent of the farm gate price on average.

Malawi has been growing tea on a commercial scale for over a century, dating back to the 1880s. In terms of export value, Malawi is the 13th largest tea producer in the world and the second largest producer in Africa after Kenya. Tea is one of Malawi's top five agricultural export commodities in terms of volume and ranks 3rd in terms of export value after tobacco and sugar. For smallholder tea farmers in the main production areas of Malawi, tea is an important cash crop for income and therefore food security. Tea farmers rely on estates to process their green leaf into made tea and the majority operate under an out-grower contract scheme. The tea sub-sector has limited direct policy support from the government and most investment in the sector and services such as input credit, extension services and rural development in tea producing areas are provided by estates and Fair Trade premiums. Due to the inability of estate production and land to be expanded any further, it is thought that the future of the sector depends on the growth of smallholder production.

Production

Malawi tea cultivation areas are concentrated primarily in Mulange and Thyolo districts in the southeast, with a smaller concentration in the northern Nkhatabay district (Chirwa, 2005). Tea production in Malawi is largely dominated by large commercial estates, accounting for around 93 percent of production, while the remainder is grown by about 11 500 smallholder farmers, who share 15 percent of the area under tea cultivation (Pound, 2013 and SOMO, 2008). Currently, productivity of smallholders is about half that of estates due to low bush density, sub-optimal fertilizer use, less frequent plucking, lack of irrigation and time to weed fields regularly (Pound, 2013). In order to increase productivity of out-growers, estates provide tea-specific fertilizers and seedlings on credit as well as extension support to farmers.

There are two main smallholder out-grower associations: Sukambizi Association Trust (SAT) and Eastern Out-growers Trust (EOT). The average plot size for smallholders at about 0.25 hectares and dedication of new land to tea requires time and financial investment since it takes 4 to 5 years for seedlings to grow into commercially viable bushes. Furthermore, during this time, they require pruning, fertilizer and regular watering. However, once established, tea plants can provide income for up to 100 years and there is minimal risk of total crop failure.

There are two distinct seasons for tea production: the rainy season from December to April and the dry season from May to November. The rainy season accounts for over 80 percent of production since tea bushes are growing fast and require more frequent plucking. The concentration of the majority of overall tea production in just a few months has a major impact on the productivity of the sector and the quality of the tea produced. In the dry season, higher quality teas are produced since growers and tea pluckers pay closer attention to best practices and manufacturers have excess processing capacity and can process the green leaf immediately (TRFCA, 2014).

Consumption and utilization

The majority of tea produced in Malawi is exported. Only 1 percent of the tea produced is consumed locally (Pound, 2013).

Marketing and trade

Malawi exports black tea to end markets in Europe, Asia and North America, the majority passing first through South Africa. Malawi produces medium grade teas that have a colour and brightness that is a key factor in blending, in fact, most is blended with leading British tea brands. Although tea is processed and basically a finished product when it is exported, blending and packing is the most lucrative step in the tea value chain yet most producing countries such as Malawi do not have the capital required for marketing tea for the consumer market. Over 99 percent of Malawi tea exports are processed black tea in bulk packages exceeding 3kg (ITC, 2012).

About one third of tea over the period 2005–2012 was sold through auction, while the remainder is sold directly to buyers (RBM, 2013). There are only two active tea brokers in Malawi and a limited number of buyers involved in both direct and auction sales. The auction helps to attract higher prices for good grades and high quality tea. In fact, the auction price is higher than the average FOB price of total tea exported in 5 of the 8 years under review. However, the majority of estates rely on direct sales of large volumes paid for upfront.

The green leaf (farm gate) pricing model in Malawi is rather sophisticated and involves a national pricing committee that meet every 6 months to determine the base and bonus price of green leaf. The base price is the COP for tea farmers, the major constituents of which are labour and fertilizer. The 'profit' which is the difference between the updated COPP of estate processors and realized Limbe Auction weighted average price is shared equally between farmers and processors. This profit share constitutes the bonus payment per kilo of green leaf (FTF, 2010). However, there is currently a process underway that will incorporate a price incentive for higher quality leaf provided by smallholder farmers that is reflective of the prices for different grades of tea sold at auction (TAML, 2014).

Value chain

The tea value chain in Malawi begins in the tea gardens of smallholder farmers or on the estate plantations. Most smallholder tea farmers in Malawi are members of either Sukambizi Association Trust (SAT) or Eastern Out-growers Trust (EOT) out-grower organizations, aligned with Lujeri and Eastern Produce estates, respectively. Both of these organizations have been Fairtrade certified

since 2008. The premiums are not paid directly to farmers as cash income but instead provide subsidized inputs (Pound, 2013). Smallholders are furthermore organized into blocks within the National Smallholder Tea Development Committee (NSTDC), which represents small-scale tea producers in negotiations with TAML and with the government (Pound & Phiri, 2009).[21] Through the NSTDC, tea farmers negotiate out-grower contracts with estates. The leaf is weighed at the collection point and checked that it meets the agreed specifications and then is transported to the factory for immediate processing.

Processing involves withering, drying, cutting, curing and grading. The estates process green leaf from their own fields as well as that of smallholder farmers with whom they are connected through out-grower contracts. Estates make up 93 percent of total production and the majority is sold directly to buyers in large volumes.

There are two market pathways for processed tea. About one third of made tea is sold through Limbe auction in Blantyre. Once the green leaf has been processed into made tea, processors send samples to brokers who taste, price and produce a catalogue of available tea and circulate it to potential buyers. The buyers then bid for the tea at auction in the following weeks. Once the tea has been purchased, the processor is required to deposit the specified quantities into warehouses for export. The remainder of the tea produced in Malawi is sold directly to the buyer, usually in high volumes of lower grades. The price of tea at auction is higher than tea sold directly, likely due to the higher quality and the increased access costs involved. However, estates often prefer direct sales since they receive payment upfront.

Indicators and analysis

One of the objectives of the GoM is to increase smallholder tea productivity and value through the promotion of out-grower schemes and improved

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[21] The Tea Association of Malawi Ltd. is composed of representatives from the Estate sector as well as the smallholder sector through the NSTDC. They have developed policies and mechanisms for review for the entire tea sector regarding hired labour, smallholder out-grower contracts and the terms and conditions upon which the estate sector engages with these groups.

technologies under the ASWAp and NES.[22] It is considered that there is little room for expansion of the estate sector and that any growth in the industry will emerge from the smallholder sub-sector. For these reasons, indicators were calculated to assess the price incentives and disincentives for smallholder tea producers. However, no point of competition has been considered in this analysis for three reasons; firstly, the auction is not representative of the majority of tea sold since only one third of total export volume flows through the auction floors, and secondly, the auction price is often higher than the average FOB price, indicating that there is a significant quality difference between auctioned tea and tea sold directly, and finally, factory gate prices were not available to be taken as the price at point of competition.

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[22] More specifically, the objectives and measures include; the provision of clonal tea bushes for smallholders in the equivalent of 100 ha by 2015, to increase the unit value of tea exports by promoting quality through compliance to varieties and grading and to increase total volumes of tea exported from 44,000 to 60,000 tonnes by 2015. The NES highlights the need for stakeholders to develop a competitiveness strategy that focuses on improved plucking, investing in nurseries, and composting.

FIGURE 25.   AUCTION, FOB AND FARM GATE PRICE COMPARISON FOR MADE TEA IN MALAWI
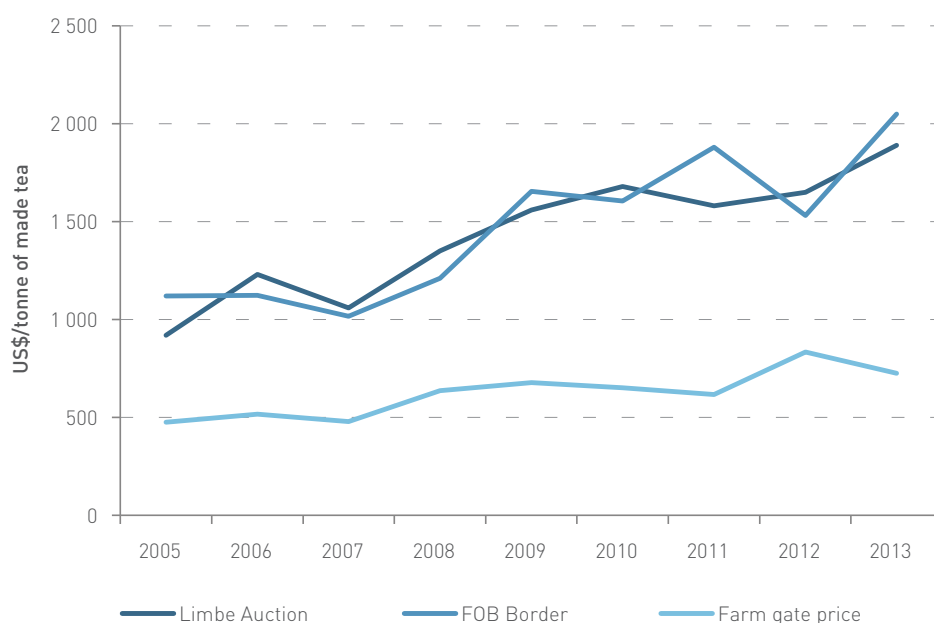
Source: RBM (2014) and NSO (2014)

On average, farmers received -37 percent price disincentives to produce in the observed domain during the period 2005–2013. Since 2007, the export price of tea has been increasing more rapidly than the price paid for green leaf to farmers, resulting in growing disincentives to production from 2007 to 2011.

Since the auction price was used as a proxy to estimate the producer price, the level of incentives and disincentives to producers follow the same trend. Indeed, prices paid to producers are determined consistently with the price negotiated at auction, from which costs between production and auction are deducted. In years in which the auction price is noticeably lower than the border price (2005, 2011 and 2013), we see the highest disincentives to producers. In years where the price of tea at auction is higher than the FOB price, coupled with high volumes of tea sold through auction (2006–2008), farmers receive lower disincentives. This is because, due to the bonus mechanism, tea producers are rewarded for high volumes and prices at auction.

Producer prices slowly increased until 2012, when after the devaluation of the kwacha, farmers received a higher base price in kwacha terms to compensate them for inflation. Moreover, they received higher bonuses since the price at Limbe Auction increased and was higher than the FOB price, allowing for a reduction of disincentives reaching -24 percent. However, in 2013, although the base price of green leaf increased, the bonuses declined due to lower volumes of high-grade tea sold at auction. Furthermore, the higher border price relative to the auction price augmented 2013 disincentives.

The risk of fluctuations in the auction market is shared between estates and farmers through the bonus system, however, this market is not representative of the majority of tea exported. Furthermore, the base price mechanism does not reflect the market dynamic of the commodity itself but rather, the cost of inputs to production such as labour and fertilizers. The cost of production is undoubtedly low since the cost of labour in Malawi, namely the minimum wage is one of the lowest in the world and far below a living wage. This system keeps the base price at an artificially low level.

In the adjusted domain, producers received -44 percent disincentives on average during the period. According to the information available, the tea value chain is relatively efficient and hence farmers received an average 21 percent less than they could have without the overvalued exchange rate, observed until 2012.

No budgetary transfer supporting tea production was identified through the public expenditure analysis. Therefore, the NRA of tea was not estimated as the results will not differ from the NRP.

FIGURE 26.   **DOMESTIC PRICE VS. OBSERVED REFERENCE PRICES AT FARM GATE FOR BLACK TEA IN MALAWI**
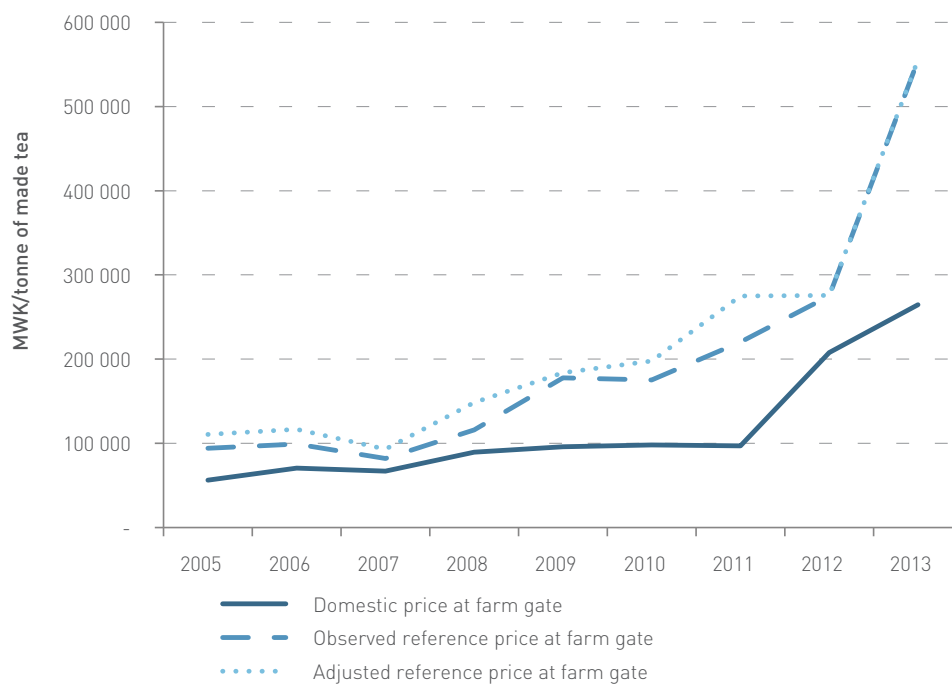
Source: Authors' calculations, 2014

Main message

Disincentives at farm gate are primarily driven by an artificially low base price of green leaf. The price of green leaf reflects the cost of production as opposed to the value of the commodity based on market forces. Since the cost of labour comprises the majority of this cost and is paid at just over the official minimum wage, by default the price is low. The bonuses paid to farmers reflect the level and trends of the price at auction, while the majority of tea is sold through direct sales where less remunerative prices prevail. Although this arrangement works in favour of producers, it limits the price transmission between export price and producer price. Measures to ensure transparency and increased competition in both direct and auction

market would benefit not only tea producers, but all domestic agents. The base price mechanism should be reconsidered in order to ensure remunerative prices for producers. Moreover, the opportunities through global initiatives such as the newly established International Tea Producer's Forum should be explored to increase the bargaining power of developing countries such Malawi in the international tea market.

The overvaluation of the currency from 2005 to 2011 represented major costs for tea producers in Malawi. Since tea is an export crop and the value chain is dominated by multinational corporations, all negotiations, sales and accounting are conducted in US dollars. Also, the price mechanism for calculating the bonuses and base price of green leaf is in US dollars. The

share of auction profit received by the estates is in US dollars and therefore not affected by the exchange rate misalignment in 2005–2011, whereas the profit received by smallholders is converted into kwacha. By sustaining the floating exchange rate, producers will fully benefit from the export prices.

To better understand the level of incentives and disincentives at point of competition and farm gate, there is a need to systematically collect data. Identifying prices and grades for various teas sold through auction and direct sale, the export price of each grade, as well as producer prices will be necessary to conduct a thorough analysis of each market pathway. By analysing each point of competition, namely, the auction and the

factory gate (in the case of direct sale), it will be possible to make meaningful comparisons of each market system as well as to disaggregate inefficiencies in the value chain.

A new three-band pricing system, reflecting the various values for grades of tea at auction is being developed by TAML and the NSTDC, which will affect the level of incentive and disincentive for producers as well as actors at the point of competition. Therefore, it will be valuable to conduct further MAFAP analysis once this pricing system is in place to determine the impact on the level of incentives at both farm gate and point of competition.

FIGURE 27.   **OBSERVED AND ADJUSTED NOMINAL RATES OF PROTECTION AT FARM GATE FOR TEA IN MALAWI**
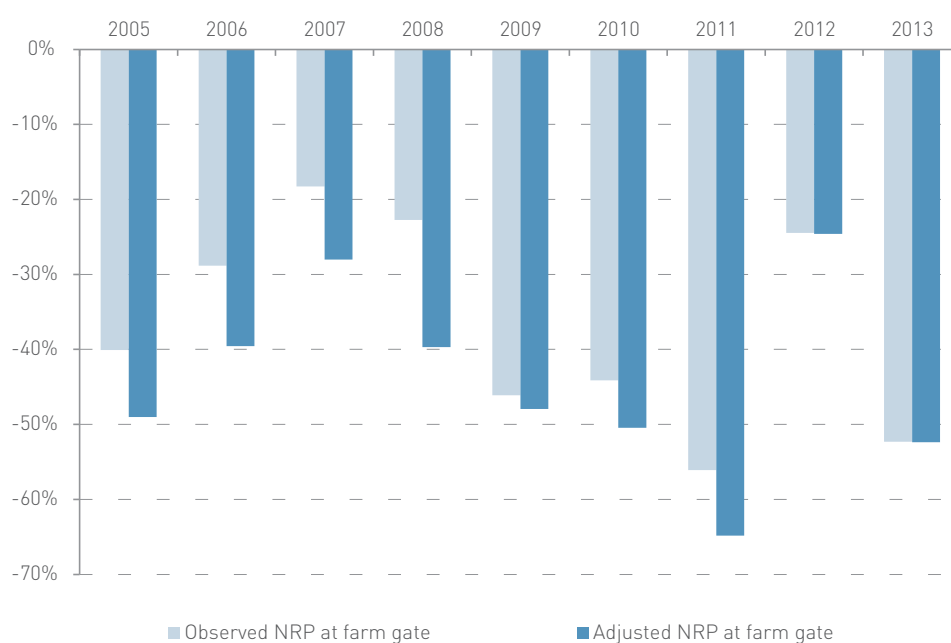
Source: Authors' calculations, 2014

Tobacco

- Trade and market policies coupled with the market performance resulted in low price incentives of 8 percent at farm gate level on average between 2005 and 2013. However, if the inefficiencies in the value chain, excessive taxation (classification levy, hessian scheme and withholding tax) and the exchange rate misalignment are considered, the results show that producers faced disincentives of -11 percent.

- The tobacco value chain is affected by limited price transmission between the export market and auction, depriving producers of the opportunities offered by the export market.

- Incentives observed in some years are a result of exceptional circumstances or short-term price measures and supply shocks pushing domestic prices upward. These are cases of low production levels, misleading production forecasts or the implementation of a floor price for producers.

- Price distortions between border and auction is attributed to uncompetitive behaviour, namely, the monopolistic situation of services and oligopsonistic position of buyers at auction as well as collusive practices;

- Overvaluation of the exchange rate until 2012 resulted in further disincentives to production.

Malawi has a long tradition of tobacco cultivation as a primary economic activity and the cash crop remains the most important in the country. Malawi exports semi-processed, unmanufactured tobacco. Tobacco accounted for 50 percent of total agricultural exports in 2011 (FAOSTAT, 2014). Burley tobacco is the main variety, with a share of over 80 percent of total production throughout the period under review. Though traditionally produced by large estates, a series of reforms in the early 1990s increased opportunities for smallholder farmers to participate in the sector. Currently, over 95 percent of tobacco is produced by small farmers. As a result, the crop is not only Malawi's main export earner but also of key importance for rural household income and food security.

Production

Total production of tobacco leaf in Malawi has steadily increased over the last two decades but witnessed a sharp decline of 59 percent between 2011 and 2012 because of a significant reduction in area cultivated (Figure 28). Since 2010, yields have remained relatively stable and changes in production volumes are mainly the result of an expansion of the total area cultivated.

Annual production volumes have been irregular in the last decade due to the international price volatility and variable climate conditions. In 2005, low production volumes were the result of unfavourable weather conditions, while from 2006 to 2009, favourable

weather conditions and high prices encouraged farmers to produce tobacco. In 2009, the government stopped targeting tobacco producers in the framework of the FISP to focus on food crops; this coupled with low prices and erratic rainfall, led to a fall in production in 2010. In 2012, producers shifted from tobacco production to more profitable crops due to low prices in the three years previous (USAID, 2012). In 2013, higher prices received in 2012 encouraged farmers to shift back to tobacco production, thus, area cultivated increased.

Consumption and utilization

Despite the fact that tobacco is Malawi's main export crop, no cigarette manufacturing is carried out in the country, meaning that all the production of unmanufactured tobacco is exported.

Marketing and trade

Since the year 2000, all tobacco produced both by estates and smallholder farmers must be marketed through the tobacco auction operated by Auction Holdings Limited (AHL). Sales are controlled and regulated by the Tobacco Control Commission (TCC), a semi-autonomous organ of the Ministry of Agriculture and Food Security. The TCC is the market regulator of the tobacco value chain.

FIGURE 28.   **TOTAL PRODUCTION, AREA AND YEILD OF TOBACCO IN MALAWI**
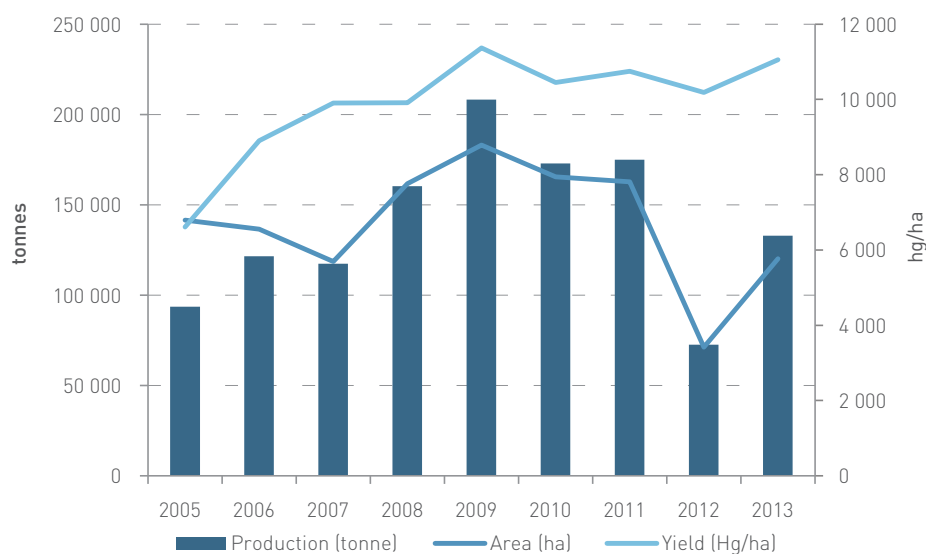
At auction floors, tobacco leaf is bought by processing and trading companies that have contract arrangements with foreign cigarette manufacturers. The prices offered by buyers at auction floors are pegged to US dollars. The auction market is oligopsonistic as two of the seven buyers accounted for around 70 percent of the burley tobacco market in 2010. This situation creates tension between leaf companies and tobacco farmers because of their ability to set prices independent of supply and demand forces, leading to allegations of collusion that causes depressed prices at the expense of producers. Low prices are also the results of oversupply and poor grading (Chirwa, 2011). The high rejection rate at the auction in the recent years reflects this quality issue.

The trend of auction and export price followed a similar pattern between 2005 and 2008. Since 2008 however, auction prices, which are directly connected to producer prices, have decreased more than those at export level. This suggests that the relatively high price that prevailed in the world market did not transmit to the domestic market. Tobacco export volumes between 2005 and 2013 have increased overall despite variations in value and volume.

Tobacco export volumes between 2005 and 2013 have generally increased but export value, volume, destination and shares varied significantly across years. During the period under review, Belgium represented the largest importer of tobacco from Malawi. Imports of tobacco from Mozambique and Zambia were also observed, consisting of dried leaf that is processed in Malawi before being re-exported.

Value chain

The tobacco growing season lasts from August to January, when tobacco leaves are harvested, dried and cured. Farmers grade the cured leaves and pack them in hessian bales of approximately 100 kg, which are then transported and marketed on the auction floors. Smallholder farmers may either operate individually or become members of farmer organizations. The two main associations are the Tobacco Association of Malawi (TAMA) and NASFAM.

Individual farmers contract directly with transporters while TAMA and NASFAM members transport their production through coordinated transport services. Farmers deliver tobacco to satellite depots in rural areas, where the tobacco is stored until the auction authorizes the depot to deliver the tobacco to auction (Otanez *et. al*, 2007). In order to get access to the auction floors, smallholders are required to register as a "club" with the Tobacco Control Commission. These clubs usually consist of 12 to 20 producers and are affiliated to one of the two main marketing channels, TAMA or NASFAM. These associations also provide credit, extension services and transportation to auction floors. More than 20 000 clubs are involved in tobacco production (Chirwa, 2011).

The auction is owned entirely by AHL, which operates as a monopolist in the tobacco marketing services. This represents a disadvantage for producers in terms of

service costs (re-grading if needed, registration, payment to producers). At the auction, bales are purchased by leaf merchants. Then, the leaves are stored and processed by the merchant in one of the tobacco factories to remove the stalks. This process results in a weight reduction of approximately 25 percent (Koester, 2004). Once processed, the tobacco is packed into 180 kg cartons for transport to South Africa or Mozambique, where tobacco is shipped in containers to Asia, Egypt, Europe and the United States for cigarette manufacturing.

Since tobacco growers (estates or smallholder clubs) directly sell at the auction, price determination takes place at the auction floors. Farmers receive payment for their produced leaf only after auction sales have been realized. All duties, levies, taxes, fees and costs are deducted from the auction price. The residual is the price received at the farm gate. In other words, the farm gate price consists of the auction price minus all costs, duties and levies.

Indicators and analysis

Tobacco is the main cash crop in Malawi and despite the recent policy effort to reduce export dependence on tobacco by promoting the production of other cash crops, tobacco still accounts for an average 68 percent of the total value of agricultural exports between 2005 and 2011. The ASWAp and NES target tobacco production and export competitiveness through the promotion of out-grower and contract farming schemes. However, volumes of production are influenced by domestic price level. Therefore, such analysis is particularly appropriate since it allows for the identification of the effect of market and policy distortions on domestic prices. However, owing to the lack of information on producer prices, the analysis of incentives to production is based on the producer price that producers are supposed to receive in the prevailing market structure. The auction price is used as a proxy to estimate the producer price. This means that the analysis only reflects the effects of price distortions existing between the auction and the export market at auction and farm gate level.

Incentives observed in some years are a result of exceptional circumstances or short-term price measures and supply shocks pushing domestic prices upward. For example, in 2005, hailstorms and prolonged dry spells caused producer prices to increase, resulting in price incentives of 20 percent. The implementation of a floor price in 2006/07 that led to a domestic price increase created price incentives of 39 percent, but due to the negative impact on the competitiveness of Malawian

tobacco, was abandoned later that year. An inaccurate crop forecast strongly influenced price levels in 2008, steering one main buyer to outbid the others with a very high price (Chirwa, 2011), benefiting producers with 21 percent incentives.

In 2009, 2010 and 2011, producers received disincentives of an average -17 percent. The fixed exchange rate regime allowed the export price to remain high relative to the previous years, but the domestic price declined owing to overproduction. In this way, the fixed exchange rate affected the competitiveness of the sector by maintaining a high export price that did not translate into benefits for producers.

In 2012, the situation was peculiar, with a major modification of the exchange rate regime[23] as well as a significant decline in production level that year. The auction price skyrocketed by 80 percent, attributable to the significant decline of production in 2012. Indeed, because of the low domestic price during the previous 3 years, producers had switched to more profitable crops and the area cultivated decreased by 56 percent. Therefore, the opposite trends of export price and auction price resulted in strong price incentives to production reaching 110 percent. In 2013, incentives remained high (observed NRP of 44 percent). Despite the fact that production recovered, auction price barely decreased maintaining incentives to producers.

The tobacco value chain is affected by limited price transmission between the export market and auction, depriving producers of the opportunities offered by the export market. Domestic prices are more influenced by national factors rather than international price dynamics. Incentives observed in some years are a result of exceptional circumstances or short-term price measures and supply shocks pushing domestic prices upward. Price distortions between border and auction are attributed to uncompetitive behaviour, namely, the monopolistic situation of services at auction and the oligopsonistic position of buyers at auction as well as collusive practices. To ensure competition, the Competition and Fair Trading Commission (CFTC) has been established with the role of investigating and prohibiting anti-competitive and unfair trading practices. However, the CFTC activities are constrained by lack of resources and of independence (Chirwa, 2011). Tobacco export was not subject to taxes but the leaf- buying companies require export licenses.

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[23]   A floating exchange rate policy was implemented in mid-2012.

FIGURE 29.   OBSERVED AND ADJUSTED NOMINAL RATE OF PROTECTION FOR TOBACCO IN MALAWI AT POINT OF
COMPETITION AND FARM GATE

Observed NRP at farm gate ◼ Adjusted NRP at farm gate ◼

Observed NRP at point of competition ◼ Adjusted NRP at point of competition ◼
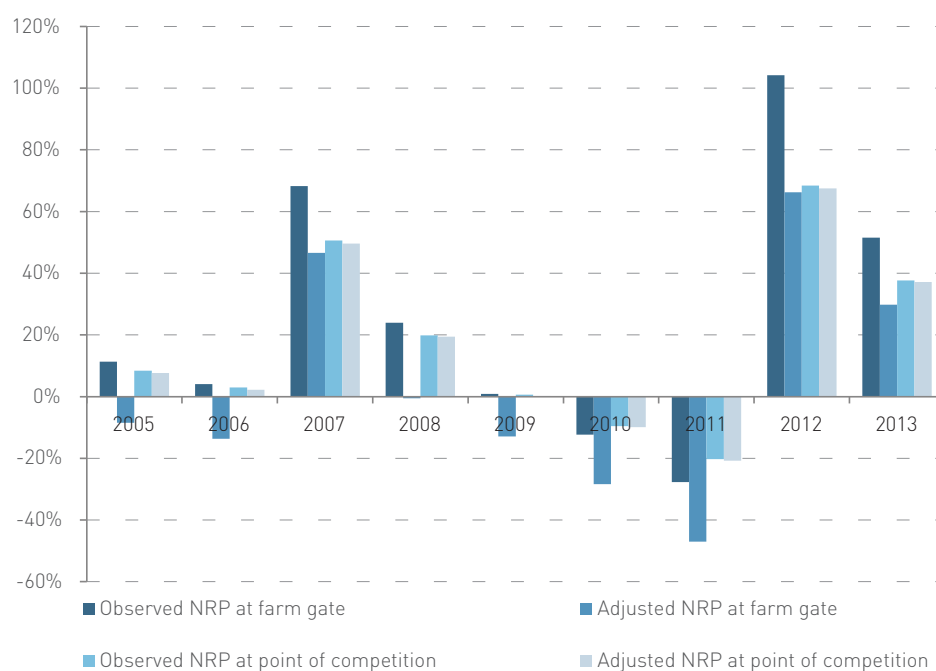
Source: Authors' calculations, 2014

The exchange rate misalignment coupled with inefficiencies in the value chain, mainly related to the efficiency in transport costs and excessive taxation (Gourichon, 2014) have further affected producers who received disincentives to production of an average -11 percent between 2005 and 2013 (Adjusted NRP).

The MDG allows the disaggregation of the total adjustment and shows the components individually. The additional disincentives captured in the analysis reflect the cost of excessive taxation in the value chain between farm gate and auction (green bars), the excessive transport costs between auction and border (red bars) and the additional cost of the exchange rate misalignment (yellow bars).

It was estimated that the classification levy and the hessian fee, which are deducted from price received by producers, could be reduced. The scheme is criticized because of its lack of transparency in terms of management (Chirwa, 2011). The withholding tax could also be removed. Before 2010, the withholding tax amounted to 7 percent but smallholder clubs were exempt. Then, the government removed the tax exemption but reduced the tax to discourage tax evasion.

If transport services and infrastructure between auction and border in Malawi were as efficient as in South Africa (comparison made with the Logistic Performance Index, 2014), price incentives would have increased by 1 percent of the producer price on average between 2005 and 2013. Between 2006 and 2013, the government spent 14 percent of the public expenditure allocated to agriculture to the development of feeder and rural roads.

During the period under the fixed exchange rate policy, the higher the exchange rate misalignment, the lower the price incentives to production. For instance, in 2012, the observed domain shows an incentive to production reaching 110 percent, while without the exchange rate misalignment of 34 percent; the level of incentives is only 70 percent. On average, the exchange rate policy in place, resulting in the overvaluation of the exchange rate, created extra disincentives of an average -12 percent of the observed farm gate price between 2005 and 2011.

FIGURE 30.   COMPOSITION OF THE MARKET DEVELOPMENT GAP FOR TOBACCO IN MALAWI
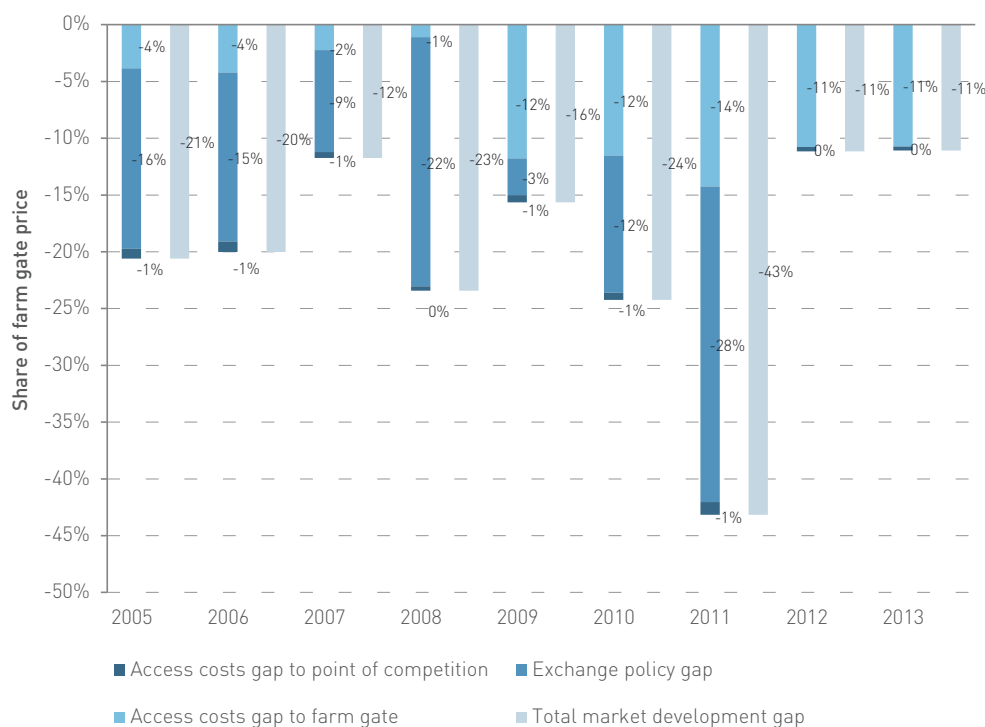
Source: Authors' calculations, 2014

The budget transfer allocated to tobacco production in the framework of the FISP from 2006 to 2009 amounted to 10 054 MWK/tonne on average per year. This direct support increased incentives in 2006 and 2009 and provided additional support to the value chain in 2007 and 2008 (see Figure 31), leading to an additional 3 percent incentives overall in the observed domain and 2 percent in the adjusted.

In 2010 and 2011, when producers faced disincentives to production, budget allocated to tobacco production did not compensate the price and market distortions. The price incentive structure remained similar during the years of the inclusion of tobacco in the FISP.

Main message

The analysis shows the effects of market and policy distortions prevailing between the export market and the auction. The indicators highlight that the policy and market environment creates a mixed-situation for tobacco producers. While producers benefited from exceptional circumstances that resulted in price incentives in some years; they also faced disincentives to production in other years.

Distorted price transmission between border and auction can be attributed to the lack of competition across the value chain owing to the monopsony of services provided at auction floor and the oligopsony situation

of the market. Ensuring effective functioning of the Competition and Fair Trading Commission by securing its independence and enhancing its capacities would mitigate collusive practices.

Developing the market information system in order to reflect domestic and international price trends as well as international supply and demand and disseminate the information to producers would reduce price uncertainty for producers and allow them to plan their production accordingly and avoid misleading production forecasts. Moreover, increasing service supplies for producers, namely transport and grading would result in higher farm gate prices.

It is recommended to continue the promotion of the contract farming system as planned in the ASWAp as a way to improve quality, facilitate marketing activities, provide remunerative prices to producers and plan the level of production according to demand.

Direct policy support to tobacco production in the framework of the FISP had a limited effect on the structure of price incentives compared to the policy and market distortions.

Maintaining exchange rate policies that avert exchange rate misalignment would ensure higher incentives to farmers.

FIGURE 31.   OBSERVED AND ADJUSTED NOMINAL RATE OF ASSISTANCE FOR TOBACCO IN MALAWI
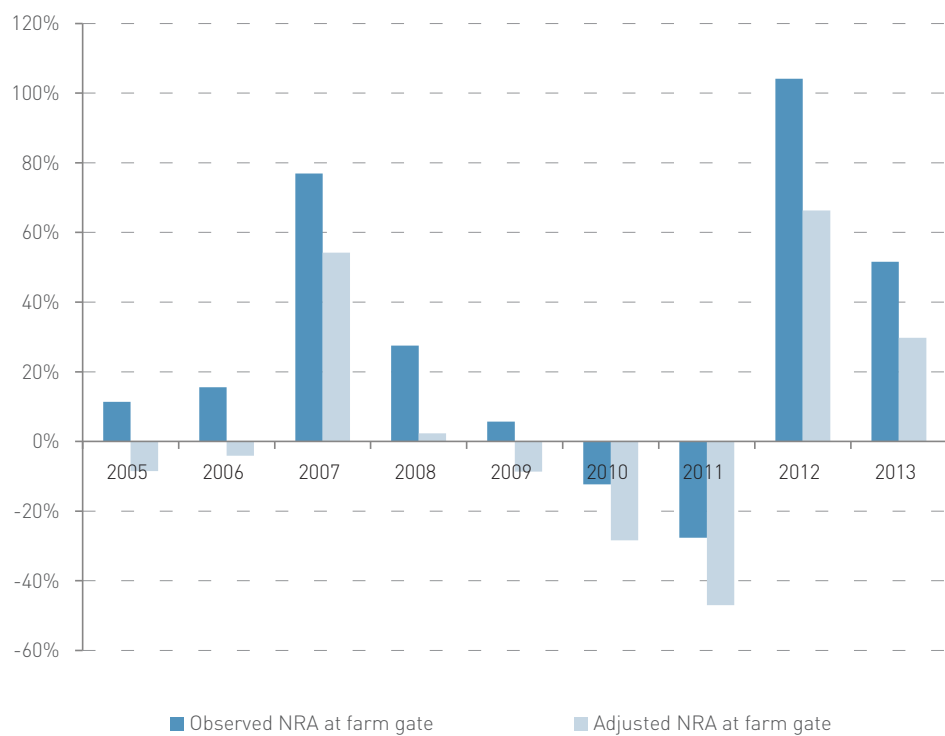
Source: Authors' calculations, 2014

Sugar

- Smallholder sugar cane producers received disincentives overall throughout the period of an average -23 percent, driven primarily by their inability to negotiate prices with the only buyer of sugar cane in Malawi that charges a milling fee of 40 percent to out-growers through their contract agreements and deducted from farmers' gross revenue.

- Variations in levels of disincentives are due to international price changes and shifting volumes sold to variously priced markets. Domestic prices at farm gate remain steady and are assumed to be supported by a more stable monopolistic domestic market.

- Incentives in 2012 were due to high volumes of low priced sugar sold to Portugal for refining, bringing the benchmark and thus the reference price at farm gate well below the domestic price, which continued to slowly increase.

Sugar is the second largest foreign exchange earner after tobacco and is a prioritized export for diversification and value addition in the NES. Furthermore, policy support to sugar through the National Adaptation Strategy (NAS)[24] aims to enhance the competitiveness of the sugar and cane sector by increasing factory capacity and sugarcane production through efficiency improvements in both field and factory operations. There is only one company buying, selling and processing sugar and sugarcane in Malawi to which producers pay a high milling fee. The majority of sugar produced in Malawi is sold on the domestic market and the remaining approximately 40 percent is exported as raw sugar for refining or direct consumption. The international sugar market is highly distorted by trade and production policies.

Production

Malawi has ideal agro-climatic conditions for growing sugar cane; namely, warm rainy summers, coupled with cold, dry and sunny winters, resulting in generally high annual cane yields and sucrose content. Other factors that contribute to Malawi's sugar cane production are good soils and access to secure water sources for irrigation. The majority (84 percent) of cane is grown by estates and the remainder is outsourced from primarily (90 percent) smallholder farmers (Illovo, 2014). The land of cane growers is often not owned by them but by a government trust that ensures the land is allocated to sugar cane.

Sugarcane cultivation, harvest and processing are closely linked due to the fact that sugarcane must be processed immediately after harvest in order to retain the high levels of sucrose, the main product of sugarcane, which is extracted and purified by mill factories. Sugarcane harvesting lasts several months and involves sophisticated logistical planning in order to ensure a continual flow of harvested cane and consistent rate of processing (Stray *et al*, 2012).

Sugar cane yield per hectare and sucrose yield per tonne of cane remained relatively stable over the 2005–2013 period. Area harvested however has increased by about 5 000 hectares since 2005 and seems to be the main determinant of production volumes. Both area and production increased from 2005 to 2008 before falling from 2009 to 2011. This temporary reduction in area harvested is likely due to ratoon improvements and irrigation installations under the NAS. This might also explain the dramatic increase in both area harvested and production volumes in 2012.

Consumption and utilization

The majority of sugar produced in Malawi is sold on the domestic market, primarily for direct consumption but also for industrial uses. Illovo sugar has a monopoly of the domestic sugar market in Malawi. However, the company claims that prices are set to ensure profitability but are lower than neighbouring countries' sugar prices in dollar terms. Under a new (2012) UNICEF-sponsored government legislation aimed at reducing infant and maternal mortality, all sugar sold for direct consumption on the domestic market is enriched with vitamin A.

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[24] The Government of Malawi's adaptation strategy to the 2006 EU Sugar Reform.

FIGURE 32. **YIELD, PRODUCTION AND AREA HARVESTED OF SUGARCANE IN MALAWI**
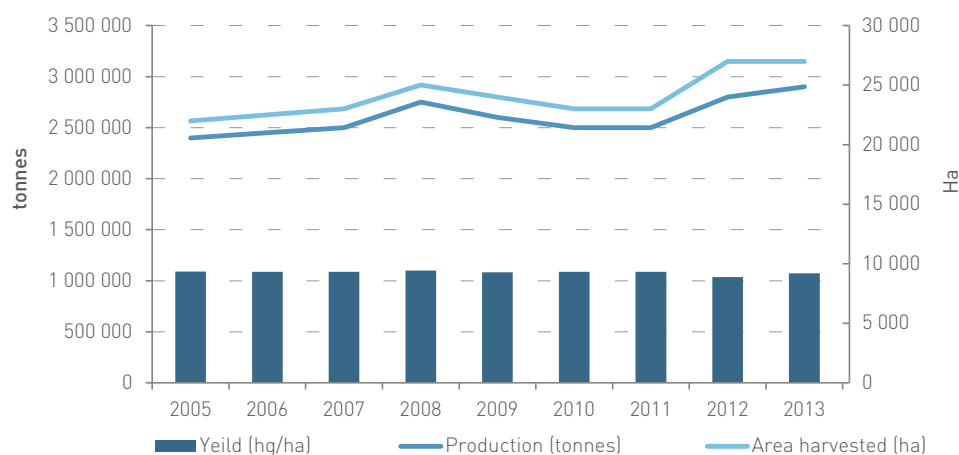
Trade and marketing

Over the 2005/06–2013/14 period (year ending March 31st), an average 62.5 percent of sugar was sold on the domestic market while the remaining 37.5 was exported. Approximately 20 percent of exported sugar has been sold into preferentially priced markets in the EU and United States, with the remainder sold primarily to regional markets (Figure34). However, it was estimated by UNCTAD in 2005 that over 20 percent of domestic sugar was being sold in Mozambique, Tanzania and Zambia through informal cross-border trade (EC, 2006).

The EU has been decreasing preferential prices paid to African, Caribbean and Pacific (ACP) countries (36 percent over 4 years) under the Sugar Reform in a process of integration with global market prices (EC, 2006). On the other hand, United States and world prices increased until 2011, likely driven by: the increasing cost of production in Brazil, the worlds' leading exporter (48 percent of global exports 2009/10); the strengthening of the real against the US dollar from 2003 to 2010; as well as a global fall in production by 12 percent in the 2008/09 marketing year (McConnel, 2010).

FIGURE 33. **PRICE TRENDS OF SUGAR FOR MALAWI FOB, WORLD (BRAZIL), EU AND UNITED STATES**

EU negotiated import price for raw unpacked sugar from ACP countries

United States: nearby futures contract CIF (Bloomberg)

World: ISA daily price (raw FOB) at greater Caribbean Ports

Malawi FOB (NSO)
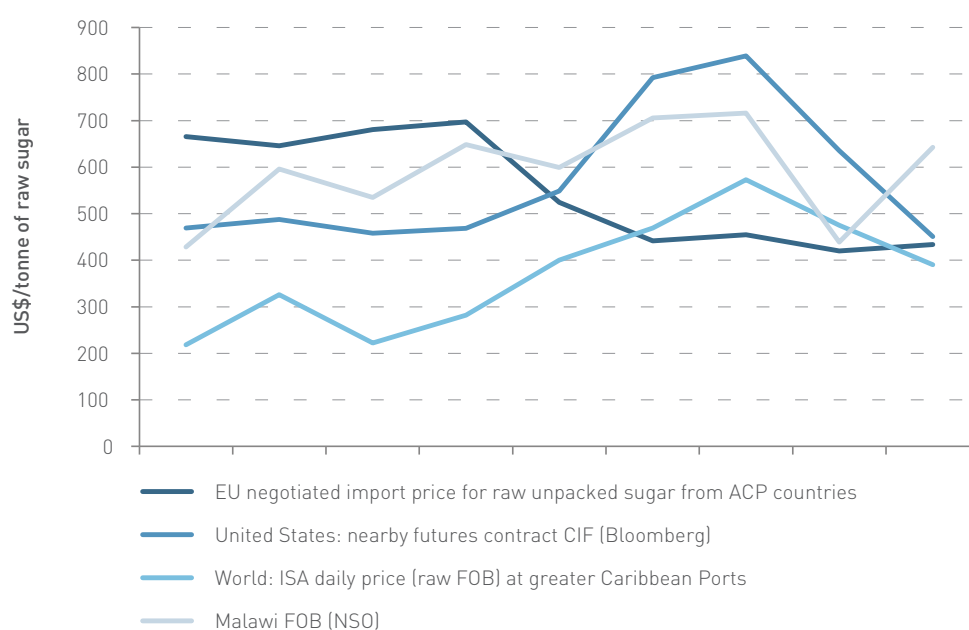
Malawi average FOB unit prices hover more steadily but are not immune to the international price variations and are largely determined by variations in volume to differently priced markets. In 2012 for example, the average export price plummeted since almost 90 percent of exports from the top five partners were destined for Portugal at under US$300 per tonne (Figure 34). In 2013 however, despite low international prices, a higher share was sold to specialty markets in the UK, Belgium, Italy, and the US at over US$1 000 per tonne, increasing the export price significantly (UNComtrade, 2014). Export prices to the UK and Belgium are higher because, unlike the raw sugar sold to Portugal, this sugar is not for refining but is a high quality raw sugar for direct consumption (CBI, 2009).

In order to mitigate the expected 56 percent decline in export revenue for LDCs such as Malawi, transitional programmes, monetary compensation and duty-free access to the EU sugar market under the EBA agreement are being formally granted by the EC (Nyberg, 2007).

Value chain

Sugar cane is cultivated by large estates, medium and small farms and is produced in close vicinity of sugar mills owing to the short time required between harvesting and processing. Illovo is the only sugar processing company in Malawi, with estates and factories in Nchalo in the South, and Dwangwa in the central region. Illovo has supply contracts with about 1 888 out-growers: members of associations such as Dwangwa Cane Growers Trust (DCGT) in the Nkotakota district and Shire Valley Cane Growers Trust (SVCGT) in the Southern district. From the out-grower farms, cane is loaded onto haulers and on the way to the factory, the tonnage is determined by a weighbridge. In order to determine the sucrose content, samples are sent to the laboratory. Payments to farmers are based on the expected recoverable sucrose (ERS%) per tonne of cane delivered (Pound, 2013). However, Illovo charges farmers a 40 percent milling fee on the divisible proceeds from sugar sales as well as 15 percent withholding fee in case the market changes (Corporate Citizenship, 2014 and CISANET, 2013).

Several products are derived from crushed sugar cane: raw and refined sugar, molasses, and bagasse. Molasses is sold as a raw fermentation material in the manufacture of ethanol to the fuel alcohol distilleries in Malawi: Ethanol Company Limited and Presscane Limited. Both raw and refined sugar are sold on the domestic market or exported to markets in the EU, Africa Region and the Unites States. Bagasse is used by Illovo to partially power the factories.

FIGURE 34. SUGAR TRADE VOLUMES BY TOP 5 DESTINATION COUNTRIES AND SHARE OF EXPORTS OF MALAWI
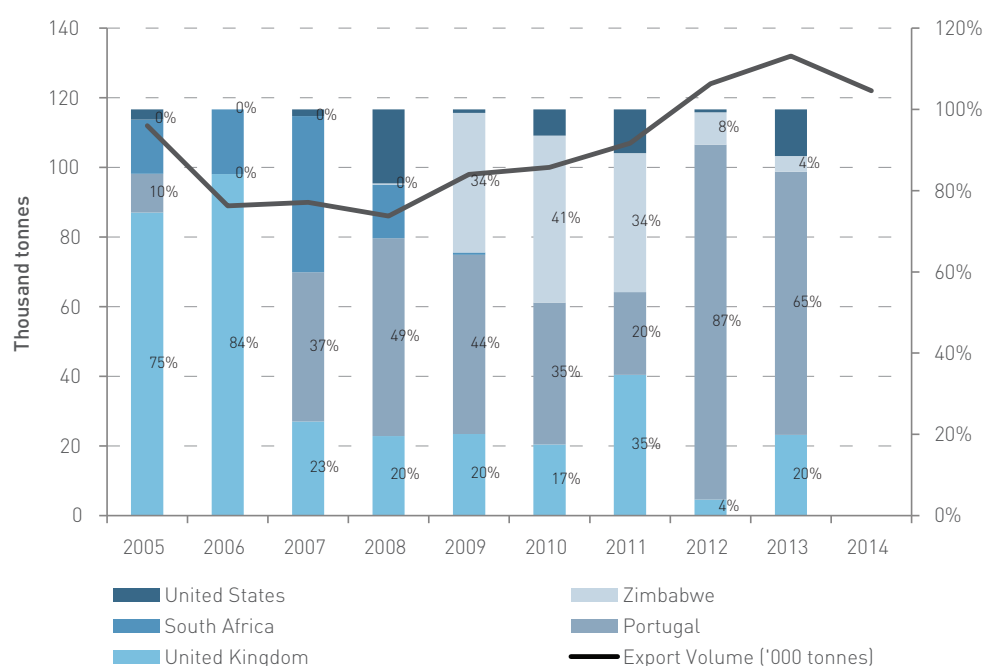
Source: UNComtrade and Ministry of Trade (2014) and Illovo (2008–2014)

Indicators and analysis

Under the NES, sugar cane products fall into the prioritized export-oriented cluster for diversification and value addition. The aim is for sugarcane products to account for 15 percent of exports by 2027 (NES, 2012). The GoM in the NAS to the 2006 EU Sugar Reform has identified support for sugarcane out-growers as the most strategic area for support as well as crucial for poverty alleviation in the short, medium and long term, which is in line with the overall objectives outlined in the MGDS and ASWAp. The analysis of incentives to sugar cane producers is critical to understand how the policy and market has affected the sugar value chain in the past and how to ensure sustainable incentives in the future.

This analysis considers only incentives at farm gate since wholesale prices for sugar were not available; furthermore, due to the monopolistic situation in the domestic sugar market, it could not be considered a 'point of competition'.

Overall, sugar producers received severe disincentives over the 2005–2013 period except in 2012, when international prices fell sharply while at the same time producers were supported by the domestic market, creating high incentives. Over the 2005–2013 period,

the domestic price at farm gate steadily escalated despite the peaks and dips of the reference price at farm gate (Figure 33). This is due to roughly 60 percent of sugar being sold on the domestic market over the period considered, where there is more stability. Fluctuations in the benchmark price are due to the variation in main export partners and to the different prices offered by each partner as shown in Figure 35.

The observed NRP at Farm Gate is negative overall at an average -23 percent, driven by the low price paid to producers (Figure 36). In 2012, sugar cane growers received high incentives due to steady and increasing domestic prices and a sharp decline of prices on the international market and hence, the border price.

No major inefficiencies were observed owing to the relatively efficient and highly integrated domestic value chain for sugar, given the control that Illovo exerts on all stages of the supply chain. Therefore, the MDG reveals mainly the strong negative impacts of the exchange rate policy resulting in exchange rate misalignment that absorbed an average -32 percent of the farm gate price between 2005 and 2011.[25]

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[25] In MAFAP Phase II, the Exchange Rate Policy Gap will no longer be included in the MDG.

FIGURE 35. **DOMESTIC PRICE VS. OBSERVED AND ADJUSTED REFERENCE PRICES AT FARM GATE FOR SUGAR IN MALAWI**
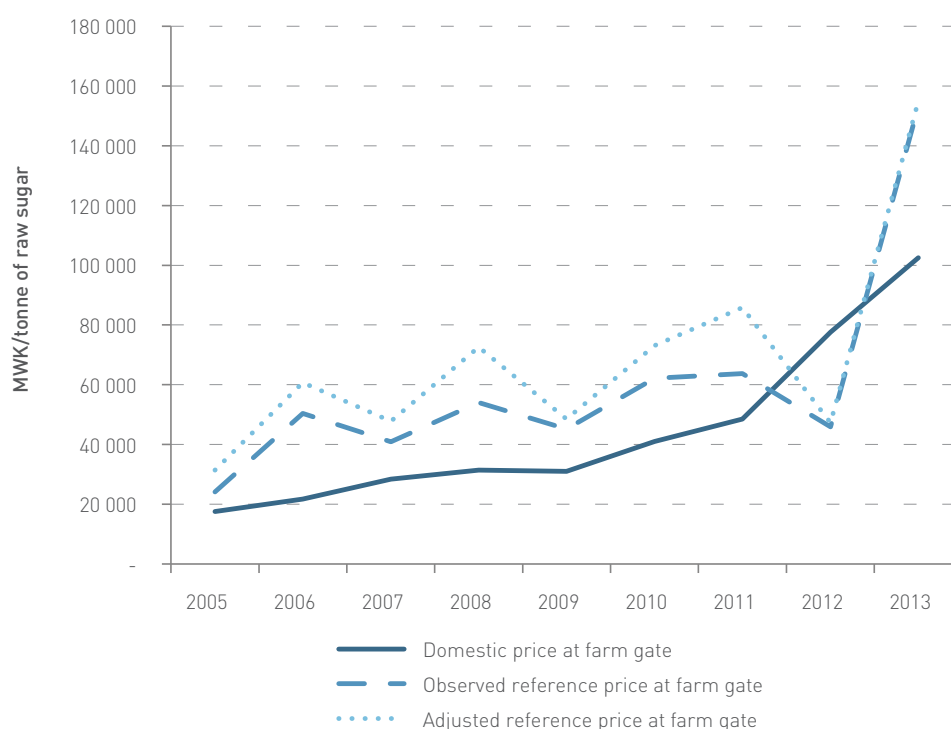
Source: Author's own calculations, 2014

The Market Development Gap (MDG) demonstrates a relatively efficient domestic value chain for sugar but strong negative impacts of the exchange rate policy that absorbed an average -32 percent of the farm gate price between 2005 and 2011.

Public expenditures targeted sugar from 2007 to 2009 through the Smallholder out-grower sugar cane project, which received contributions from the European Union (EU) and the African Development Bank (ADB). The main components of the programme were the provision of variable inputs, on and off-farm irrigation and training. Sugar producers received MWK 846, MWK 2 015 and MWK 2 911 per tonne of sugar in 2007, 2008 and 2009, respectively. This budgetary support has been added to the price gap at farm gate and then expressed in relative terms as the NRA (Figure 38). Despite a slight decrease in disincentives in 2007–2009, it is clear that this support has had a very minor impact on producer price incentives, increasing incentives in both domains by 1 percent.

FIGURE 36. OBSERVED AND ADJUSTED NOMINAL RATE OF PROTECTION AT FARM GATE FOR SUGAR IN MALAWI

■ Observed NRP at farm gate   ■ Adjusted NRP at farm gate
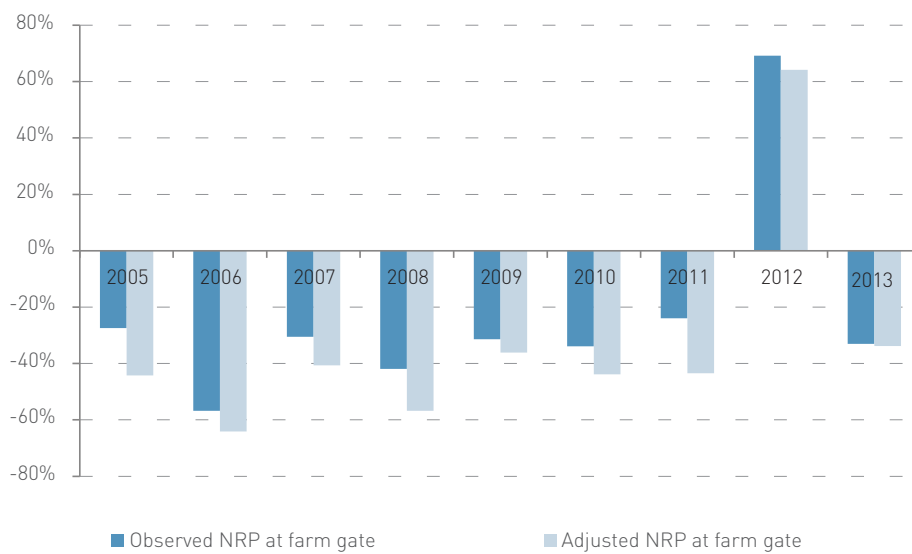
Source: Authors' calculations, 2014

FIGURE 37. MARKET DEVELOPMENT GAP FOR SUGAR IN MALAWI

■ Exchange rate policy gap   ■ Access costs gap to farm gate
■ Access costs gap to point of competition   ■ Total market development gap
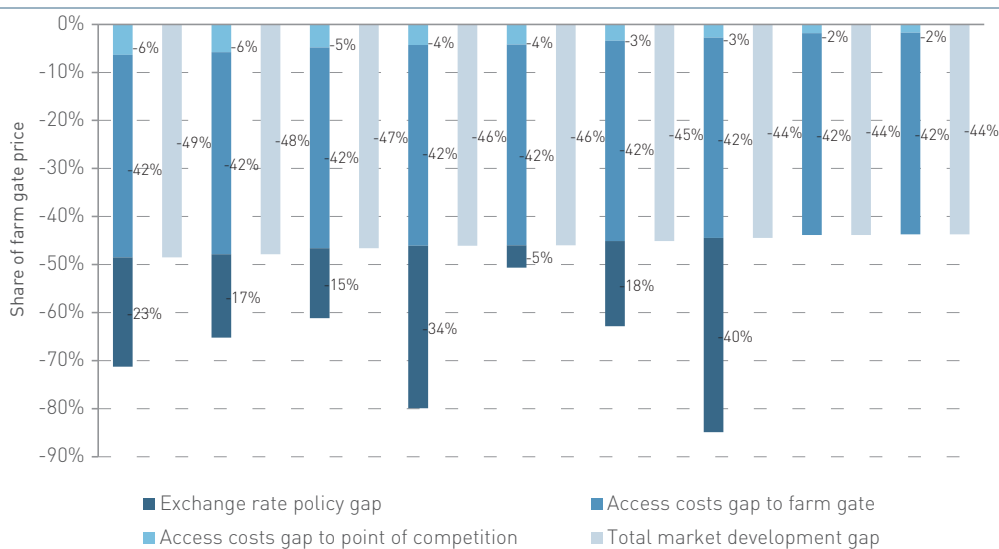
Source: Authors' calculations, 2014

Main message

Price transmission between farm gate and border is limited by the fact that, on average, over 60 percent of sugar is sold on the domestic market. Sugar cane producers receive relatively steady disincentives throughout the period except in 2012, when the benchmark price falls sharply but producer prices remain supported by the domestic market. Farmers are not receiving the price they should due to lack of bargaining power coming from the monopsony for sugar cane purchase and weak land tenure rights. Sugar cane farmers in Malawi are price takers since there is only one buyer and furthermore they are not able to change crops based on the market.

Thus, producers have no choice but to pay the high milling fee charged by Illovo, a subsidiary of the multinational Associated British Foods, at 40 percent of divisible proceeds from sugar and molasses sales

(Corporate Citizenship farmers, Ilovo 2014). By charging the milling fee to the farmers Illovo transfers part of the processing costs to the farmers and such a high fee implies that the cost of production, processing, and marketing for Illovo Malawi is very high, despite their claim to be one of the top five most efficient processors in Africa. In fact, production costs are very low according to 2007 EPA negotiations (Agritrade, 2010). However, according to Illovo, the contractual arrangements that stipulate these milling fee terms is expected to change this year (2014). Ensuring that the cane supply agreements between cane growers and Illovo are fair and remunerative should be taken on by the government as a key responsibility, given the lack of competition and monopsonistic environment. Furthermore, all measures as listed in the NAS should be a priority to ensure a smooth process of adaptation to the end of the EU preferential regime for sugar from developing countries like Malawi.

FIGURE 38.   **OBSERVED AND ADJUSTED NOMINAL RATE OF ASSISTANCE AT FARM GATE FOR SUGAR IN MALAWI**
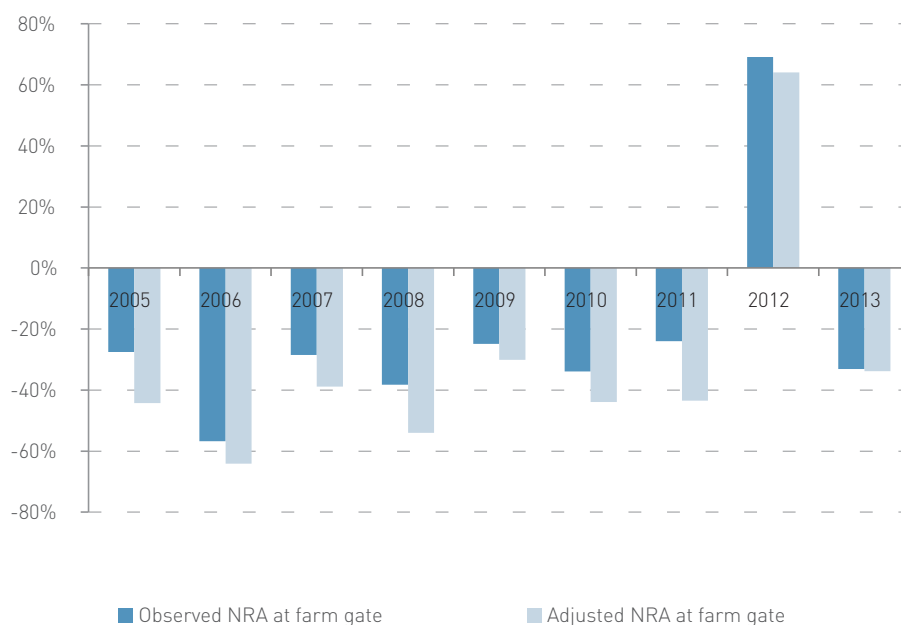
Source: Authors' calculations, 2014

Cotton

- Cotton producers received price disincentives of -6 percent on average between 2005 and 2013.

- The atomistic market and the strengthening of regulations allow for price transmission between domestic and international markets.

- The enforcement of the minimum price was weak and the price fixed did not systematically reflect the price level in the international market.

- Overvaluation of the exchange rate until 2012 resulted in further disincentives to production.

Malawi produces and exports grade A cotton lint and is currently aiming to increase the production of cotton seed oil and support the textile industry in order to add value to exports and create employment. Cotton production has been targeted intermittently by several programmes including the FISP in 2012.

Production

Cotton is the fourth largest agricultural foreign exchange earner in Malawi after tobacco, sugar and tea. However, production accounted for only about 2 percent of Africa's total volume of production between 2005 and 2013

(FAOSTAT, 2013). Cotton is produced under rain-fed crop cultivation systems and is largely cultivated by an estimated 120 000 smallholder farmers, with an average landholding ranging from 0.2 to 1.6 hectares (Hardwick, 2010). Cotton in Malawi is handpicked, ensuring high quality and corresponds to the grade A of the Cotton Outlook Index. Most of the production is cultivated in the Southern regions of Malawi, namely the Lower Shire Valley and Balaka as well as the Lakeshore area, accounting for 50, 30 and 20 percent of production, respectively. In these areas, cotton is the most viable crop as the climate is not appropriate for maize production.

FIGURE 39. **PRODUCTION, AREA CULTIVATED AND YIELDS OF COTTON IN MALAWI**
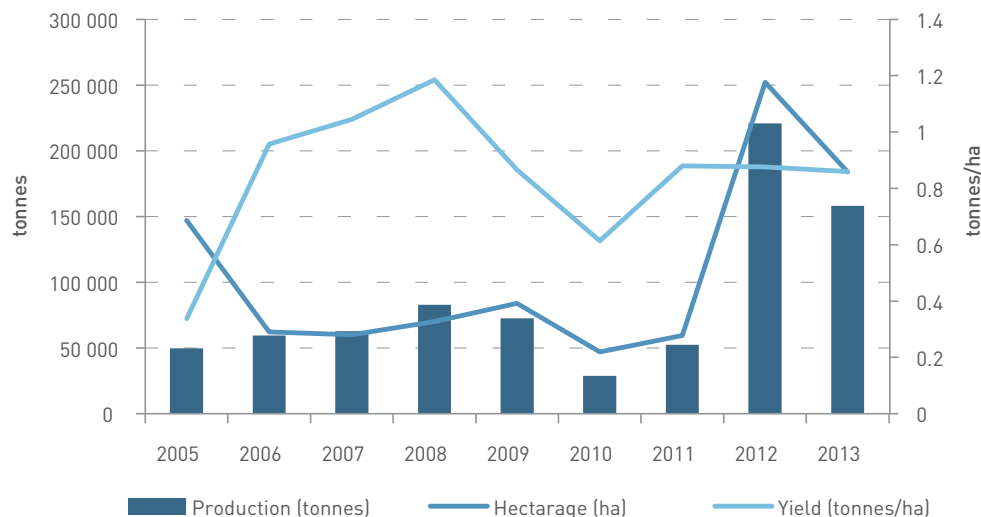
Source: AMIS-MoAFS, 2014

Production steadily increased from 2005 to 2008 and dropped significantly in 2010 due to both a reduction of area cultivated and a decline in yields. The reduction of area cultivated is explained by the low prices offered to producers during the preceding season, discouraging producers to plant cotton in 2010. The use of untreated cotton seeds in many parts of the country also affected yields (TradeMark, 2014). In 2012, production more than

quadrupled from 52 456 MT to 220 726 tonnes, which may be attributable to the delivery of input subsidies in the non-traditional growing areas (Karonga, Mulanje and Nkhata Bay) in the framework of the FISP (Kenamu, 2014). Cotton producers received subsidized inputs in the 2007/08 cropping season but then were exempt in 2009/10 and 2010/11, only to be targeted once again in 2011/12.

Consumption and utilization

For cotton, domestic utilization refers to the amount of cotton lint used by the domestic textile industry and to the amount of seed processed into oils and animal feed. The separation of cottonseed from lint is termed 'ginning'; Malawi's average ginning out-turn rate in 2010 was around 40 percent (Manoto, 2010). Cotton lint may be spun into fabric or exported to regional and international markets. In 2009, only one company, Mapeto, was involved in the manufacturing of textiles and the company operated below capacity (NWGTP, 2009).

However, after a decline of textile production due to a lack of equipment and appropriate technology, the textile sector has risen again since 2011, as shown by the export trend of cotton carded or combed. This increase can be explained by the implementation of the Cotton Strengthening Project from 2010 which, among other objectives, aims at supporting the cotton industry by increasing the value added of cotton production (MAFAP-PE database, 2014).

From the total revenue made by ginners, 94 percent came from the lint production and the remaining 6

percent from the sale of seed,[26] 10 percent of which is retained by ginners to supply farmers and the rest is sold to local oil seed crushers. The production of cotton oil is expected to increase since the product is targeted by the NES. As for now, there are around eight crushing companies in Malawi (Manoto, 2010).

Trade and marketing

The majority of cotton lint is exported, representing an average 2 percent of the total value of agricultural exports between 2005 and 2013 (FAOSTAT, 2014). Trends in export volume are consistent with trends in production volume. Due to high production volumes, exports peaked in 2012, reaching a total value of US$ 40 million.

The main country of destination is South Africa, accounting for 30 percent of the value of cotton exports between 2005 and 2013 (UNCOMTRADE, 2014). However, Asian markets such as China, Indonesia and Thailand are becoming more important destinations for Malawian lint.

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[26] MAFAP estimation based on the total value of seed and lint produced as reported by Hardwick, 2010

FIGURE 40. **VALUE OF COTTON LINT EXPORTS NOT CARDED OR COMBED IN MALAWI AND INTERNATIONAL PRICE OF COTTON FROM THE COTLOOK A INDEX**
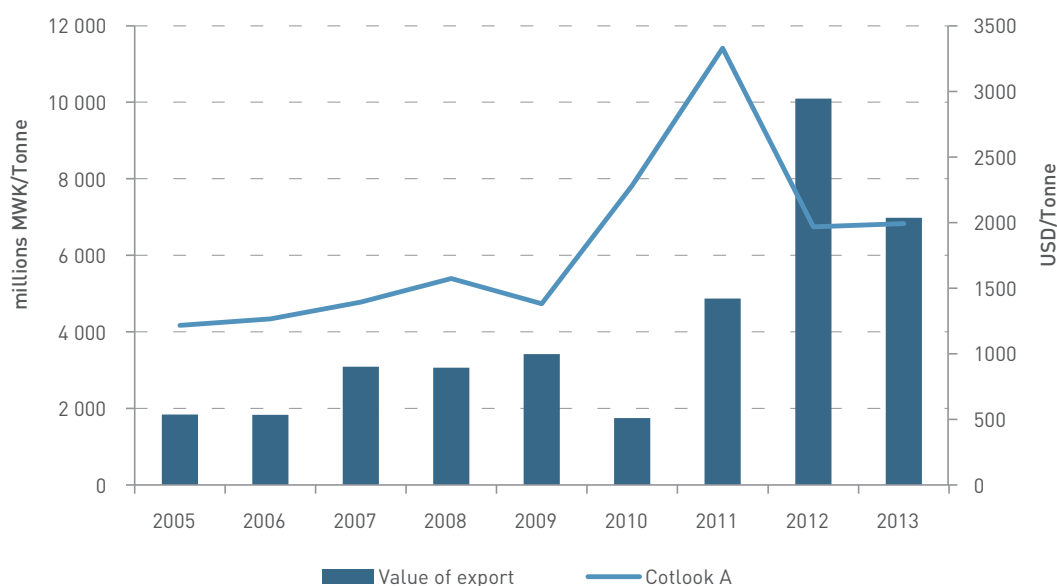
Source: NSO, 2013

Value chain

The market structure of cotton in Malawi is described as atomistic (Peltzer, 2013): there are 10 ginners situated in the area of production or close to Blantyre which are competing and the prices have a limited ability to set buying and selling price due to the producer price fixation mechanism and the price dynamics in the international market.

The growing season is between June and September. After harvest, raw cotton is packed in 50kg woolpacks and is marketed through farmer organizations, traders or is directly sold to ginners through buying points in the main production areas. In the latter scenario, the company contracts smallholder farmers and provides them with inputs, deducting the input price from crop sales. Farmer organizations, such as the Balaka Smallholder Farmers Organization (BASFA) in the Balaka District, also intervene in the inputs side and marketing activities by providing extension services, transport and marketing services as well as quality control on behalf of their members.

At the ginneries, located in the most important growing districts or close to Blantyre, seed is separated from cotton lint. These companies formed the Cotton Development Association in 2003/04 and introduced a farm input subsidy programme; however, the programme lasted only for 2 seasons (MoAFS, 2006). The main cotton company is Great Lakes, which accounts for more than 60 percent of production (Manoto, 2010).

Following the ginning process, lint is traded through intermediaries almost exclusively on the international market. These intermediaries collect lint from the ginnery and sell to buyers both in Southern Africa and in the Far East. The cotton seed is sold to seed crushers in Malawi, South Africa and Zambia for the production of cotton seed cooking oil and cake for animal feed.

In 2008, the Cotton Development Trust was formed, involving all cotton players in the value chain. They contribute to policy discussion such as the design of the cotton strategic plan, the cotton act, and the price fixation mechanism. They also aim at increasing training and extension services and improving access to inputs.

The market chain is regulated through the Cotton Council, where licensing of ginners and buyers and registration of farmers is mandatory and trading must take place at designated buying points. Only certified seed is authorized for planting and ginners are prohibited from providing recycled seed to farmers. However, illegal trading does occur because of enforcement challenges, with negative implications for cotton quality and farmer prices.

Interpretation and analysis

The Agricultural Sector Wide Approach (ASWAp), the country's guiding agricultural investment programme, identifies promotion of cotton production as one of the key areas for investment. Furthermore, the NES aims to increase export competitiveness and value addition including cotton oil production and includes various components such as regulations, access to inputs, extension services and support to processing and marketing activities (NES, 2012). These aims are also in line with the New Alliance objectives to facilitate the establishment of cooperatives, ensure research and extension, and improve and harmonise training programmes (New Alliance, 2013).

The policy environment surrounding the cotton sector was very dynamic in the years under review; the new seed cotton pricing model that ensures minimum prices to producers was implemented in 2008, the Cotton Act was approved, leading to the creation of the Cotton Council in 2013. The FISP intermittently targeted the cotton sector and two main national programmes were implemented to support production and processing activities. Through MAFAP analysis, we are able to identify whether and how the policy environment supported cotton production over the 2005–2013 period.

Policy effects on markets are only analysed at farm gate level owing to the lack of data to analyse the level of incentives at the factory gate (ex-ginning factory). The analysis is based on the level of producer price for cottonseed offered by Great Lakes as they buy 60 percent of production.

On average, during the period under review, producers received low disincentives of -6 percent (observed NRP). However, yearly indicators show a mixed situation for producers with observed NRP ranging from 60 percent in 2008 to -49 percent in 2011.

In 2005, the price gap between the domestic price and the reference price for producers of cottonseed was 5 190 MWK/tonne representing an observed NRP of 22 percent. Indeed, compared to the international price of cotton lint, producer prices were relatively high. High prices in 2005 could be explained by the food crisis that

occurred in 2005 as a consequence of erratic rains. Despite the fact that cotton is drought tolerant, yields were strongly affected by the prolonged dry spell (FAO, 2005). Indeed, while area cultivated increased by 131 percent, production remained stable. Moreover, it is likely that producers tried to negotiate high prices owing to the fact that cotton became their main source of income as maize production dropped.

In 2006 and 2007, producers received low price disincentives of -9 and -15 percent, respectively. This can be the result of the weak ability to negotiate and the weak bargaining power of producers. No major factor of price distortions was observed.

In 2008, the government started to implement a pricing model to ensure minimum prices for producers. Great Lakes offered a price equal to the minimum price i.e. 65 000 MWK/tonne. This represented a price increase of 117 percent compared to the previous year, while the export price only increased by 12 percent. Therefore, producers received a strong price incentive to production of 60 percent.

In 2009, despite the fact that ginners offered a lower price than the minimum prices (42 000 vs. 75 000 MWK/tonne), producers still received incentives to production of 47 percent. If the minimum producer price had been respected, producers would have received incentives of 163 percent since the minimum price increased while the international price decreased.[27] Hence, in 2008–2009, cotton producers were not affected by the price decline thanks to relatively high floor prices.

In 2010 however, the international price increased at a higher rate than the domestic price and since production volumes declined by 60 percent between 2009 and 2010 (AMIS, 2014)[28], Great Lakes offered producer prices higher than the minimum price, which led to only minor disincentives of -9 percent.

The dual factors in 2011 of a record price spike (of 45 percent from 2010) on the international market, coupled with high volumes of domestic production that

lowered producer prices, led to the greatest disincentives throughout the period, of -49 percent.

Despite a drop in international prices in 2012, farmers still received disincentives of -20 percent owing to the domestic over-supply of cotton and still relatively high international prices when compared with pre-2010 levels. The peak in production in 2012 was driven largely by the provision of input subsidies in the framework of the FISP and a subsequent expansion in area cultivated by 300 percent (AMIS, 2014).

In 2013, the analysis is based on provisional producer price offered by Great Lakes, which is higher than the minimum price. By receiving the price as planned by Great Lakes, producers received incentives to production of 1 percent. Although the Cotlook A index remained stable in 2013, the domestic price increased due to high inflation caused by the modification of the exchange rate regime.[29]

If the effect of exchange rate misalignment and excessive margins are considered in addition to policy effects, we observe that producers received price disincentives to production of an average -20 percent (adjusted NRP) during the period under review. Inefficiencies and exchange rate misalignment decrease the level of incentives and, therefore, represent additional taxation to producers. The access costs gap to farm gate is mainly composed of what is considered an excessive margin obtained by ginners. The Malawi seed cotton pricing model indicates a margin of 14 percent, which is above the threshold considered reasonable as established by the MAFAP methodology.[30] Margins were thus reduced to 5 percent to reflect a more efficient value chain. If the margin received by ginners were reduced, producer prices would increase by 7 percent on average during the period under review.

Both components, inefficiencies and exchange rate misalignment, are included in the MDG (Figure 42). On average, during the period, the exchange rate gap resulted in additional disincentives to production of 17 percent (Figure 42) of the producer price. Owing to the fact that the exchange rate started to float against US Dollar from mid-2012, no exchange rate gap was observed in 2012 and 2013. The highest level of price distortion due to exchange rate misalignment was in 2011 when the misalignment reached 18 percent.

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[27] The international price decreased because of the delayed effects of the global and financial crisis of 2008 which resulted in weak global consumption levels in 2009 (US. BLS, 2011).

[28] Low level of production was attributed to the price decline in 2009, which discouraged producers to plant in the following year. The MAFAP analysis does not consider the cost of production and despite the fact that producers receive price incentives in 2009, it is likely that the profits for producers in 2009 were low.

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[29] The level of inflation reached 21.3 percent in 2012 (WB, 2014).

[30] MAFAP Methodological guidelines Volume I.

The NRA was calculated by estimating the annual budget transfers allocated to cotton in the framework of the promotion of cotton production programme and the cotton strengthening project. Budget allocated to cotton through the FISP is not included owing to the fact the share of expenditure of the FISP allocated only to cotton could not be identified. While producers received price disincentives to production of -6 percent between 2005 and 2013, the direct support decreases the level of disincentives to -2 percent.

When the inefficiencies, excessive margins and the exchange rate misalignment are considered (adjusted NRA), the results show that even with direct transfers to cotton, producer received incentives to production only in 2008 and 2009.

FIGURE 41.   OBSERVED AND ADJUSTED NOMINAL RATE OF PROTECTION AT FARM GATE FOR COTTON IN MALAWI

■ Observed nominal rate of protection at farm gate   ■ Adjusted nominal rate of protection at farm gate
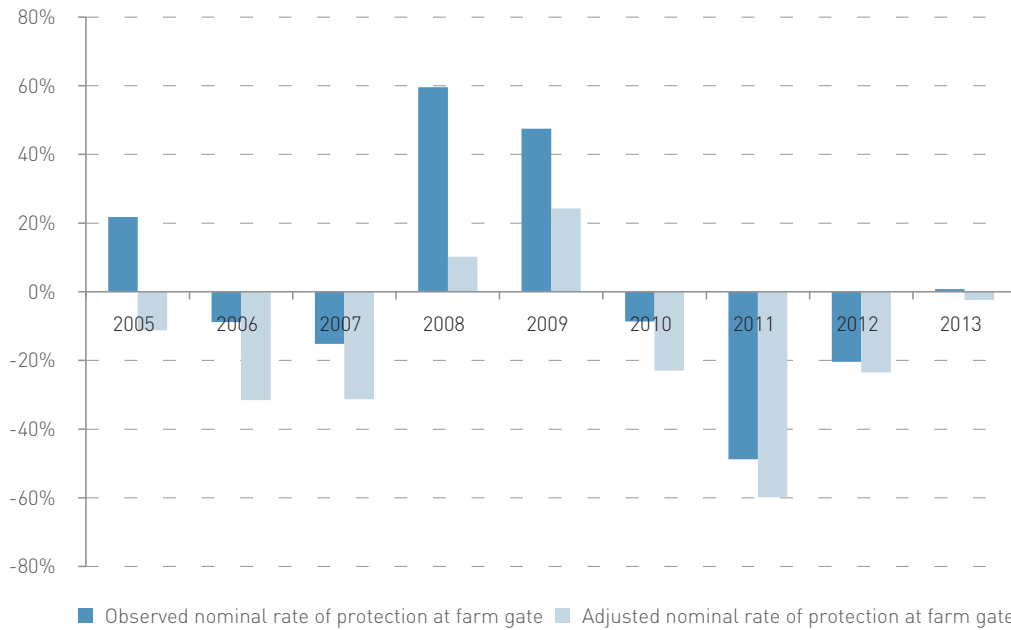
Source: Authors' calculations, 2014

FIGURE 42.   COMPOSITION OF THE MARKET DEVELOPMENT GAP FOR COTTONSEED IN MALAWI

■ Exchange rate gap   ■ Access costs gap to farm gate   ■ Total market development gap
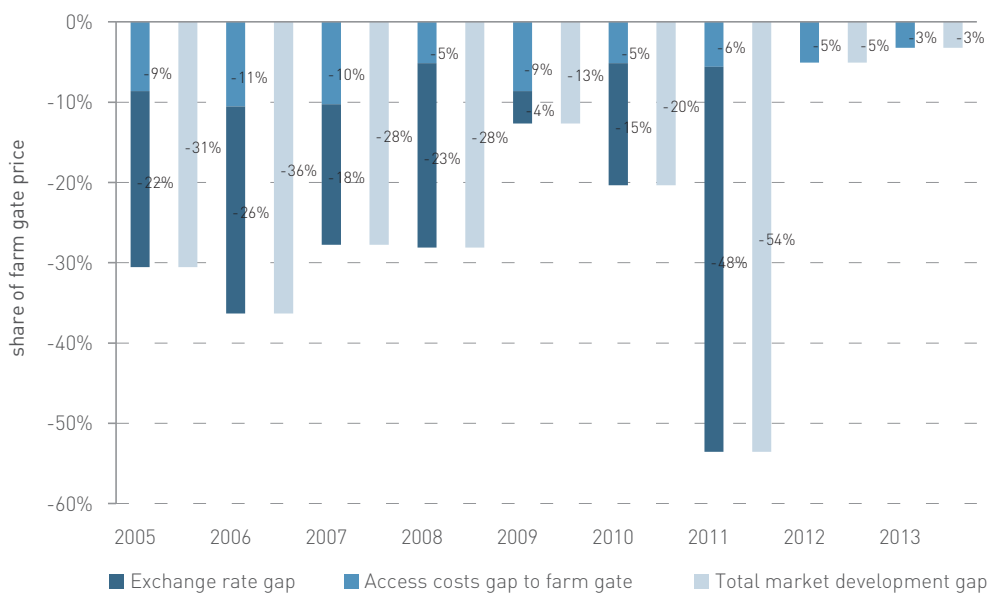
Source: Authors' calculations, 2014

Main message

The cotton sector has attracted interest from policy makers only in the last few years, driven by the political will to diversify exports from tobacco to other cash crops.[31] The government has provided direct budgetary support in several years, implemented market policies to define floor prices, and improved the policy framework through the establishment of the Cotton Act.

The atomistic market environment (Peltzer, 2013) and the strengthening of regulations seem to allow for transmission between export and producer prices. During the years when no exceptional circumstances affected price dynamics, producers received a price close to the price that they should have received in the absence of policy and market distortions.

However, in some of the years, domestic or international factors affected domestic prices. Producers benefited from the price increase in 2005 during the food crisis. They received strong disincentives when the international price of cotton increased in 2011 and 2012.

Producers benefited from the implementation of the price fixation mechanism in 2008 and 2009 by receiving

strong incentives. However, for most years, ginners did not offer prices aligned with the minimum price, which makes the enforcement and usefulness of the price fixation mechanism, questionable. Indeed, MAFAP analysis also reveals that the minimum price set by the government was not systematically aligned with international price trends, which could be due to the fact that prices are set at the beginning of the season and not reviewed during the season to take into account the international price dynamics.

The level of production experienced strong volatility affecting domestic prices and thus creating uncertainty to producers and a mixed situation in terms of price incentives to production. Developing the market information system in order to reflect domestic and international price trends, and disseminating the information to producers could help to stabilize production. Moreover, production levels have experienced strong variability owing to weather vagaries as well as producers' planting decisions that are influenced by prices received in the previous years. The lack of any price adjustment/premium at the end of the season when international prices register an increase constitutes a strong disincentive for producers.

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[31] Government of Malawi & UNDP, 2012.

FIGURE 43. **OBSERVED AND ADJUSTED NOMINAL RATE OF ASSISTANCE AT FARM GATE FOR COTTON IN MALAWI, 2005–2013**

Observed NRA at farm gate   Adjusted NRA at farm gate
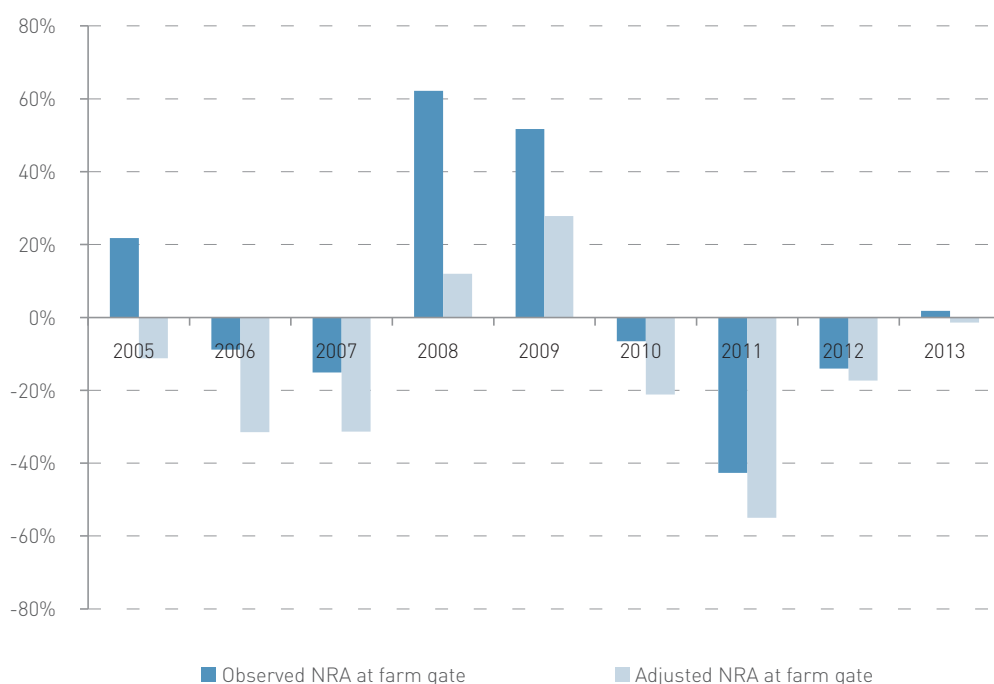
Source: Authors' calculations, 2014

5.6 Aggregate Indicators

In addition to the analyses by commodity, the results have been aggregated to provide (i) a more general picture of the effects of market and trade policies and overall sector performance (aggregate NRP); (ii) the overall effects of inefficiencies and exchange rate misalignment on the agricultural sector (aggregate MDG); (iii) the overall effect of the budgetary transfers allocated to individual commodity (aggregate NRA).

Aggregate indicators were calculated as a weighted average, based on the average contribution of each commodity to the total value of production for the six commodities analysed. Therefore, owing to the high volume of maize produced, results are strongly influenced by maize indicators (Figure 44).

It is important to emphasize two preliminary points:

1. The results on the level of protection for the agricultural sector are presented even though the products included in the analysis represent only 32 percent of the overall value of agricultural production in Malawi.[32] The reason for still computing the indicators for the whole agricultural sector is because the six products analysed – maize, cotton, groundnuts, sugar, tea, and tobacco - include the most important crop for food security, maize, as well as the main exported products. Indeed, maize and exported products can be considered as representative in terms of the food and agricultural policy measures that they attract as well as budgetary transfers that they receive.

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[32] Estimation based on the average gross value of production (constant 2004–2006 million USD) for the period 2005–2011 as indicated in FAOSTAT. Data from national sources are not available.

FIGURE 44.   **AVERAGE SHARE BY COMMODITY ON THE TOTAL VALUE OF PRODUCTION FOR THE COMMODITIES ANALYSED (ABOVE) AND AVERAGE SHARE OF EXPORT COMMODITY ON THE TOTAL VALUE OF PRODUCTION FOR THE EXPORT COMMODITIES ANALYSED (BELOW), AVERAGE 2005–2013**
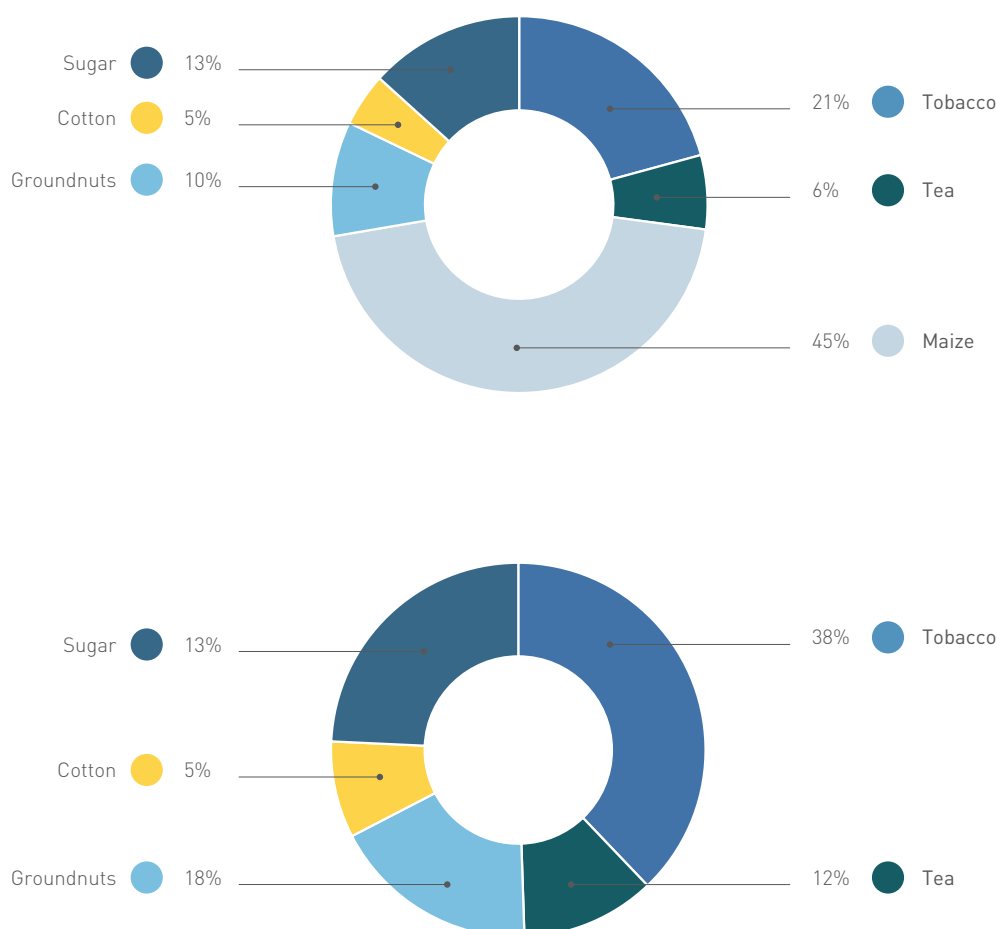
Source: Authors' calculations, 2014

2. The period analysed (2005–2013) was particularly turbulent, with market fundamentals that have been challenged and price trends that have experienced drastic changes. The occurrence of internal and external shocks such as: Malawi's food price crisis in 2005; the international price crises in 2007/08 and 2011/12; and the adoption of a floating exchange rate in May 2012, made it more difficult to isolate the effects of these external shocks and macroeconomic policy decisions from the impact of sector and commodity specific policies.

Nominal rate of protection

Agricultural sector (six commodities analysed)

- Trade and market policies and overall performance resulted in producer disincentives of -11 percent on average between 2005 and 2013.

- The exchange rate misalignment in place until 2012 and the inefficiencies in the value chain created additional disincentives of -29 percent on average between 2005 and 2013.

- The levels of disincentives strongly differ across years but tend to increase between 2005 and 2013.

- Disincentives in the agricultural sector are mainly the result of poor price transmission between domestic and international owing to inadequate infrastructure and lack of negotiation capacities of producers.

- The implementation of trade and markets policies to contain domestic prices also depressed producer prices in some years.

Between 2005 and 2013, market and trade policies, coupled with poor market performance, depressed producer prices by an average 11 percent. Since the results are weighted by the total value of production, results for maize strongly influence the aggregate indicators. Figure 45 shows that until 2012, the observed NRP followed a trend that was either very close to zero or below, except in years 2006 and 2008 when producers face disincentives of around -15 percent. This translates into producers obtaining prices very close, if not fully aligned with their distortion free equivalent, the reference price at farm gate. The plummeting of the NRP in 2013 is mainly due to the policy decision to adopt a floating exchange rate in 2012, which led to the depreciation of the national currency and to inflation exceeding 20 percent in 2012 and 2013 which increased access costs, representing an additional burden for producers (WB indicators, 2014).

In 2006, disincentives of -15 percent are mainly driven by the strong disincentives received by sugar producers since international prices were particularly high that year compared with the producer price. In 2008, disincentives reflect the very low prices received by maize producers. This was due to the several trade and market policies implemented to contain domestic prices for consumers during the global food price crisis that prevented farmers from benefiting from the price surge.

The disincentives of -26 percent, experienced by Malawian farmers in 2013, are due to export restrictions on maize that depressed domestic prices of food security crops. For export commodities, the change of the exchange rate policy had a negative rebound effect on domestic prices, which fell far below their distortion free equivalents. In this regard, it would have been interesting to see if the devaluation of the MWK produced incentives for producers of imported commodities in the same years.

Producers in Malawi are price takers and the way in which prices are determined at farm gate reflects poor price transmission. This is due to the lack of a market price information system, bad infrastructure and a higher level of concentration in the upstream segments of the value chain compared to the producer-wholesale segment. Poor price transmission penalizes producers by hindering their decision making power and their capacities of negotiation. Producers of export commodities suffer from the control that upstream

agents exercise on all stages of the supply chain, which has as an ultimate consequence the determination of prices at the farm gate level and results in strong disincentives for farmers. The situation for less integrated value chains such as maize is no different since the Government uses many different measures to control prices and supply through trade restrictions despite the country's self-sufficiency.

The nominal rate of protection, adjusted to take into account the effect of the exchange rate policy and specific market inefficiencies, still shows negative values. Inefficiencies and the exchange rate misalignment resulted in additional disincentives of -29 percent on average between 2005 and 2013.

FIGURE 45.   **AVERAGE OBSERVED AND ADJUSTED NRPS FOR THE SIX COMMODITIES IN MALAWI**
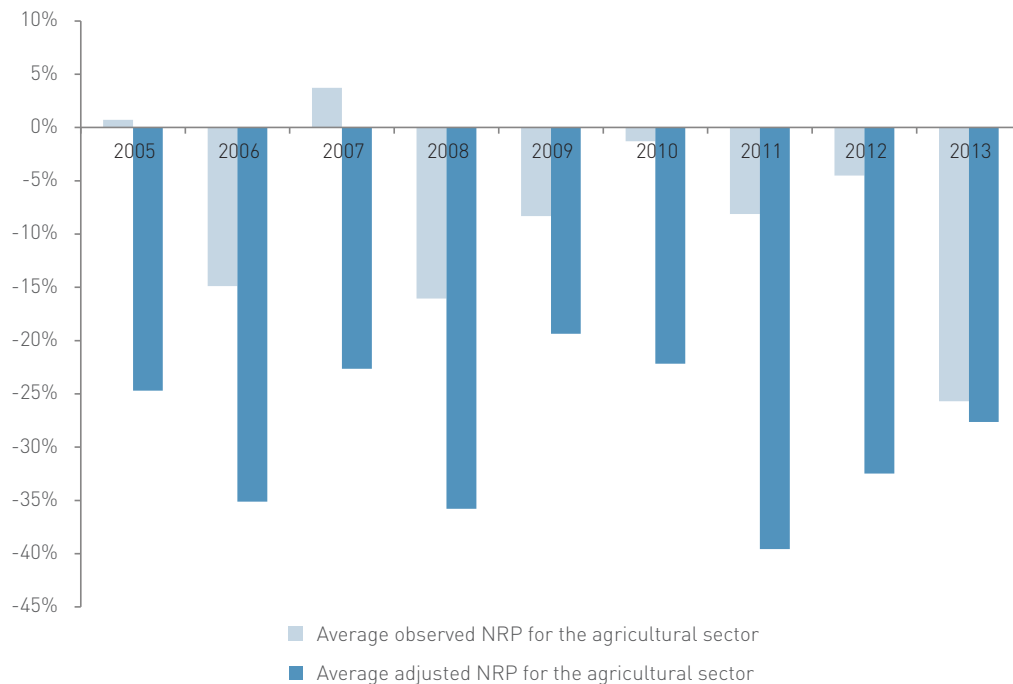
Source: Authors' calculations, 2014

Export commodities

- Trade and market policies and overall sector performance resulted in producer disincentives of -15 percent on average between 2005 and 2013.

- Disincentives tended to increase during the period under review.

- Disincentives in the export sector are chiefly the results of poor infrastructure, lack of competition in the main cash crop value chains and the poor enforcement and/or inefficiency of producer price policies.

- The existence of an exchange rate misalignment until 2012 and the inefficiencies in the value chain created additional disincentives of -30 percent on average between 2005 and 2013.

Producers of exported commodities faced disincentives for most of the years under analysis, amounting to -15 percent on average during the period under review (Figure 45). Since the aggregate indicators are weighted, the level of disincentives for tobacco and sugar strongly

influences the aggregate indicator as these two commodities represent a large share of the value of production compared to tea, groundnuts and cotton. The only exceptions are the years in which Malawi experienced food price crises originating from national or

international markets. In 2005, poor weather conditions led to a significant decline in production followed by increasing prices that resulted in slight disincentives of -4 percent compared to the following years when disincentives were higher. In 2008, producers of export commodities benefited from the international price surge and received prices close to the reference price. Yet in 2007, the driving factors were different. Producer prices were aligned with the reference price owing to the significant incentives received by tobacco producers as a result of the implementation of a floor price mechanism that year.

Adjusted NRPs are negative throughout the period under review, with producer disincentives reaching an average -30 percent. Despite higher levels of integration in the export value chains compared to the food security crops, the adjusted NRP reveals the presence of market inefficiencies in addition to disincentives related to the exchange rate misalignment until 2012. This is also particularly important if we consider that tobacco is the backbone of the economy and that Malawi has approved its National Export Strategy 2013–2018 that entails a renewal of traditional export crops such as tobacco and sets a roadmap to enhance other exports, such as sugar products and oilseed crops including groundnuts and cotton. MAFAP results highlight the need for the export strategy to tackle the issues of low prices at the producer level.

The low prices farmers receive are manifestations of the combined effects of upstream concentration of market power, the lack of competition as well as the fragmentation of the export value chains. Farmers in Malawi bear the cost of value chain inefficiencies and poor access to main domestic and international markets. This is attributed to the poor quality of infrastructure, especially in rural areas and the lack of competitiveness in transport and export services. This has led to disconnection between domestic and international market dynamics. Thereby, domestic prices appear more sensitive to national factors, such as supply shocks or policy changes, rather than international price dynamics. As a landlocked country, facilitating trade through infrastructure development and ensuring competitive markets should be the chief priority of the Government of Malawi.

Despite the will of the government to ensure stable and remunerative prices for producers through the implementation of price policies, producers still face disincentives. The implementation of price policies was not coupled with interventions aimed at strengthening farmer organizations, market information systems, competition at the trader/processor level and was not implemented in a systematic way. In the case of tobacco and cotton, the price policy was sporadically or weakly enforced.

FIGURE 46. **AVERAGE OBSERVED AND ADJUSTED NRPS FOR EXPORT COMMODITIES IN MALAWI**
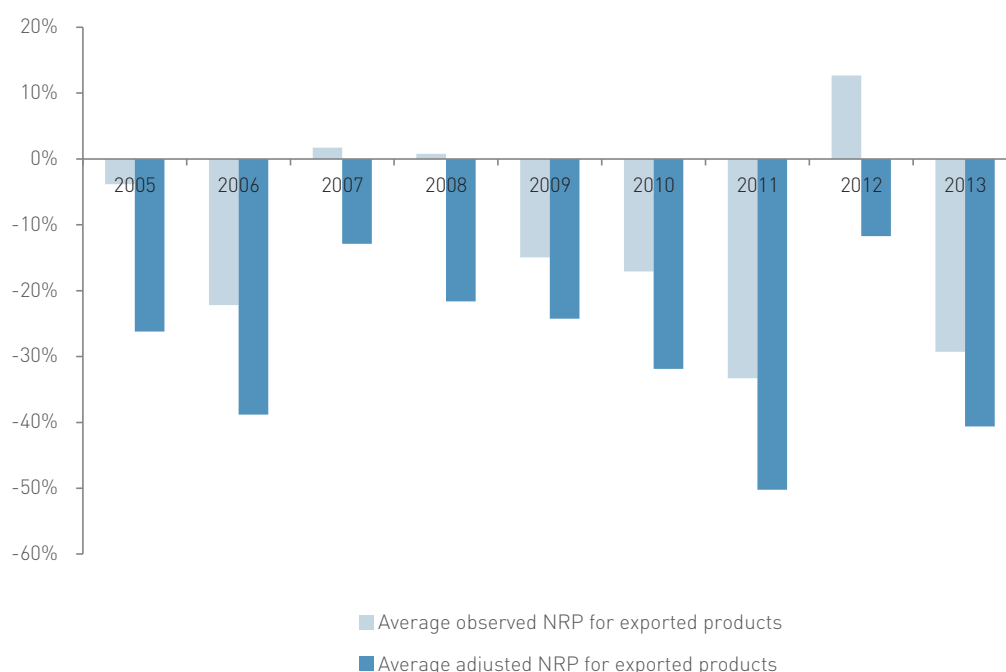
Source: Authors' calculations, 2014

Market development gap

- The Market Development Gap depicts significant additional disincentives of -23 percent on average between 2005 and 2013 for export producers and 32 percent for maize producers.

- The exchange rate misalignment depressed producer price incentives by 22 percent on average between 2005 and 2011.

- Market inefficiencies are higher in the maize value chain compared to export commodities given the significant fragmentation of the maize market.

In addition to measuring the effect of explicit market and trade policies on producer prices, the analysis goes one step further by estimating the average MDG, which is the average cost that inefficiencies in domestic value chains represent for producers. The MDG captures the effects of the exchange rate misalignment that reached 14 percent on average between 2005 and 2012 (IMF, 2012) and is expressed by the exchange rate policy gap. The MDG also reflects the effect of inefficiencies, namely, local taxes and fees, high transport costs and excessive margins expressed by the access costs gaps.

In total, the inefficiencies and the exchange rate misalignment amounted to additional disincentives of an average -23 percent for producers of export crops between 2005 and 2013 and 32 percent for maize producers (Figure 47). The MDG highlights the potential gains or cost saving that can be achieved if the necessary investments were made and adequate measures taken. This is illustrated by the gain related to the exchange rate policy change in 2012. By allowing the exchange rate to float, the MDG for export products declined from -50 to -4 percent in 2011.

The MDG for maize is higher than the MDG for export commodities because of the high transaction costs and market inefficiencies identified in the maize value chain, especially between the farm gate and the wholesale market. Inefficiencies include the high transport costs as well as the margins for each of the many small traders and first assemblers. In 2012, the effect of the exchange rate misalignment was only analysed for the maize value chain since the maize marketing season occurred before the implementation of the floating exchange rate in that year.

The exchange rate misalignment affected producers of export commodities more than maize producers except in 2007 and 2008. On average, the access costs gap for export commodities was lower than the access costs gap for maize. This is consistent with the higher level of integration, the lower number of intermediaries and the direct control on the costs incurred in the export value chains compared to the maize value chain.

FIGURE 47.   COMPOSITION OF MARKET DEVELOPMENT GAP FOR EXPORT COMMODITIES AND MAIZE
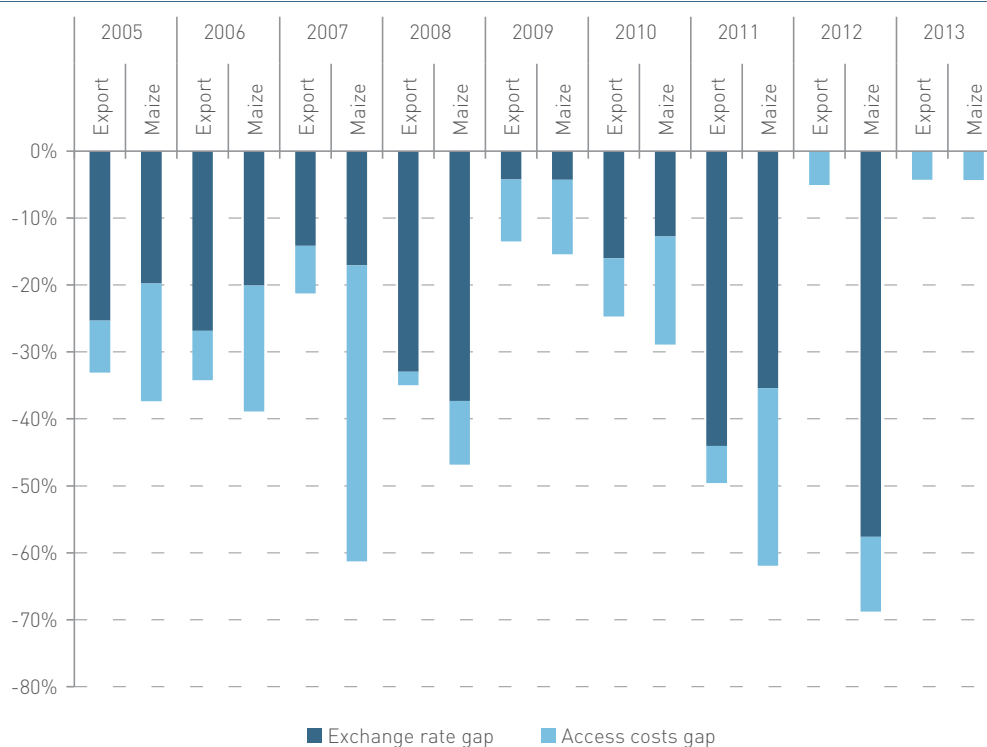
Source: Authors' calculations, 2014

Nominal rate of assistance

■ The high budgetary transfers allocated to individual commodities and in particular to maize, allows for only partial compensation for the disincentives caused by trade and market policies and overall market performance.

The effects of direct support to production are measured with the Nominal Rate of Assistance (NRA). The NRA is an aggregate of the effects of trade and market policies, overall performances and public expenditure allocated to individual commodities. The analysis of public expenditure in support of food and agriculture (PEFA) has enabled the identification of the amount of budgetary transfers allotted to individual commodities. The price incentive structure changes significantly when direct support to commodities is taken into consideration. While the trade and market policies and overall market performance generated disincentives to production of an average -11 percent between 2005 and 2013 (observed NRP), direct support allowed some compensation for these disincentives. The observed NRA amounted to 2 percent on average between 2005 and 2013. Positive NRAs are essentially the result of the strong support to maize production in the framework

of the FISP. Budgetary transfers allocated to tobacco, cotton and sugar were also computed but were sporadic and low compared to the spending allocated to maize production. The effects of the direct support are consistent with the composition of the PEFA, which shows a strong focus on the direct and individual support to commodities: something that is uncommon among SSA Countries.

In the adjusted domain, the results show a different picture. The effects of market and trade policies, overall market performance, and exchange rate misalignment are countervailed by the direct support to commodity production since disincentives declined from -29 percent to -20 percent on average. However, public spending allocated to individual commodities was not sufficient to fully compensate the policy and market distortions and the exchange rate misalignment since producers still received disincentives.

FIGURE 48. OBSERVED NOMINAL RATE OF PROTECTION AND OBSERVED NOMINAL RATE OF ASSISTANCE (LEFT) AND
ADJUSTED NOMINAL RATE OF PROTECTION AND ADJUSTED NOMINAL RATE OF ASSISTANCE (RIGHT) FOR
AGRICULTURAL SECTOR IN MALAWI
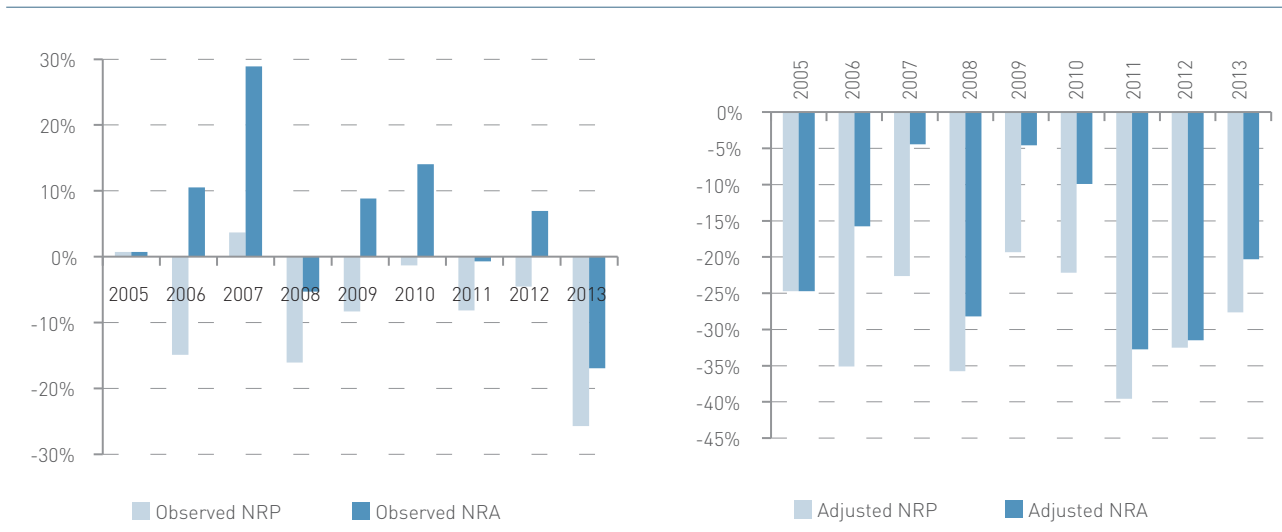
Source: Authors' calculations, 2014

Note: NRA was not estimated in 2005 since the public expenditure analysis covers the period 2006–2013.

6. Public expenditure and aid

6.1 Purpose of the analysis and methodology

The purpose of this section is to analyse the effectiveness of public expenditure in support of food and agriculture (PEFA) in Malawi. This public expenditure analysis does not intend to provide an in-depth analysis of the relationship between sector performance and public expenditure, nor does it provide an impact assessment of projects and programmes covered in the analysis. Instead, it focuses on a detailed analysis of the level, composition and coherence of PEFA in the country. The objective of such an analysis is to identify the patterns of support to food and agriculture sub-sectors (research, input subsidies, infrastructure etc.) and commodities over time, by type and source of funding.

The time period considered for the analysis is 2006–2013; all values indicated in this chapter refer to the average value for this period of analysis unless stated otherwise.

This analysis uses the MAFAP methodology, which enables the identification, disaggregation and classification of all PEFA in the country, following a typology derived from the Organization for Economic Co-operation and Development (OECD) classification of public expenditures (Box 1).

The MAFAP methodology entails the classification of all projects and programmes in support of food and agriculture in the country, based on the nature of the support to the sector that is provided under each project/programme activity. The MAFAP methodology provides the disaggregation of public expenditures by funding source (aid and government), implementing agency, and the distinction between recurrent and capital expenditure, administrative and policy transfers, budgeted and actual expenditure. The methodology also allows us to determine the share of public expenditure allocated to each commodity in the country. More information on the methodology can be found in the methodological guidelines, available on the website.[33]

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[33] Please see : http://www.fao.org/in-action/mafap/products/toolsmethod-ology/en/

BOX 1.   MAFAP CLASSIFICATION OF PUBLIC EXPENDITURE IN SUPPORT OF FOOD AND AGRICULTURE (PEFA)

I. Agriculture-specific policies	monetary transfers that are specific to the agricultural sector, i.e. agriculture is the only, or principal, beneficiary of a given expenditure measure
I.1. Payments to the agents in the agricultural sector	monetary transfers to individual agents of the agro-food sector
I.1.1. Payments to producers	monetary transfers to individual agricultural producers (farmers)
A. Production subsidies based on outputs	monetary transfers to agricultural producers that are based on current output of a specific agricultural commodity
B. Input subsidies	monetary transfers to agricultural producers that are based on on-farm use of inputs:
B1. Variable inputs (seeds, fertiliser, energy, credit, other)	monetary transfers reducing the on-farm cost of a specific variable input or a mix of variable inputs
B2. Capital (machinery and equipment, on-farm irrigation, other basic on-farm infrastructure)	monetary transfers reducing the on-farm investment cost of farm buildings, equipment, plantations, irrigation, drainage and soil improvements
B3. On-farm services (pest and disease control/veterinary services, on-farm training, technical assistance, extension etc., other)	monetary transfers reducing the cost of technical assistance and training provided to individual farmers
C. Income support	monetary transfers to agricultural producers based on their level of income
D. Other non-classified transfers to producers	monetary transfers to agricultural producers individually, for which there is insufficient information to allocate them into above listed categories
I.1.2. Payments to consumers	monetary transfers to final consumers of agricultural commodities individually, in the form of:
E. Food aid	monetary transfers to final consumers to reduce the cost of food
F. Cash transfers	monetary transfers to final consumers to increase their food consumption expenditure
G. School feeding programmes	monetary transfers to final consumers to provide free or reduced-cost food in schools
H. Non classified	monetary transfers to final consumers individually, for which there is insufficient information to allocate them into above listed categories
I.1.3. Payments to input suppliers	monetary transfers to agricultural input suppliers individually
I.1.4. Payments to processors	monetary transfers to processors of agricultural commodities individually
I.1.5. Payments to traders	monetary transfers to agricultural traders individually
I.1.6. Payments to transporters	monetary transfers to transporters of agricultural commodities individually
I.2. General sector support	public expenditures generating monetary transfers to agents of the agro-food sector collectively
I. Agricultural research	public expenditures financing research activities that improve agricultural production
J. Technical assistance	public expenditures financing technical assistance for agricultural sector agents collectively
K. Training	public expenditures financing agricultural training
L. Extension/technology transfer	public expenditures financing provision of extension services
M. Inspection (veterinary/plant)	public expenditures financing control of quality and safety of food, agricultural inputs and the environment
N. Infrastructure (roads, non-farm irrigation infrastructure, other)	public expenditures financing off-farm collective infrastructure
N1. Feeder roads	
N2. Off-farm irrigation	
N3. Other	
O. Storage/public stockholding	public expenditures financing public storage of agro-food products
P. Marketing	public expenditures financing assistance in marketing of agro-food products
Q. Other general support (not classified)	other transfers to the agro-food agents collectively for which there is insufficient information to allocate them into above listed categories

II. Agriculture-supportive policies	public expenditures that are not specific to agriculture, but which have a strong influence on agricultural sector development
R. Rural education	public expenditures on education in rural areas
S. Rural health	public expenditures on health services in rural areas
T. Rural infrastructure (rural roads, rural water, rural energy and other)	public expenditures on rural infrastructure
T.1 Rural roads	
T.2 Rural water	
T.3 Rural energy	
T.4 Other	
U. Non classified	other public expenditures on rural areas benefiting agricultural sector development for which there is insufficient information to allocate them into above listed categories

6.2 Scope of the analysis

The analysis covers budgeted and actual expenditures for all projects and programmes in support of food and agriculture for the period 2006–2013 (all values indicated in this chapter refer to the average value for this period of analysis unless stated otherwise). The analysis includes all expenditures allocated to food and agriculture regardless of the institutions involved. Therefore, expenditures from several institutions were considered (see Annex 3 for more detailed information).

The analysis exclusively covers on-budget expenditures from national and donor sources, namely, expenditures going through the government budget. Despite the fact that quantitative information on off-budget expenditures is available within the Aid Management Platform (AMP) of the Ministry of Finance (MOF), off-budget support was not analysed in this study. The difficulty in obtaining detailed qualitative information on each programme and project prevented us from proposing a suitable classification of off-budget spending according to the MAFAP methodology.

Projects and programmes analysed in this study were selected from the qualitative information provided in the following budget book: Approved Estimates of Expenditures on Recurrent and Capital Budget (Output-based). Based on information provided on activities and outputs by programme and project, expenditures on approximately 1 300 outputs and activities were classified. The annual output-based budget books were collected for the period 2005/06 to 2012/13, indicated as 2006–2013 in this analysis.

Quantitative information, namely, the budgeted expenditures and actual spending allocated per project and programme, was collected from various sources depending on the availability of data. The entire budgeted expenditures were collected in the Output-based Budget Books. Actual expenditures were sourced in the soft and hard copies of the Consolidated Budget Accounts (Part I and II). For some years and/or some ministries, data from the Consolidated Budget Accounts was not available. Therefore, data from the AMP was used as well as revised expenditures as indicated in the Output-based Budget Books (Annex 4).

Expenditures analysed include both recurrent and development public expenditures and are all exclusively at the central level. Public expenditures allocated to food and agriculture through the district councils were not included due to the difficulty in obtaining qualitative information on projects and programmes implemented by the districts.

Information on total government expenditures was collected by the International Food Policy Research Institute (Mwabutwa, C., 2015). Such information has been used to describe the general trends and estimate the share of PEFA.

6.3 Analysis of public expenditures in support of food and agriculture in Malawi

General trends in the global budget

- Public expenditure in Malawi increased annually by 17 percent between 2006 and 2013.

- The disbursement rate was particularly high: 91 percent on average during the period.

- Despite aid suspension from donors during the period 2010–2013, public expenditure did not decline.

From 2006 to 2013, public expenditure in Malawi steadily increased (Figure 49). Budgeted expenditure rose by 17 percent on average each year (Compound Annual Growth Rate-CAGR) and actual spending by 15 percent, reaching about MWK 386 500 million in 2013. The disbursement rate[34] was particularly high and increased from 87 percent in 2006 to 95 percent in 2013, resulting in a 91 percent average over the review period.

Donor inflows dropped between 2010 and 2013 due to governance and human rights concerns as mentioned in the African Economic Outlook (2013). Total government spending also decreased in 2013 following the so-called "Cashgate" scandal.[35] However, the decline in donor support is not immediately apparent when comparing the various sources reporting on development partners' expenditure (Box. 2).

[35] The "Cashgate" refers to a financial scandal involving looting, theft and corruption that happened at Capital Hill the seat of Government of Malawi. Some estimates indicate that 35 percent of government funds may have vanished over the last decade as a result of this widespread corruption practices involving civil servants even in high ranking positions of the ruling party.

[34] The disbursement rate corresponds to the share of actual spending within the budgeted amount.

FIGURE 49. **TOTAL PUBLIC EXPENDITURES IN MALAWI**
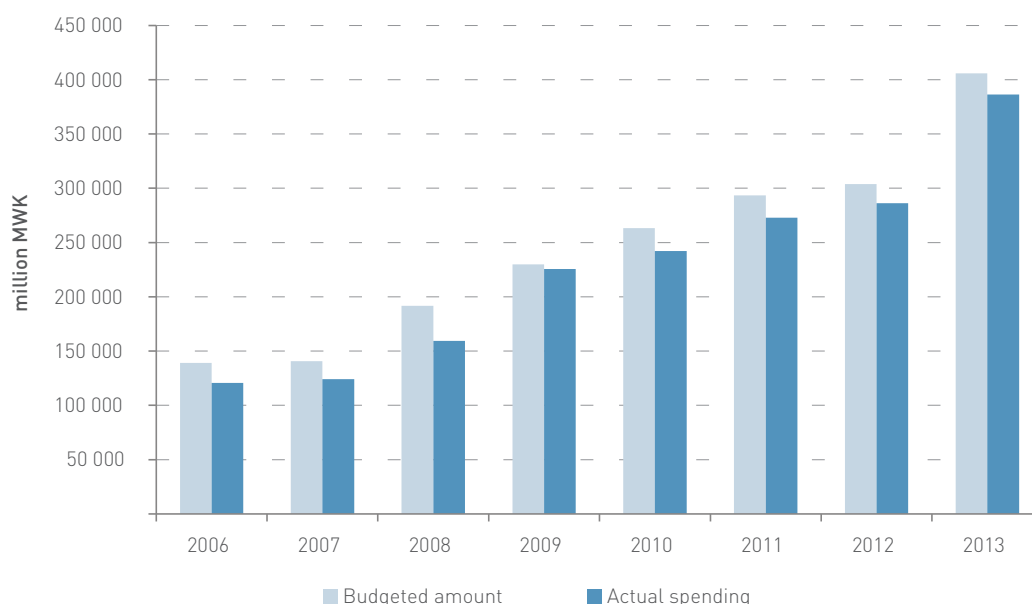
Source: Mwabutwa, 2015*

Note: Total expenditure, as reported by IFPRI (Mwabutwa, 2015), are composed of Statutory Expenditure and Voted Expenditure.

BOX 2.   DONORS EXPENDITURE IN MALAWI

The Organisation for Economic Co-operation and Development (OECD) records development expenditures from OECD countries to Malawi. They are reported in the Creditor Reporting System Database. Data collected from the Development Assistance Committee (DAC) shows a decline of Official Development Assistance[36] in 2011 (ODA). An OCDE and Development Gateway study (Petras, 2009) revealed that the aggregate figures of aid reported at national level and in the CRS database in Malawi are "broadly comparable".

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[36] ODA is defined as those flows to countries and territories on the DAC list of ODA recipients and to multilateral development agencies which are (1) provided by official agencies, including state and local government, or by their executive agencies and (2) each transaction of which is administrated with the promotion of the economic development and welfare of developing countries as its main objectives; and is concessional in character and conveys a grand element of at least 25 percent (OCDE, 2008).

FIGURE 50.   TOTAL OFFICIAL DEVELOPMENT ASSISTANCE TO MALAWI*
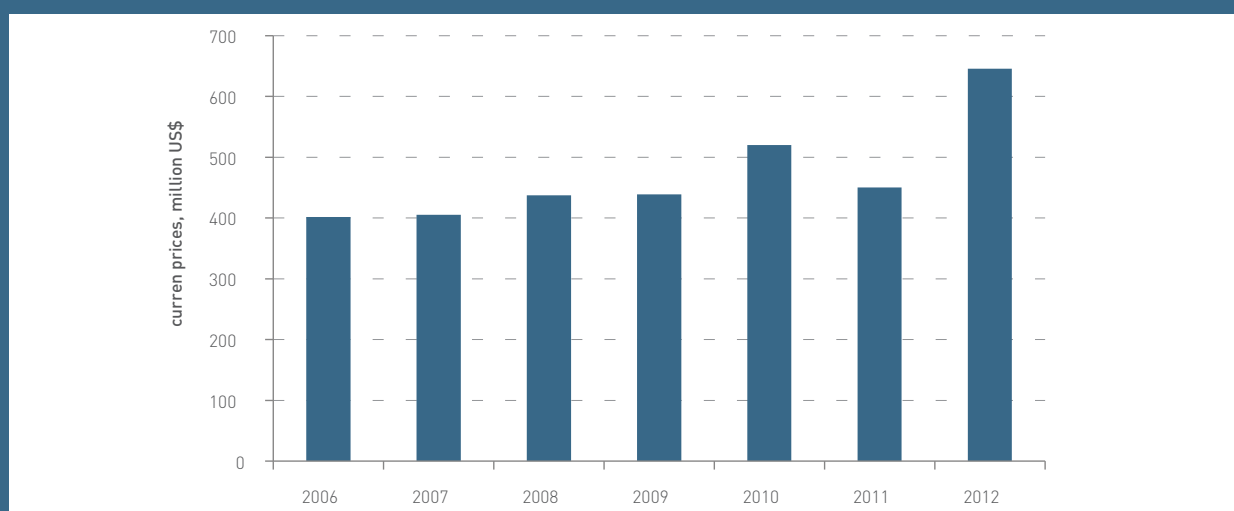
Source: OECD, 2014

Note: Data for 2013 are not available.

General trends of PEFA

- Budgeted PEFA increased at a similar rate as total public expenditure.

- The 2010–2013 period was challenging since donor support fell in 2010, 2011 and 2013, affecting food and agriculture spending overall. In 2011, national spending also fell due to poor economic performance, shrinking the budget allocated to food and agriculture.

- Actual PEFA accounted for 17 percent of the total public expenditure.

From 2006 to 2013, budgeted PEFA including administrative costs increased at an annual rate of 16 percent; similar to the total budgeted government expenditures. However, in 2012, budgeted PEFA witnessed a decline of 12 percent, while actual spending was in decline for the two previous consecutive years: 2010 and 2011 (Figure 52).

The disbursement rates varied during the period and were particularly low in 2010 and 2011, amounting to 58 and 38 percent, respectively. On average, PEFA execution rates were lower (74 percent) than the disbursement rates of total government expenditure (91 percent).

The AMP allows us to distinguish aid allocated through both on and off-budget support. It is interesting to note that, while off-budget support increased from 2006 to 2013 with an annual growth rate of 33 percent, on-budget support only increased by 6 percent, experiencing declines in 2007 and 2010 (Figure 51).

Donor expenditures recorded at national level by the Ministry of Finance in the framework of the AMP are higher than ODA data shows. This could be explained by the fact that the AMP covers various sources of expenditures, while the scope of the ODA is more limited.[37]

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[37] ODA corresponds to donor aid reported by 18 non-Development Assistance Committee countries, 33 multilateral agencies and the Bill and Melinda Gates Foundation.

FIGURE 51.   **TOTAL ACTUAL DISBURSEMENT OF ON-BUDGET DONOR SUPPORT***
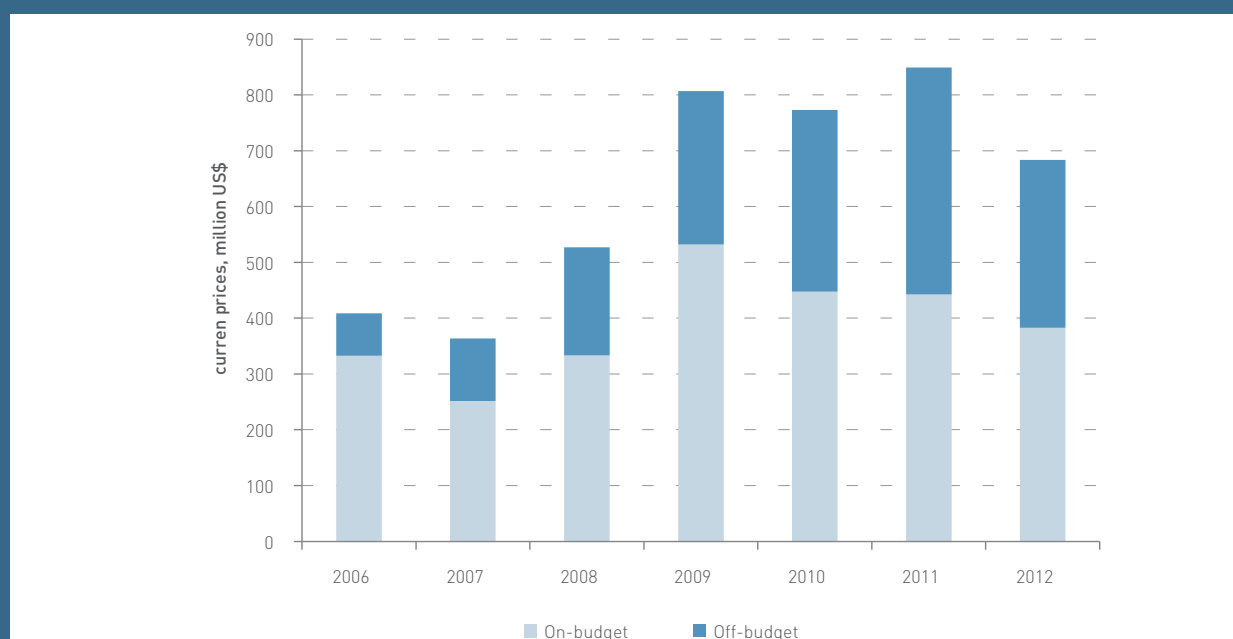
Source: AMP, 2014

*Note: Data for 2013 are not available.

The decline observed in actual food and agriculture expenditures in 2010 is the result of the suspension of aid from several donors. In 2010 and 2011, according to the African Economic Outlook (2013), donors from bilateral and multilateral cooperation interrupted their support, expressing concern about the deteriorating governance environment in the country, resulting in lower public expenditures in these two years. While the suspension of aid did not affect total government expenditure, agricultural expenditure was heavily penalized since donor expenditure in support of food and agriculture decreased by 83 percent in 2009–2010. In 2010, actual spending of donor support represented only 11 percent of the budgeted amount, and in 2011, amounted to only 22 percent (Figure 53) (see more in the "Role of development aid in PEFA" section).

Actual national PEFA remained stable in 2010 but decreased by 35 percent in 2011. While the disbursement rate of national spending was 99 percent on average between 2006 and 2013, it fell to 41 percent in 2011. Indeed, Malawi faced economic challenges due to inappropriate macroeconomic policies such as a rising budget deficit and domestic debt in the context of the overvalued exchange rate. Moreover, government revenue declined due to falling export earnings, particularly from tobacco (African Economic Outlook, 2013). The government also reinforced their exchange rate control to mitigate the depletion of foreign reserves. However, this resulted in the emergence of a dynamic parallel market, increasing the cost of imports. As a consequence, this created an additional burden for the total, and in particular, the food and agriculture

budget. In 2012, since the government implemented a range of market-oriented reforms (devaluation of the currency, fuel pricing mechanism, reduction of import duties), the relation between government and donors improved and the aid inflows recovered. The level of actual donor support increased and the disbursement rate was particularly high relative to the previous year (87 percent).

FIGURE 52. **BUDGETED AND ACTUAL PEFAA**
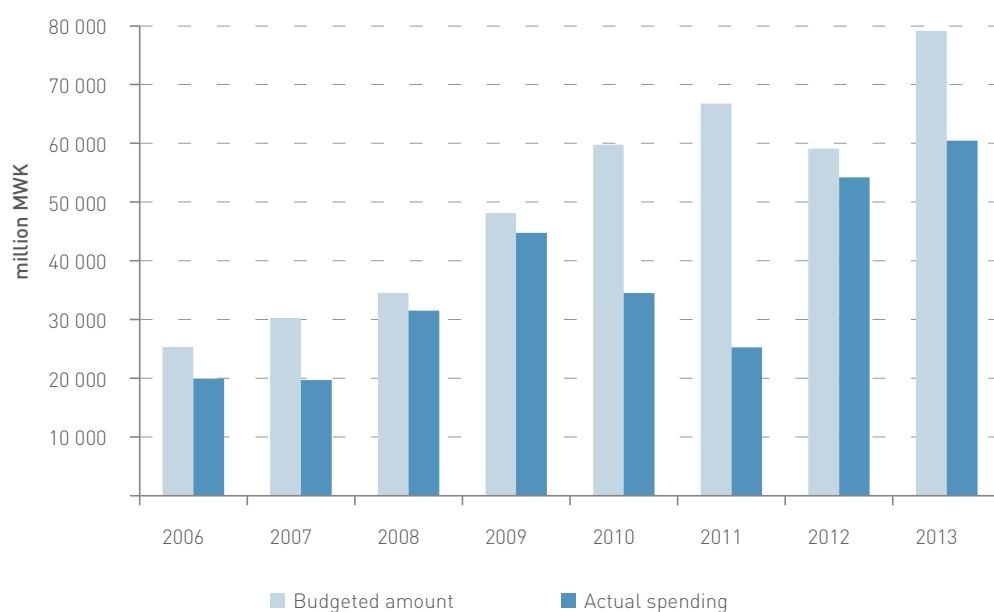
Source: Authors' calculations, 2014

TABLE 17. **BUDGETED AND ACTUAL PEFA (MILLION MWK), DISBURSEMENT AND GROWTH RATES**

	2006	2007	2008	2009	2010	2011	2012	2013
Budgeted amount (Million MWK)	25,312	30,253	34,532	48,149	59,797	66,783	59,055	79,150
Actual spending (Million MWK)	19,907	19,686	31,535	44,747	34,509	25,227	54,217	60,474
Disbursement rate (%)	79	65	91	93	58	38	92	76
Annual growth rate Budgeted amount (%)	20	14	39	24	12	-12	34	20
Annual growth rate Actual spending (%)	-1	60	42	-23	-27	115	12	-1

Source: Authors' calculations, 2014

In 2013, actual donor spending in support of food and agriculture represented only 31 percent of budgeted spending (Figure 53). Following the "Cashgate" scandal, several donors again interrupted the aid flow. However, actual national spending exceeded budgeted amounts, allowing some compensation for the decline in donor support.

The period 2010–2013 was challenging for the Malawian Government. The decline in actual donor expenditures compared to the previous years and the low disbursement rate of donor spending clearly show that donors interrupted their aid in 2010, 2011 and 2013. However, the literature review reporting such aid suspension during the period is scarce. It is likely due to the fact that the aid suspension was not the result of a common decision from donors and they might have interrupted their support at different times during the period.

When looking at the expenditures incurred by the Ministry of Agriculture and Food Security (MoAFS) compared to the total government budget, we observe that it declined in 2010 and 2011, while the total

government budget increased (Figure 54). In relative terms, while the MoAFS represented 24 percent of total government expenditures in 2009, it accounted for 13 and 11 percent in 2010 and 2011, respectively.[38] This shows that the agricultural sector was hit harder by budget cuts than other sectors during these years.

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[38] Expenditures by vote as reported in the IFPRI database, compiled by Mwabutwa, C., 2015.

FIGURE 53.   BUDGETED AND ACTUAL PEFA PER SOURCE OF FUNDING

Source: Authors' calculations, 2014

FIGURE 54.   ACTUAL MOAFS EXPENDITURE AND OTHER ACTUAL EXPENDITURE (LEFT AXIS), AND SHARE OF MOAFS EXPENDITURE OVER THE TOTAL GOVERNMENT EXPENDITURES (RIGHT AXIS)
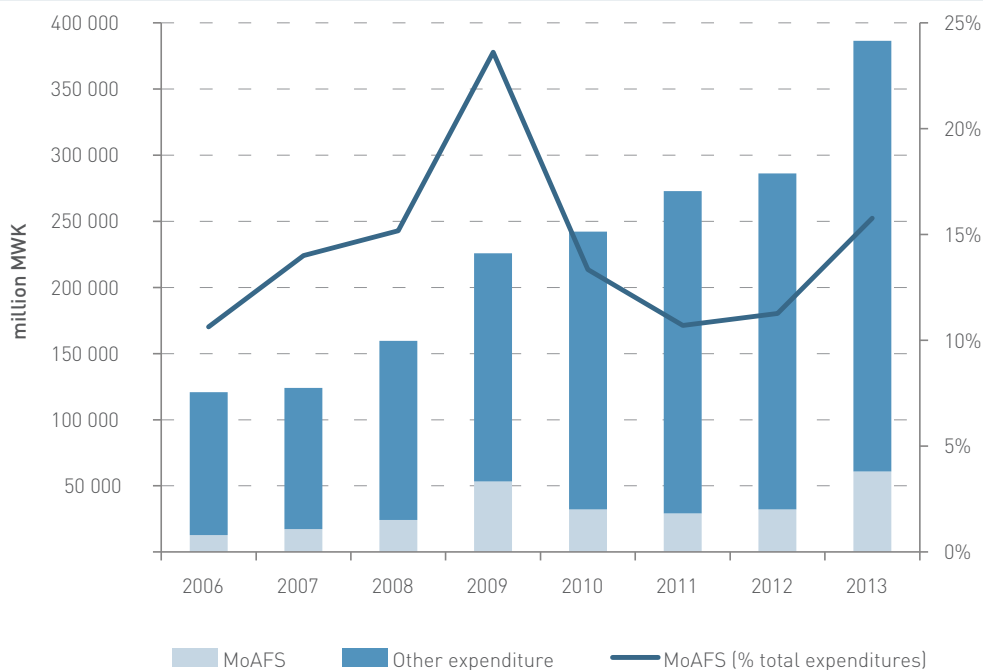
Source: Mwabutwa, 2015

According to the MAFAP definition, the share of PEFA[39] within total government expenditures was high (Figure 55). Annual average budgeted amounts, during the period under review, exceeded 20 percent of total public expenditures. With regards to actual expenditures, PEFA amounted to 17 percent on average and always above 10 percent of total expenditures, except in 2011.

Despite the high variability over time of public spending in support of food and agriculture in absolute terms, its share on the Gross Domestic Product (GDP) remained stable, accounting for an average 30 percent of GDP over the 2006–2013 period. Agricultural GDP growth was unstable but this does not seem related to the level of public expenditure (Figure 56). For instance, while PEFA increased strongly in 2008 and 2012, the agricultural value added declined.

By looking at the performance of the agricultural sector and the PEFA variability, it appears they are not strongly correlated. This might reveal a certain inelasticity of economic growth in regards to public expenditure. However, a more detailed econometric study would be required to better understand the correlation between the performance of the sector and the variability of public spending since lagged effects could then be observed.

The variability of GDP growth also demonstrates the effect of other factors on agricultural growth such as the influence of adverse weather events (FAO-WFP, 2005). From 1993 to 2004, it was estimated that the main factor contributing to the unbalanced growth was the effects of droughts and floods.

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[39] This includes policy transfers and administrative costs.

FIGURE 55.   BUDGETED AND ACTUAL PEFA WITHIN TOTAL PUBLIC EXPENDITURE
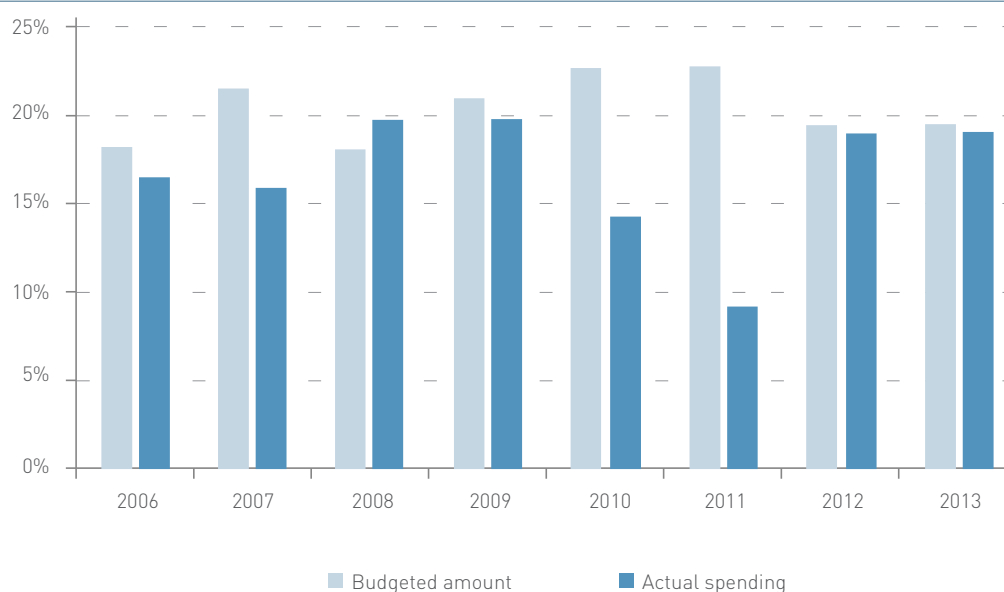
Source: Authors' calculations, 2014

FIGURE 56.   **AGRICULTURAL VALUE ADDED, GDP GROWTH, AGRICULTURAL VALUE ADDED AND PEFA**

— Agriculture, value added (annual % growth)   — GDP growth (annual %)

— Agriculture, value added (% of GDP)   — Ag public expenditure (annual % growth)
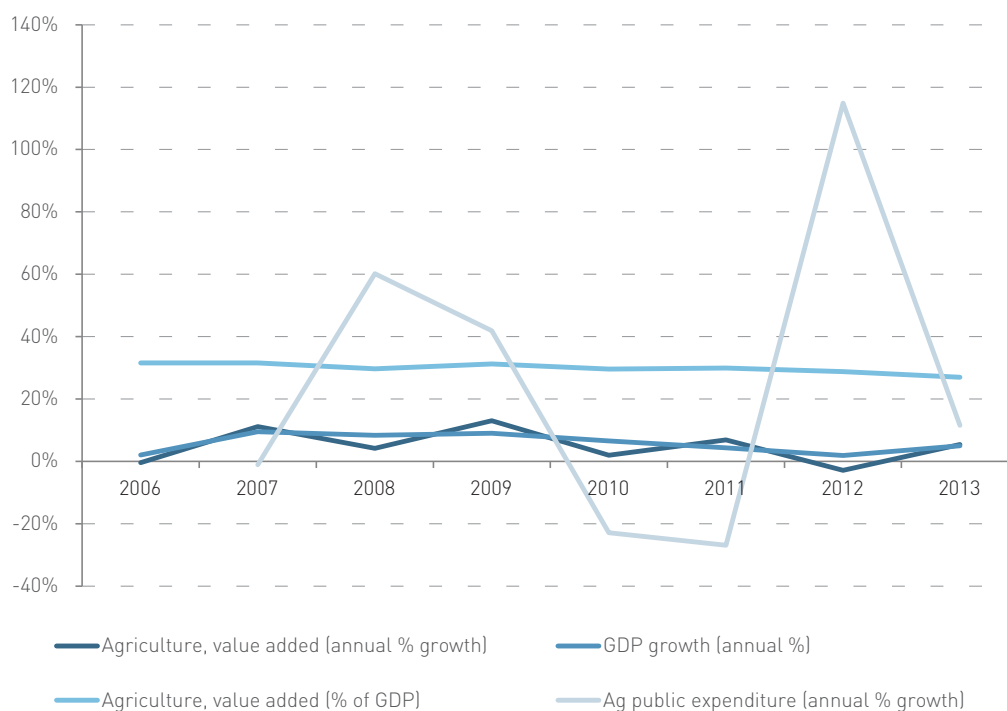
Source: World Bank, 2014 and Authors' calculations, 2014

Composition of PEFA

■ Agriculture-specific expenditure represented 84 percent of PEFA on average during the period 2006–2013; this shows that priority is given to direct support rather than indirect support.

PEFA are composed of administrative costs and policy transfers. Policy transfers include (1) agriculture-specific expenditures and (2) agriculture-supportive expenditures.

Agriculture-specific expenditures include those that directly influence the development of agriculture in the country. They are composed of payments to sector agents (producers, consumers, input suppliers, processors, traders) and general support to the sector (agricultural research, technical assistance, training, extension, inspection, agricultural infrastructure, storage, marketing and other types of general support).

Agriculture-supportive expenditure is composed of expenditures that are not specific to agriculture but have an impact on agricultural development. These include expenditures in support of rural education, rural health and rural infrastructure.

MAFAP analysis reveals that the food and agriculture sector in Malawi is chiefly supported through agriculture-specific expenditure, namely, policy transfers that directly influence the development of the sector (Figure 57). Agriculture-specific expenditures represented 84 percent of total expenditures in support of food and agriculture. The composition of PEFA remained broadly similar across years, with 2009 and 2012 showing higher values for agricultural-supportive expenditures. In 2010, when actual PEFA witnessed a decline, agriculture supportive expenditures decreased at a higher rate than specific expenditure.

Policy transfers in support of food and agriculture, as classified by MAFAP, are presented in the Table 18.

FIGURE 57.   **COMPOSITION OF PEFA**
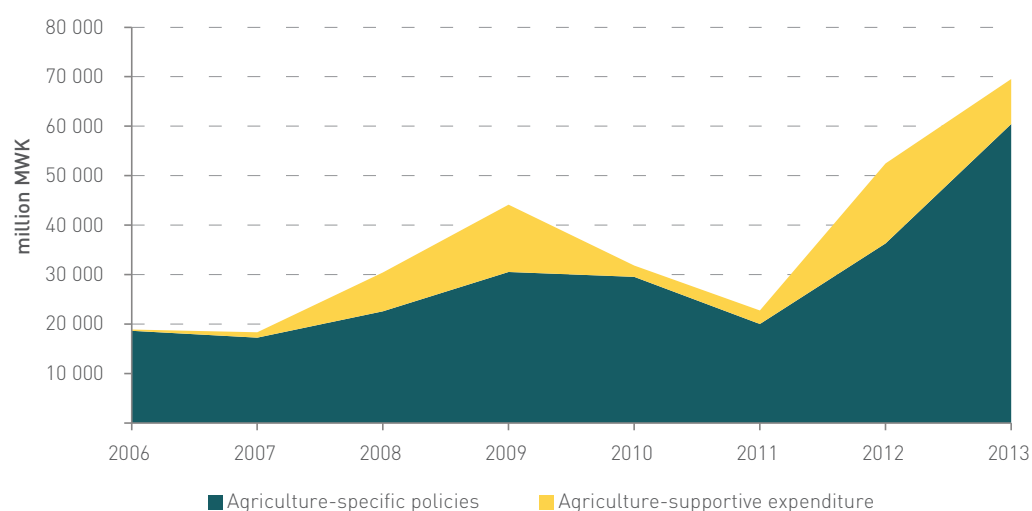
TABLE 18.   **COMPOSITION OF FOOD AND AGRICULTURE EXPENDITURES IN MALAWI (MILLION MWK)**

	2006	2007	2008	2009	2010	2011	2012	2013
I. Agriculture-specific policies	18,626	17,241	22,568	30,517	29,533	19,999	36,291	60,433
I.1 Payments to agents in the food and agriculture sector	17,732	11,461	17,707	23,353	27,547	13,671	25,908	53,229
I.1.1. Payments to producers	17,712	11,453	14,675	23,227	27,416	13,181	25,683	53,186
A. Production subsidies based on outputs	0	0	0	0	0	0	0	0
B. Input subsidies	8,369	11,180	14,629	23,227	27,416	13,180	25,683	53,186
B1. Variable inputs	8,174	10,311	13,971	22,417	26,661	12,514	24,632	51,044
B2. Capital (including on-farm irrigation and infrastructure)	194	650	596	519	386	467	486	849
B3. On-farm services	1	220	63	291	368	198	565	1,293
C. Income support	9,343	41	46	0	0	0	0	0
D. Other payments to producers	0	231	0	0	0	1	0	0
I.1.2. Payments to consumers	18	0	2,614	3	0	0	91	0
E. Food aid	0	0	2,614	3	0	0	0	0
F. Cash transfers	0	0	0	0	0	0	0	0
G. School feeding programmes	0	0	0	0	0	0	0	0
H. Other payments to consumers	18	0	0	0	0	0	91	0
I.1.3. Payments to input suppliers	0	0	2	0	0	0	0	0
I.1.4. Payments to processors	1	8	410	98	56	486	134	43
I.1.5. Payments to traders	1	0	2	24	75	5	0	0
I.1.6. Payments to transporters	0	0	2	0	0	0	0	0

	2006	2007	2008	2009	2010	2011	2012	2013
I.2 General support to the food and agriculture sector	894	5,780	4,861	7,164	1,985	6,327	10,382	7,204
I. Agricultural research	137	529	922	1,314	317	997	2,781	2,256
J. Technical assistance	2	1	2	86	4	0	547	0
K. Training	373	570	836	1,417	351	864	2,754	2,479
L. Extension/technology transfer	297	659	823	607	107	1,137	1,128	134
M. Inspection	35	97	839	202	4	574	256	265
N. Agricultural infrastructure	16	265	656	2,587	323	760	1,835	1,212
N1. Feeder roads	14	13	0	0	0	68	500	219
N2. Off-farm irrigation	0	236	546	2,587	323	358	912	715
N3. Other off-farm infrastructure	3	16	111	0	0	334	423	278
O. Storage/public stockholding	1	3,426	71	6	49	17	15	174
P. Marketing	33	232	606	946	286	1,861	992	317
Q. Other general support to the food and agriculture sector	0	1	107	0	544	117	74	368
II. Agriculture-supportive expenditure	3,939	5,348	7,856	13,608	14,684	16,272	16,175	9,098
R. Rural education	12	2	1	0	94	0	33	0
S. Rural health	2	0	0	0	369	0	0	0
T. Rural infrastructure	3,752	5,075	7,411	12,584	14,112	15,361	15,358	8,398
T1. Rural roads	3,679	4,338	6,755	12,244	12,602	13,600	12,611	8,221
T2. Rural water and sanitation	68	697	656	39	782	1,694	366	177
T3. Rural energy	0	40	0	0	0	68	283	0
T4. Other rural infrastructure	4	0	0	300	728	0	2,098	0
U. Other support to the rural sector	173	271	444	1,024	110	911	783	700
III. Total expenditure on agriculture and rural development (policy transfers)	22,565	22,589	30,424	44,125	44,217	36,271	52,465	69,531

Source: Authors' calculations, 2014

Agriculture-specific public expenditures

■ Payments to producers capture 65 percent of PEFA and 80 percent of agriculture specific expenditures, revealing a focus on the provision of private goods rather than public goods.

■ Producers are chiefly supported in the framework of the FISP, namely through the provision of variable input subsidies. Budget allotted to the FISP amounted to 57 percent of PEFA and 9 percent of national spending. Furthermore, actual spending allocated to the FISP increased each year by an average 20 percent.

■ Although general support to the food and agriculture sector increased over the period, it represented only 20 percent of the agriculture-specific expenditure. Drops were recorded in 2010 and 2013 due to the aid suspension. The main component of the general support is technical assistance, training and extension, followed by agricultural research.

■ The concentration of expenditures allocated to the FISP prevented a more diversified and balanced allocation of PEFA.

Agriculture-specific public expenditures are composed of payments to agents in the food and agricultural sector and general support to the sector. Payments to agents are monetary transfers to individuals including producers, consumers, input suppliers, processors, and traders. General support consists of agricultural research,

technical assistance, training, extension, inspection, agricultural infrastructure, storage, marketing and other types of general support.

From 2006 to 2013, general support to the sector was limited, representing only 20 percent of agriculture-specific expenditure (Figure 58). The general support allocations were particularly low in 2006 and 2010, amounting to only 5 and 7 percent respectively.

This reflects the will of the government to prioritize support to individual agents (mainly producers) rather than providing support to the sector using a value chain approach that would target inefficiencies and thus, affect other agents and elements beyond production. Payments to agents accounted for 68 percent of PEFA.

FIGURE 58.   COMPOSITION OF AGRICULTURAL SPECIFIC PUBLIC EXPENDITURES

■ General support to the food and agricutlure sector

■ Payments to agents in the food and agriculture sector
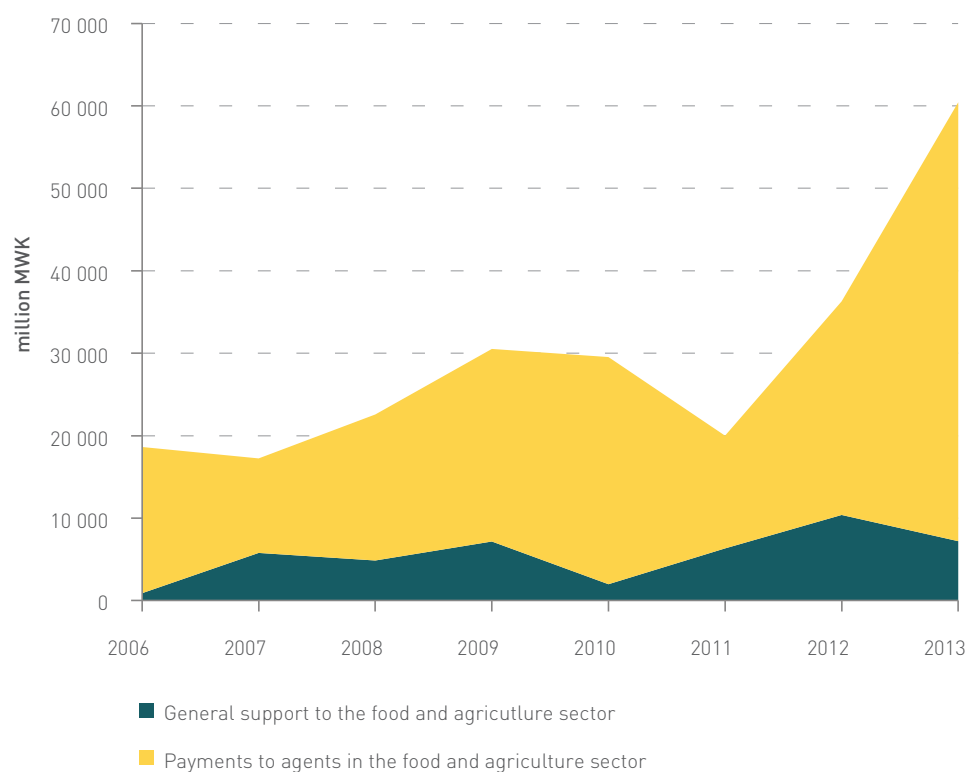
Source: Authors' calculations, 2014

Among agents of the food and agricultural sector, the main beneficiaries were producers (Figure 59). Payments to producers represented 98 percent of payments to agents. In other words, payments to producers amounted to 65 percent of PEFA.

The remaining 2 percent was allocated to other agents but followed a more scattered and discontinuous path. In 2008, public expenditures also targeted consumers, with MWK 2 597 million allocated to the procurement of maize through ADMARC in order to redistribute it during the lean season at subsidised prices, probably to hedge against the effect of the soaring food prices.

Payments to processors are also observed in 2008 and 2011. In 2011, several projects were developed to

improve agro-processing activities including the project implemented by the MoAFS that aimed to facilitate access to credit, equipment and technology in order to increase the value added of certain commodities. In 2011, payments to processors were delivered by the Ministry of Industry, Trade and Private Sector Development in an effort to increase the production of locally manufactured products. Payments to the remaining agents, such as inputs suppliers, traders and transporters, were not significant.

The MAFAP methodology enables the identification of the composition of payments to producers, showing that 96 percent of the resources allocated to producers were in form of variable inputs (Figure 60) provided in the framework of the FISP.

From 2006 to 2013, the level of expenditure allocated to inputs (fertilizer and seeds) varied widely in absolute and relative terms (Figure 61). For instance, in 2006, support to producers through variable inputs represented 43 percent of PEFA, while this share amounted to 84 percent in 2010.

FIGURE 59.   COMPOSITION OF EXPENDITURES ALLOCATED TO AGENTS OF THE FOOD AND AGRICULTURAL SECTOR
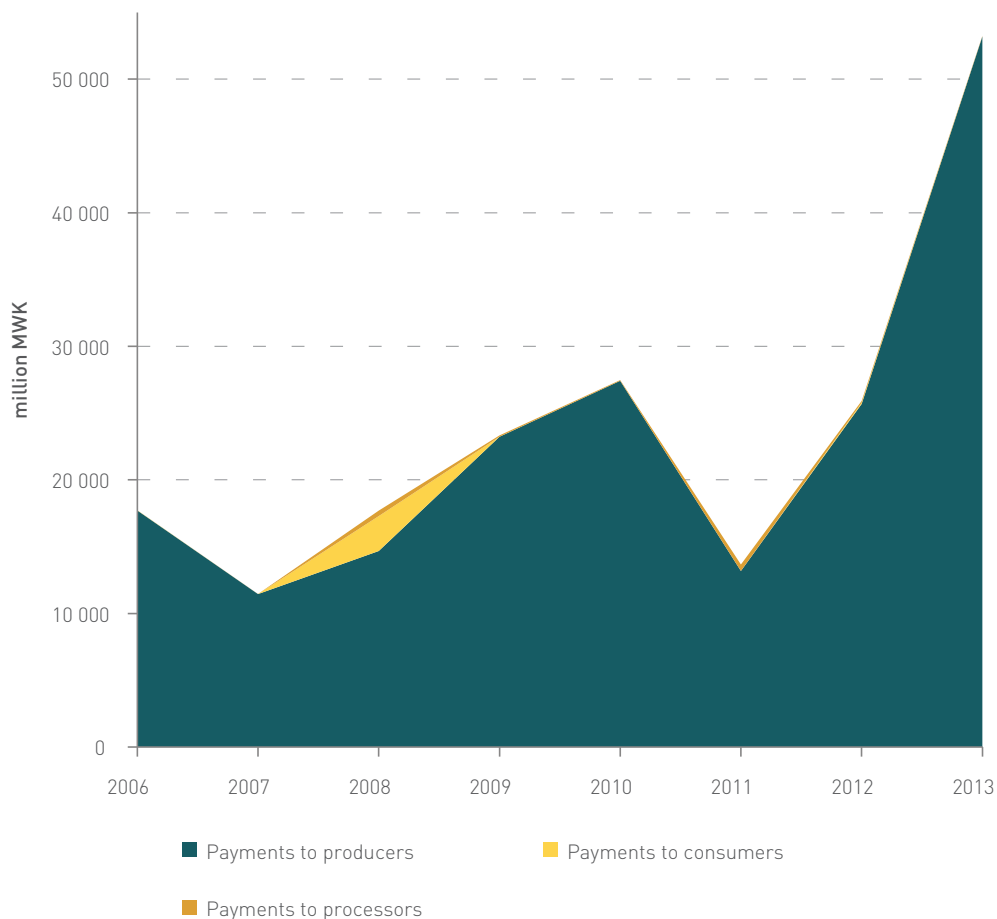
Source: Authors' calculations, 2014

FIGURE 60.   COMPOSITION OF EXPENDITURES ALLOCATED TO PAYMENTS TO PRODUCERS, AVERAGE 2006–2013

Source: Authors' calculations, 2014

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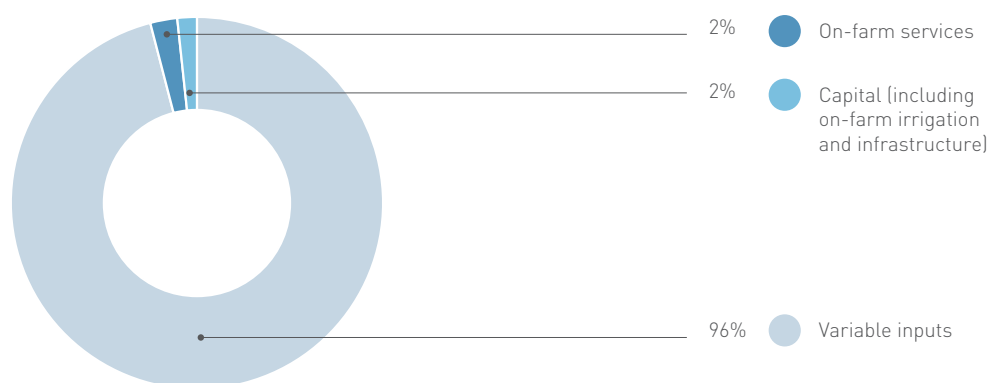
FIGURE 61.   **EXPENDITURES ALLOCATED TO VARIABLE INPUTS IN ABSOLUTE TERMS, AS A SHARE OF AGRICULTURE SPECIFIC EXPENDITURES AND AS A SHARE OF TOTAL FOOD AND AGRICULTURE EXPENDITURES**

Variable inputs (absolut terms in million MWK)
Variable inputs (% agriculture specific expenditure)
Variable inputs (% food and agriculture expenditure)
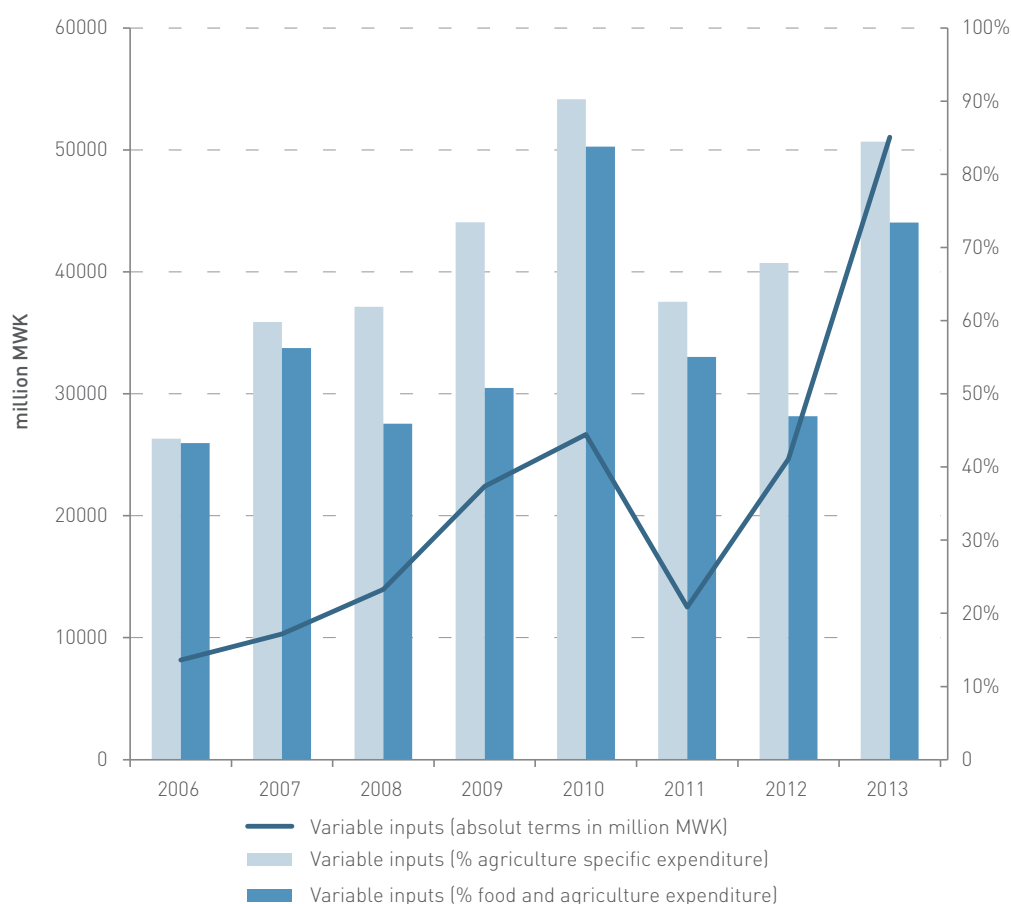
Source: Authors' calculations, 2014

According to the Agricultural Public Expenditures review undertaken by the World Bank, since the introduction of the FISP, the programme has mobilized 69 percent of the MoAFS budget, on average. This figure is close to the MAFAP results, showing that the FISP accounted for 64 percent of the MoAFS budget, corresponding to 57 percent of the PEFA.[40] The Chirwa and Dorward (2013) analysis of the programme estimated that the FISP represented, on average, 9 percent of the total government budget and 56 percent of the food and agriculture expenditures between 2007 and 2012 (Chirwa, 2013). These results are almost identical to the MAFAP results for the same period (Table 19).

Between 2008 and 2009, the costs of the programme increased by 60 percent owing to the surge in the international price of fertilizer as well as increases in transport, procurement and seed costs (World Bank,

2014; Chirwa, 2013). The drop observed in 2011 is likely linked to the reduction of national budget that year. Indeed, actual spending allocated to the FISP represented only 50 percent of the budgeted amount (MWK 22 613 vs. MWK 11 403 million).[41] In 2012, expenditure allocated to the FISP recovered, reaching the level of 2010. In 2013, FISP expenditure attained the highest level with 51 044 million of MWK. The budget books show that the FISP is exclusively funded through national spending.

As mentioned previously, development of the agricultural sector was chiefly supported by payments to agents and more precisely, to producers in the framework of the FISP. Therefore, general support to agriculture accounted for only 20 percent. General support includes interventions that generate an impact on overall agricultural development, such as: agricultural

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[40] The slight discrepancy between WB and MAFAP data could be explained by the fact that revised expenditures were collected by the WB while actual expenditures were used for this analysis.

[41] This drop in 2011 is not reflected in the WB review as revised expenditures were collected.

research, technical assistance, training, extension and technology transfer, inspection (vegetal and animal), agricultural infrastructure, storage/public stockholding and marketing.

TABLE 19. EXPENDITURES ALLOCATED TO THE FISP

	2006	2007	2008	2009	2010	2011	2012	2013	AVG
Variable inputs (million MWK)	8,174	10,311	13,971	22,417	26,661	12,514	24,632	51,044	21,216
Variable inputs (% of MoAFS budget)	64	59	58	42	82	43	76	84	64
Variable inputs (% agriculture specific expenditure)	44	60	62	73	90	63	68	84	68
Variable inputs (% food and agriculture expenditure)	43	56	46	51	84	55	47	73	57
Variable inputs (% government budget)	7	8	9	10	11	5	9	13	9

Source: Authors' calculations, 2014

General support increased steadily by an average 20 percent per year from 2006 to 2013. Donors funded more than half of the general support to agriculture (54 percent). As a consequence, in the context of the aid suspension in 2010, the level of general support witnessed a strong decline in absolute terms, with a decrease of 47 percent between 2009 and 2010 (Figure 62). Indeed, actual spending from donors allocated to general support represented only 30 percent of the budgeted amount in 2010. Also in 2012, general support was limited and represented only 12 percent of agriculture-specific spending, while it amounted to 29 percent the previous year.

FIGURE 62. COMPOSITION OF GENERAL SUPPORT TO FOOD AND AGRICULTURE
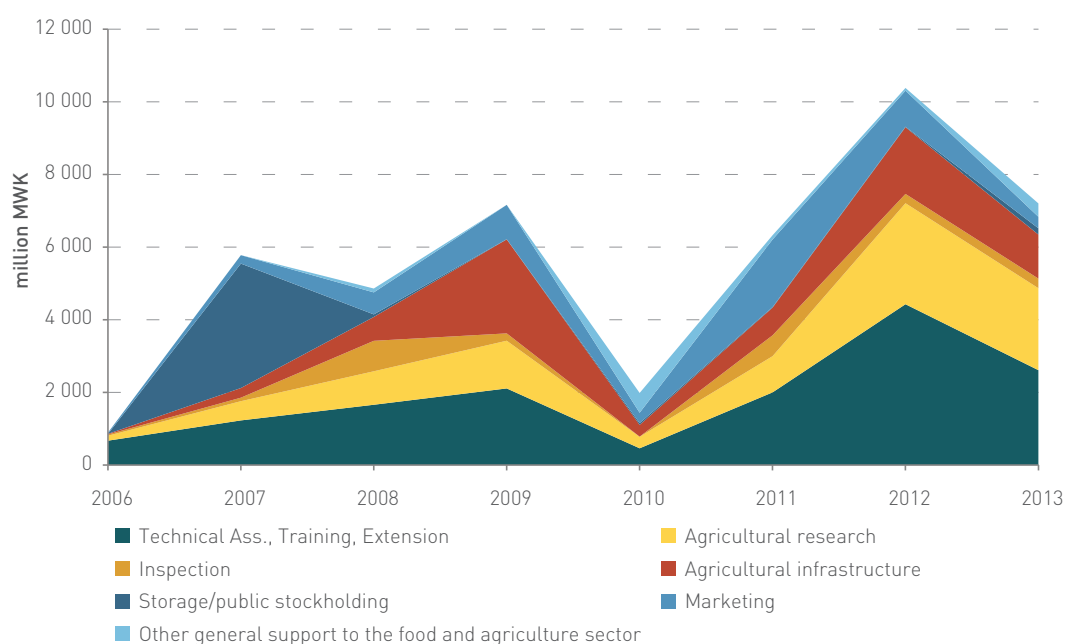
Source: Authors' calculations, 2014

Among categories encompassed in the general support to food and agriculture, technical assistance, training, extension, and agricultural research were the main targeted categories. These four categories accounted for more than 50 percent of general support to agriculture. Agricultural infrastructure, marketing,

storage, inspection are the categories receiving the lowest share of expenditure allocated to general support to agriculture.

The main form of general support is spending on transfer of knowledge and skills, namely, training (64 percent of expenditures), extension (32 percent) and technical assistance (4 percent) (Figure 62).

Support to agricultural research represented 21 percent of the general support with an average annual growth rate of about 30 percent over the period. As with the general support to agriculture, the level of expenditure allotted to agricultural research decreased in 2010 and 2013.

The Agricultural Science & Technology Indicators (ASTI) initiative, implemented by the International Food Policy Research Institute (IFPRI), enables the measurement

of the public spending allocated to agricultural research. ASTI data refers to public spending allotted to agricultural research, namely, salaries, operational costs, programme expenditures and capital investments. This includes expenditures for research activities within national institutions, higher education and non-profit education (ASTI, 2014). Data reported by ASTI are on average higher than data collected by MAFAP in absolute and relative terms (share of agricultural GDP) (Figure 63). This could be explained by the fact that the MAFAP methodology distinguishes and excludes administrative costs from policy transfers, while ASTI includes the administrative costs related to agricultural research. Moreover, only on-budget expenditures were included in the MAFAP public expenditure analysis, while ASTI collects all types of public expenditures whether on- or off-budget.

FIGURE 63. **AGRICULTURAL RESEARCH SPENDING FROM ASTI AND FROM MAFAP IN ABSOLUTE VALUE (LEFT AXIS) AND AS SHARE OF AGRICULTURAL GDP (RIGHT AXIS)**
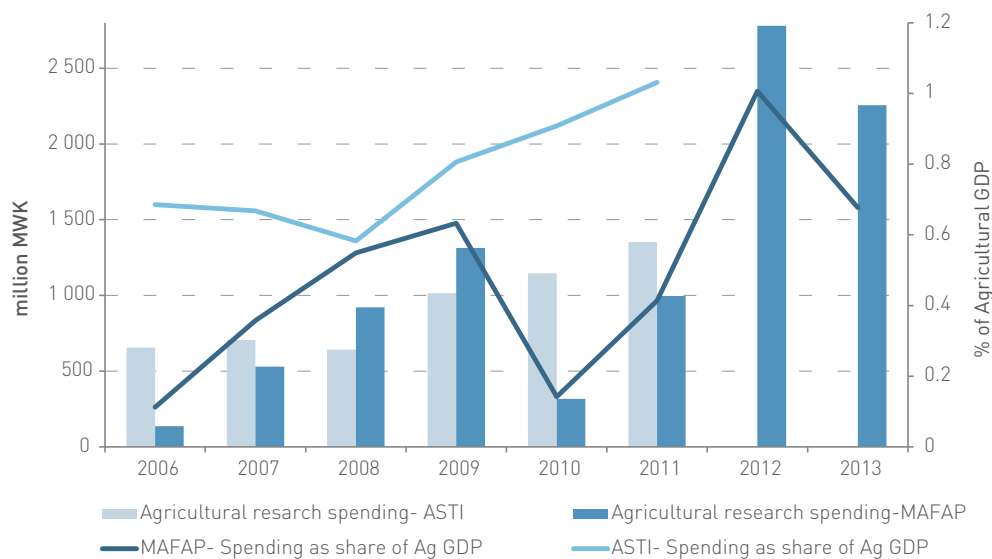
Source: ASTI, 2014 and Authors' calculations, 2014
Note: The ASTI database includes data for the period 2000- 2011

Expenditure allocated to agricultural infrastructure is the third component of general support to agriculture. The category is composed of feeder roads, off-farm irrigation and other off-farm infrastructure. The main targeted category is off-farm irrigation, representing three quarters of spending allocated to agricultural infrastructure (Figure 64). Off-farm irrigation refers to collective support to irrigation development and diverges from on-farm irrigation, which is included in the category "Payments to producers". Off-farm irrigation was particularly high in 2009, with the implementation

of the small farm irrigation project implemented by the Ministry of Irrigation and Water Development and funded by the Arab Bank for Economic Development in Africa (BADEA). With regards to expenditures allocated to feeder roads, they are probably underestimated as most of the expenditure incurred by the Road Fund Administration was included in the rural infrastructure category due to the lack of specific information needed to distinguish feeder roads from rural roads.

FIGURE 64. **COMPOSITION OF EXPENDITURES ALLOCATED TO AGRICULTURAL INFRASTRUCTURE, AVERAGE 2006–2013**

74% ● Off-farm irrigation

11% ● Feeder roads

15% ● Other off-farm
      infrastructure
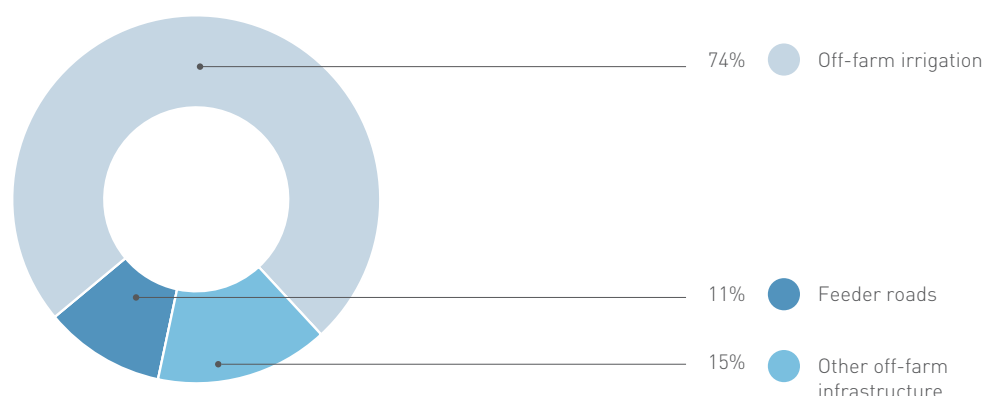
Source: Authors' calculations, 2014

Expenditures allocated to the development of marketing activities represented 12 percent of general support to agriculture, expanding in 2011 with the development of the Cooperative Development and Management programme implemented by the Ministry of Industry, Trade & Private Sector Development. Expenditures towards storage and public stockholding were low during the period (8 percent of the general support to agriculture) but witnessed an increase in 2007 with spending used to restock the National Food and Reserve Agency (NFRA). Animal and vegetal inspection amounted to 5 percent of the general support to agriculture.

In summary, agriculture was mainly supported through payments to producers in the framework of the FISP. General support represented only 20 percent of specific agricultural spending, with more than half of the general support allocated to training, technical assistance, extension and agricultural research. The level of spending allocated to the FISP experienced an increasing trend but dropped in 2011, when national funds declined. General support to agriculture increased, but also experienced two significant declines in 2011 and 2013, when support from donors fell.

Agriculture-supportive public expenditures

- Agriculture-supportive expenditures accounted for 16 percent of PEFA.

- Development of rural roads is highly targeted, capturing 23 percent of PEFA and 4 percent of total government spending.

Using MAFAP methodology, it is possible to capture each agriculture-supportive public expenditure measure. This includes expenditures having an impact on agricultural development but which do not directly target agriculture. Agriculture-supportive expenditures accounted for an average 16 percent of PEFA (Figure 57), indicating that priority was given to direct spending for sector development.

Agriculture-supportive expenditure is composed of four categories: rural education, rural health, rural infrastructure and other support to the rural sector. Rural infrastructure accounted for 91 percent of the

agriculture-supportive expenditure. This large share could be partially explained by the fact that the analysis only includes expenditures towards rural education and health, while it is likely that education and health are targeted through global programmes implemented not only in rural areas. Thereby, rural education represented only 0.3 percent and rural health 1 percent of agriculture-supportive spending over the period.

Expenditures allocated to rural infrastructure are composed of rural roads, rural water and sanitation, rural energy, and "other". Rural roads amounted to 90 percent of spending allocated to rural infrastructure

(Figure 65). As with expenditure targeting rural health and education, the programmes and projects aiming at developing energy, water and sanitation identified in the framework of the analysis, covered both rural and urban areas. Therefore, they were not included in the analysis and rural water & sanitation and rural energy expenditure accounted for only 5 and 1 percent of expenditures in support of rural infrastructure, respectively.

FIGURE 65.   COMPOSITION OF RURAL INFRASTRUCTURE EXPENDITURES, AVERAGE 2006–2013

90%   Rural roads

4%   Other rural infrastructure

1%   Rural energy

5%   Rural water and sanitation
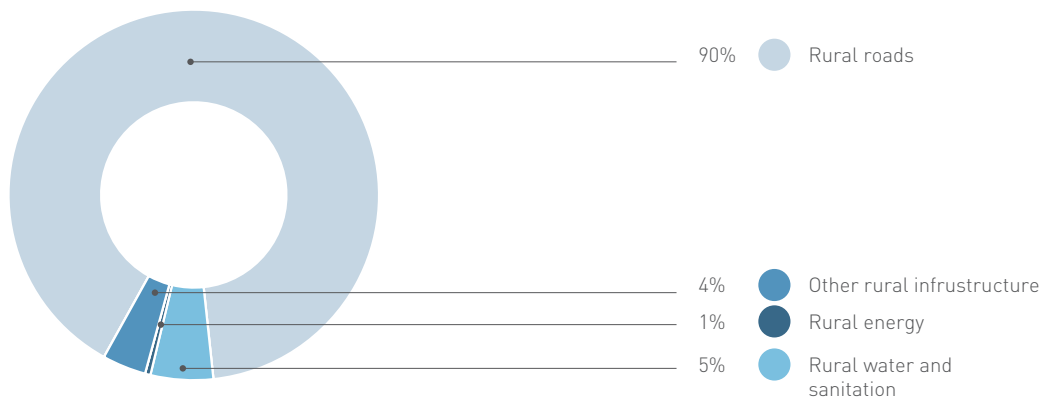
Source: Authors' calculations, 2014

Road development was firmly targeted during the period under review, representing 86 percent of agriculture-supportive expenditure, 23 percent of PEFA, and 4 percent of the government budget. It refers mainly to projects implemented by the Road Fund Administration, whose mandate is to construct rural roads. The World Bank Public expenditure review (2013) showed that roads dominate transport expenditures with 22 projects per year targeting road construction and rehabilitation in rural areas.

Public expenditures on key commodities

- Maize attracted 50 percent of PEFA on average during the reviewed period; production was primarily supported through the provision of variable input subsidies in the framework of the FISP.

- Other commodities important for food security such as cassava and sweet potatoes were barely targeted.

- Although FISP stopped targeting tobacco production in 2009, tobacco was the second commodity targeted during the period under review. Like maize, tobacco was exclusively supported through the provision of input subsidies.

- Unlike tobacco, cotton and sugar received more diversified albeit sporadic support. The share of expenditure allocated to both commodities together represented only 2 percent of agriculture-specific expenditure.

- Although tea is the third agricultural export product, it was not targeted by public expenditures at all.

Through MAFAP analysis, it is possible to identify, among agriculture specific spending, expenditures allocated to single commodities, to groups of commodities and in support of all commodities. In Malawi, priority is given to the support of individual commodities (Figure 66) with 75 percent of agriculture-specific expenditure allotted to single commodities. The level of support to groups of commodities and non-targeted support remained low compared in comparison.

Regarding single commodities, maize is by far the first targeted commodity (Figure 67). Maize represented 69 percent of agriculture-specific spending and accounted for 50 percent of PEFA, over the 2006–2013 period.

FIGURE 66. COMPOSITION OF AGRICULTURE SPECIFIC EXPENDITURES
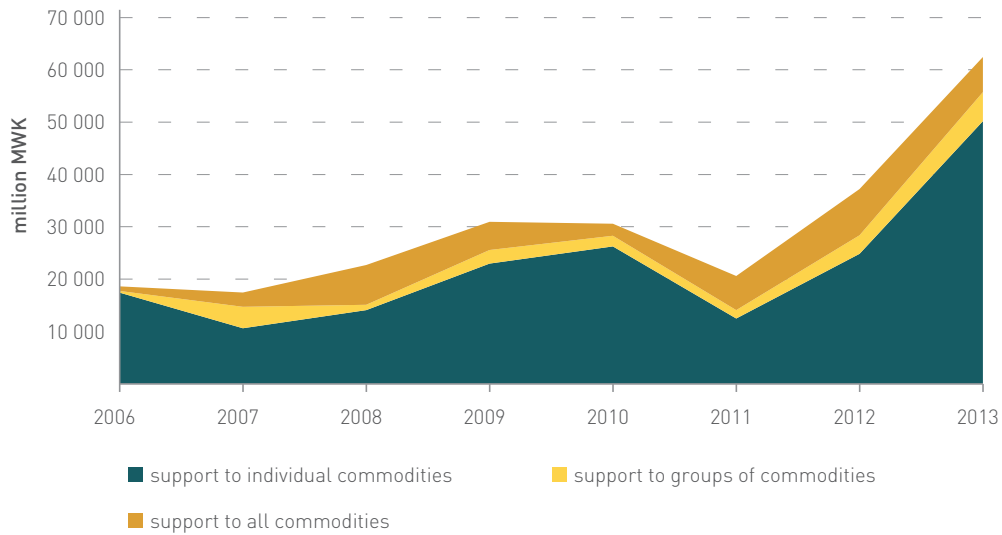
Source: Authors' calculations, 2014

FIGURE 67. PUBLIC EXPENDITURES ALLOCATED TO SINGLE COMMODITIES*
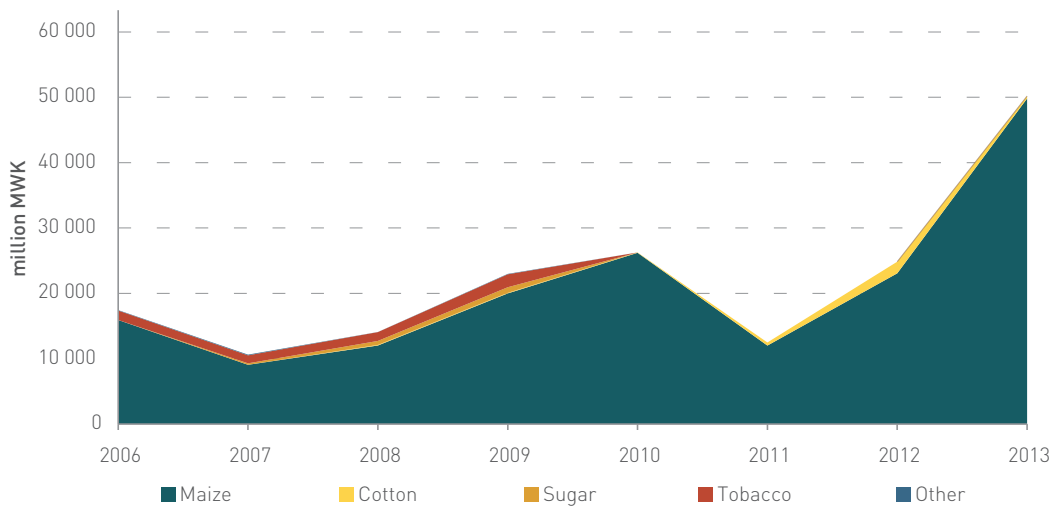
Source: Authors' calculations, 2014

Note: "Other" includes macadamia, poultry, wheat and cassava.

Maize was targeted mainly through the provision of variable input subsidies in the framework of the FISP as 91 percent of variable input subsidies expenditure targeted maize (Figure 68).[42] Since maize represented a major part of FISP expenditures, maize and FISP expenditures followed approximately the same trend with an average annual increase of 20 percent (CAGR) between 2006 and 2013.

In 2006, the maize sector was also targeted by income support through national purchases of maize. This explains the higher level of maize expenditures in 2006 compared to 2007, while on the other hand, FISP expenditures were lower in 2006 than 2007 (Figure 68).

Concerning other single commodities supported by public expenditure, tobacco is the second targeted commodity (Figure 67 and Figure 69). Despite tobacco being the first export product (average 2005–2012), it

only received support from FISP from 2006 to 2009. During this period, average expenditure on tobacco represented 7 percent of agriculture-specific expenditure.

The third single commodity targeted by public expenditure is cotton, the fourth export in terms of value (average 2005–2012). Cotton production received support from 2008 to 2013 and accounted for only 1 percent of specific agriculture expenditures on average during this period. Contrary to tobacco and maize, the cotton sector was supported through different programmes and projects and not only through input subsidies. Two main projects were recorded: the "Promotion of Cotton Production" project implemented by the MoAFS and the "Cotton Strengthening" project, implemented by the Ministry of Industry, Trade & Private Sector Development. Expenditures towards the "Promotion of Cotton Production" project were recorded from 2008 to 2013 while "The Cotton Strengthening" project was implemented in 2011. The cotton sector was mainly supported through extension and training (Figure 70). The FISP also targeted cotton production in 2008 and 2009 but the share of expenditure allocated to cotton in the framework of the FISP could not be identified.

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[42] Total expenditures allocated to the FISP were systematically collected in the annual budget books. However, no information on the level of expenditure allocated per commodity in the framework of the FISP was provided. Therefore, in order to identify the amount allotted to each commodity, we used an estimation made by Chirwa & Dorward, 2013. They estimated the volume of seeds and fertilizers allocated per commodity. The share allocated per commodity within total volume was used to determine the share of expenditure allocated per commodity within total FISP expenditure.

FIGURE 68.   **EXPENDITURES ALLOCATED TO VARIABLE INPUT SUBSIDIE**
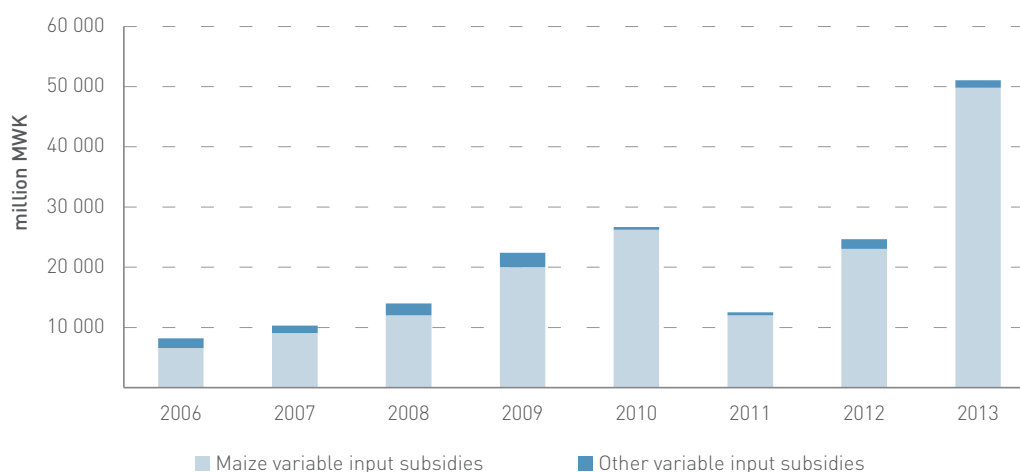
Source: Authors' calculations, 2014

Sugar, the fourth commodity targeted by public expenditure, is the second export product in terms of value (average 2005–2012). The sector was only supported from 2007 to 2009 through the "Smallholder Out-grower Sugar Cane" project, which received contributions from the European Union (EU) and the African Development Bank (ADB). The main components

of the programme were the provision of variable inputs, on and off-farm irrigation and training.

Other single commodities targeted include important products for food security such as cassava, wheat and poultry, but also cash crops like macadamia, although amounts allocated to these commodities were sporadic and low (less than 50 million MWK).

FIGURE 69. PUBLIC EXPENDITURES ALLOCATED TO SINGLE COMMODITIES EXCEPT MAIZE
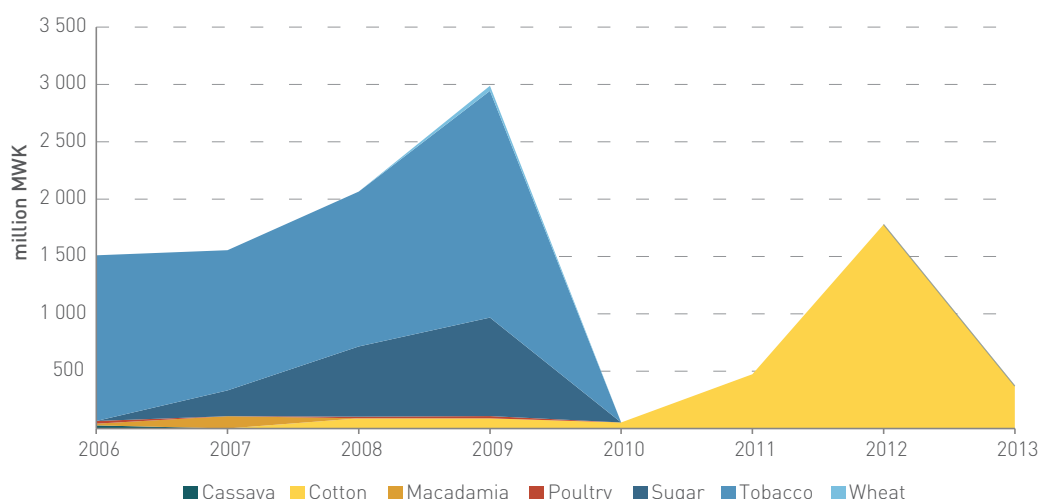
Source: Authors' calculations, 2014

FIGURE 70. COMPOSITION OF THE SUPPORT TO THE COTTON SECTOR, AVERAGE 2008–2013
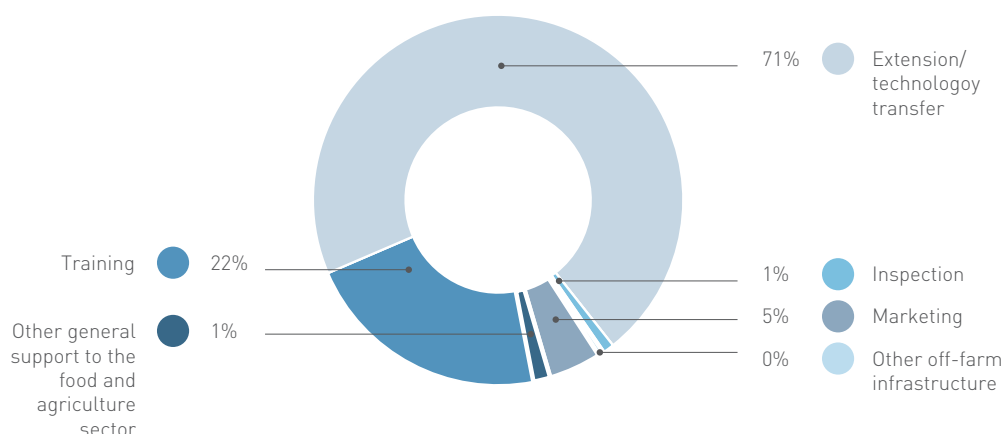
Source: Authors' calculations, 2014

It is interesting to observe that, although cassava was the first commodity in terms of volume of production during the period, support to cassava was limited (Figure 71). Moreover, cassava, together with maize, is among the main commodities important for food security. Three projects targeting cassava were recorded, showing a more diversified support to production than maize. As mentioned previously, maize is almost exclusively targeted through the provision of input subsidies to boost production and no interventions strengthening value chain integration and agri-business development are foreseen in the current national policy strategies. Other commodities are relevant in terms of production, such as sweet and Irish potatoes, but there were only one project targeting these commodities according to our analysis.[43]

Tobacco was the main cash crop supported during the period under review, despite the suspension of the provision of input subsidies to tobacco producers in 2009 under the FISP. Although discontinuous, the level of the support is consistent with the fact that tobacco is the first export commodity, accounting for more than 60 percent of the value of total agricultural exports.

[43] In 2007 and 2008, the "Cassava and Sweet Potatoes production" project was implemented with funds from USAID.

Cotton is the second cash crop supported by public expenditures, while it is the 4th commodity in terms of export value. Such support is coherent with the NES, which aims at boosting oil seed production, including cotton seed oil. As mentioned previously, more diversified support to cotton is observed, with two main projects targeting production.

Although it is the third export product in terms of value, no expenditure towards the tea sector was recorded (between 2005 and 2013).

FIGURE 71.   **AVERAGE VOLUME OF PRODUCTION, AVERAGE EXPENDITURES ALLOCATED PER COMMODITY, NUMBER OF PROJECT OR PROGRAMMES TARGETING EACH COMMODITY*, AVERAGE 2006–2013**
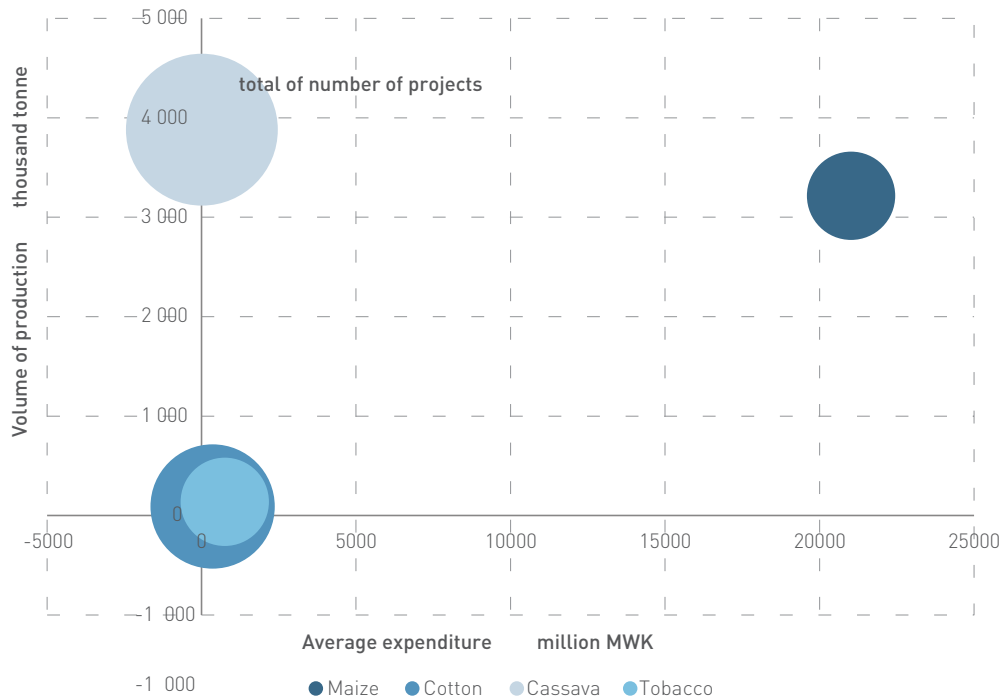
Source: Authors' calculations, 2014 and AMIS, 2014

*Note: For cassava, the cassava and sweet potatoes production project was included despite the fact that the project does not only focus on single commodity.

Regarding targeted groups of commodities, no priority could be clearly identified since various groups received support (Figure 72). At the beginning of the period, cereals and more precisely storage of cereals were strongly targeted, absorbing about 20 percent of agriculture-specific expenditure. The 2007 peak corresponds to the grain restocking of the NFRA in order to increase the level of public storage.

Then, the second group of commodities targeted during the period was livestock, with production regularly supported throughout the period and representing 1.2 percent of agriculture-specific expenditure. Numerous projects and programmes supporting livestock production and marketing were recorded. Payments to producers through on-farm services, variable inputs and on-farm capital, were the major instruments used in order to boost the livestock sector and represented 80 percent of the expenditures allocated to the livestock sector (Figure 73). Compared to the direct support to producers, support to marketing or inspections were minor.

Expenditures allotted to the crop sector[44] increased with the implementation of the Smallholder Crop Production and Marketing programme in 2011. Nonetheless, expenditures for crops production remained low, with an average 1.2 percent of agriculture specific expenditures between 2006 and 2013.

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[44]   Several programmes targeted crops but the type of crops was not specified.

FIGURE 72. **PUBLIC EXPENDITURES ALLOCATED TO GROUP OF COMMODITIES***
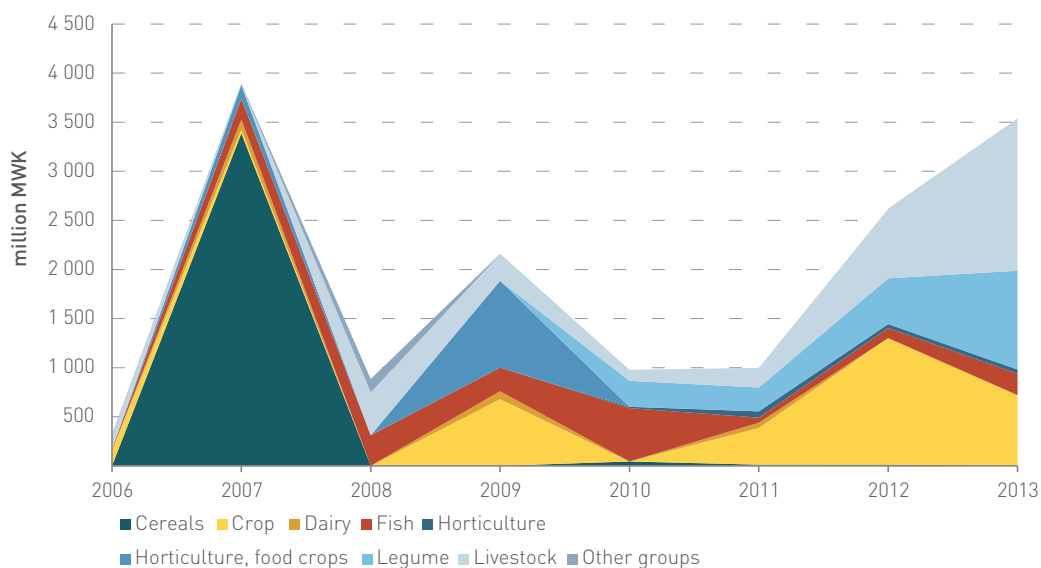
Source: Authors' calculations, 2014

Note: Other groups include cassava and sweet potatoes, forestry, fruit, horticulture and crops, livestock and crops and macadamia and cotton.

FIGURE 73. **COMPOSITION OF EXPENDITURES ALLOCATED TO LIVESTOCK, AVERAGE 2006–2013**
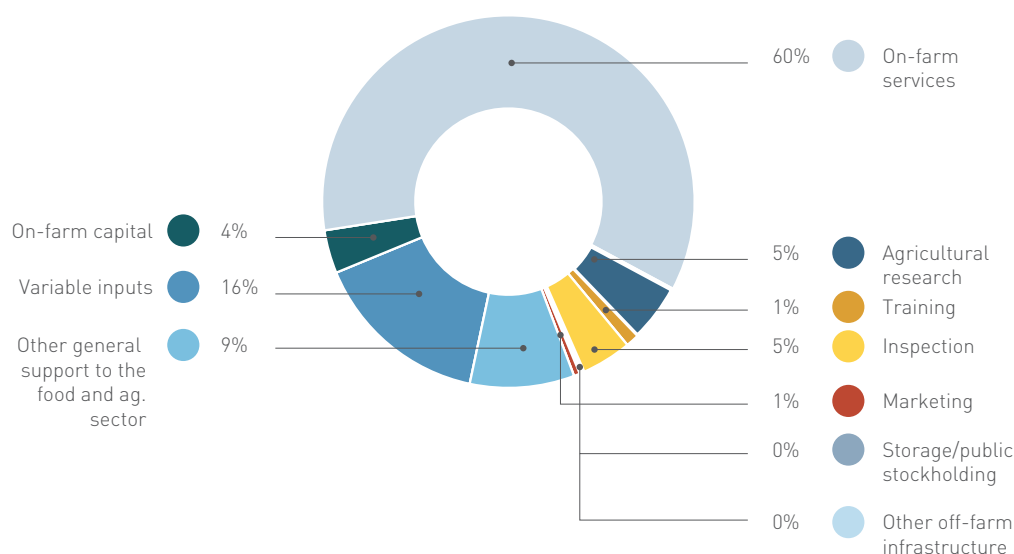
Source: Authors' calculations, 2014

Fish production and commercialisation was targeted by numerous projects and programmes but accounted for less than 1 percent of agriculture-specific expenditure. Contrary to livestock which is mainly supported through on-farm services; support to the fish sector was more diversified, with projects and programmes aiming at supporting production through the provision of capital and variable inputs as well as processing and marketing.

Over the period, expenditures towards legumes were low. However, growing expenditures were recorded owing to the fact that the FISP started to target legumes in 2010. Between 2010 and 2013, expenditures allotted to legumes accounted for 1.3 percent of agriculture-specific expenditures on average.

At the beginning of the period, horticulture was targeted by the Horticulture and Food Crop Development project (2006–2009). In 2010, a more focused programme was

implemented to develop the horticultural sector, namely, the Horticultural and Floricultural Export Project.

In summary, support to maize production and productivity captured the major share of agriculture-specific expenditure through the FISP. Such focus leaves little room to support other commodities or groups of

commodities, not to mention other interventions aimed at value chain development. Other commodities and groups of commodities were targeted through various projects and programmes but the amount remained insignificant compared to the budget allocated to maize input subsidies.

Nature of PEFA

- Recurrent expenditure exceeded development expenditure between 2006 and 2013. The relatively high operational budget compared to investment expenditure shows the constraints for the government to invest in the agricultural sector.

- Donors contributed exclusively to development expenditures and since donor aid declined in 2010, so did development expenditures.

The MAFAP methodology distinguishes policy transfers from administrative costs. Policy transfers are all budgetary transfers that are associated with a good or a service supporting the agricultural sector, including salaries of extension workers. On the other hand, MAFAP counts as administrative costs all expenditures that correspond to the functional costs of Ministries such as office infrastructure, wages of Ministry staff at central level or policy design costs.

Administrative costs recorded are low compared to the budget allocated to policy transfers (Figure 74), amounting to 5 percent of the total PEFA. Administrative costs according to the MAFAP definition are limited since the category does not include administrative costs incurred in the framework of projects or programmes.

FIGURE 74. **COMPOSITION OF PEFA: POLICY TRANSFERS VS. ADMINISTRATIVE COSTS**

■ Public expenditures on agriculture and rural development (policy transfers)
■ Identifiable administrative costs
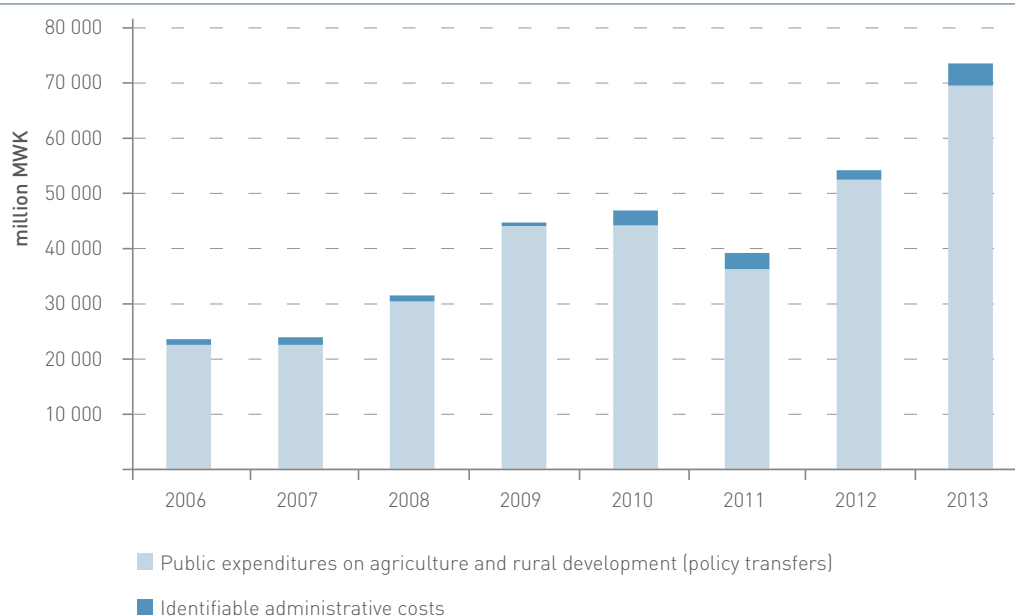
Source: Authors' calculations, 2014

The distinction between recurrent and development expenditures is made based on the information provided in the budget books. In most cases, administrative costs

corresponded to recurrent expenditures. Recurrent expenditures are entirely financed by national funds, whereas donors contribute exclusively to development

expenditure. Although the share of recurrent expenditure within total PEFA witnessed a decline between 2006 and 2009, the share significantly increased in 2009 due to the suspension of aid from donors. A similar situation is observed in 2013. Recurrent expenditures exceeded development expenditures and accounted for 63 percent of total PEFA.

Recurrent expenditures correspond to regular support to the sector and refer to the operational budget. Thus,

the low level of development expenditures shows the limited leeway that the government can use to invest in agriculture and to ensure the development of the sector. This also affects the capacity of the government to react and the ability to annually tailor expenditures in a way that is consistent with national needs and priorities. In addition, development budget is subject to variation since it relies on donor funding and therefore donor priorities. The situation experienced in 2010 and 2013 reflects this challenge.

FIGURE 75. COMPOSITION OF PEFA*: RECURRENT EXPENDITURES VS. DEVELOPMENT EXPENDITURES (LEFT AXIS) AND RECURRENT EXPENDITURES AS A SHARE OF TOTAL EXPENDITURES IN SUPPORT OF FOOD AND AGRICULTURE (RIGHT AXIS)
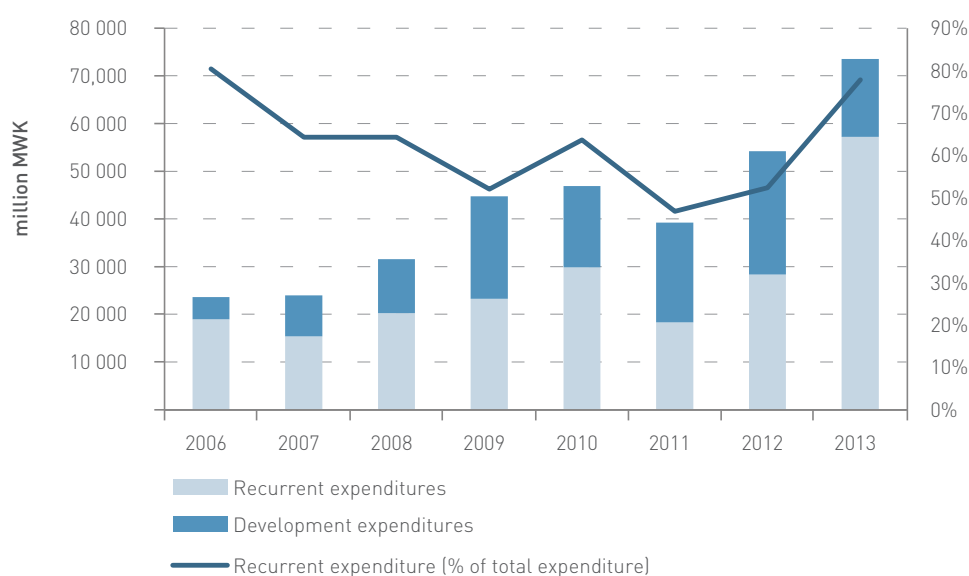
Source: Authors' calculations, 2014

Note: This includes policy transfers and administrative costs.

Role of development aid in PEFA

- On average, donor spending represented 19 percent of PEFA during the period under review. However, the share and level of donor contributions experienced significant variations since donors suspended aid in 2010, 2011 and 2013.

- Donors contributed to about 50 percent of both the general support to the agriculture sector and to agricultural-supportive expenditures. Given this high share, sustainability and stability of the support to the agricultural sector is somehow questionable.

- The contribution of donor spending to agricultural research expenditures reached 86 percent.

PEFA covered by the analysis are composed of national spending and on-budget donor expenditures. As mentioned previously, off-budget donor expenditures were not included in the analysis due to a lack of qualitative information to classify the off-budget

support. According to the World Bank, off-budget support represented 25 percent of the total agricultural expenditures (World Bank, 2014).

Donor support represented 19 percent of PEFA during the period under review; nonetheless, it should be mentioned that the share of donor support varied widely and in several cases was suspended entirely between the years 2010 and 2013. For example, donor contributions accounted for 37 percent of total PEFA in 2007, while this percentage was only 6 percent in 2013 (maximum and minimum). Indeed, while the share of donor spending increased between 2006 and 2009, it strongly declined in 2010 and again in 2013 (Figure 76).

FIGURE 76. COMPOSITION OF TOTAL PEFA BY SOURCE OF FUNDING (LEFT AXIS) AND DONOR EXPENDITURES AS A SHARE OF PEFA (RIGHT AXIS)
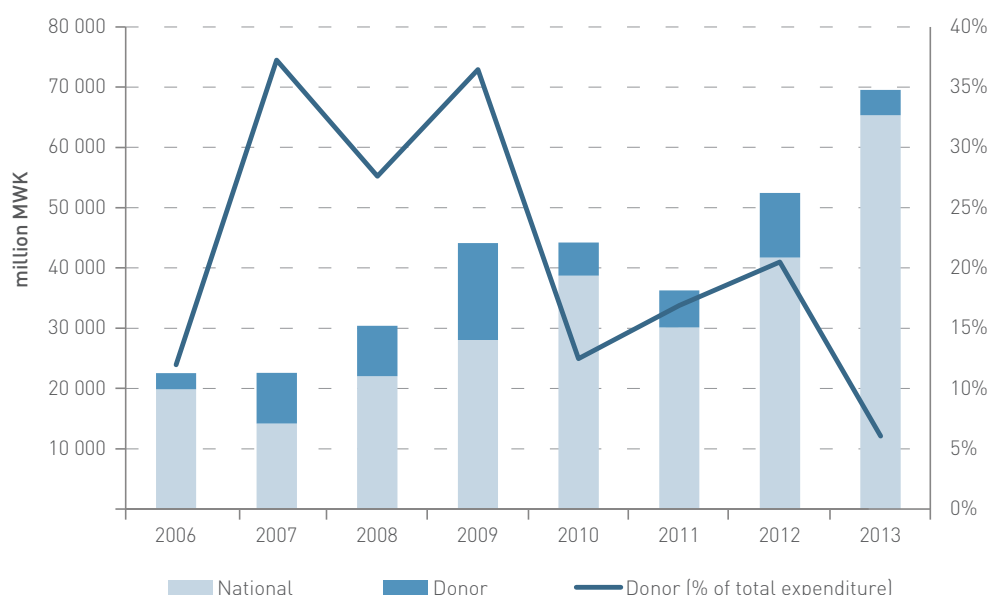
Source: Authors' calculations, 2014

The particularly low disbursement rates in 2010, 2011 and 2013 reflect the decision taken by donors to suspend their on-budget support due to the deteriorating governance (Figure 77). The average disbursement rate was 49 percent during the period under review but it decreased to 22 percent in 2010 (Table 20). This situation affected the overall level of support to the agricultural sector in 2010. However, as mentioned by the World Bank (2014), off-budget expenditure more than doubled in 2009/10. This is because donors shifted from on-budget to off-budget support from 2010 onward in reaction to the governance issues which had affected donor contributions in the past.

While the budgeted amount of PEFA increased by 25 percent between 2009 and 2010, actual spending remained stable because the government managed to compensate for the decline in donor spending. This is reflected by the high disbursement rate of national spending of 114 percent in 2010. A similar situation is observed for 2013. In that year, the government allocated additional funds compared to the initial budgeted amount and the disbursement rate of national spending reached 105 percent (Table 20).

FIGURE 77.   BUDGETED AND ACTUAL DONOR PEFA (LEFT AXIS) AND DISBURSEMENT RATE (RIGHT AXIS)
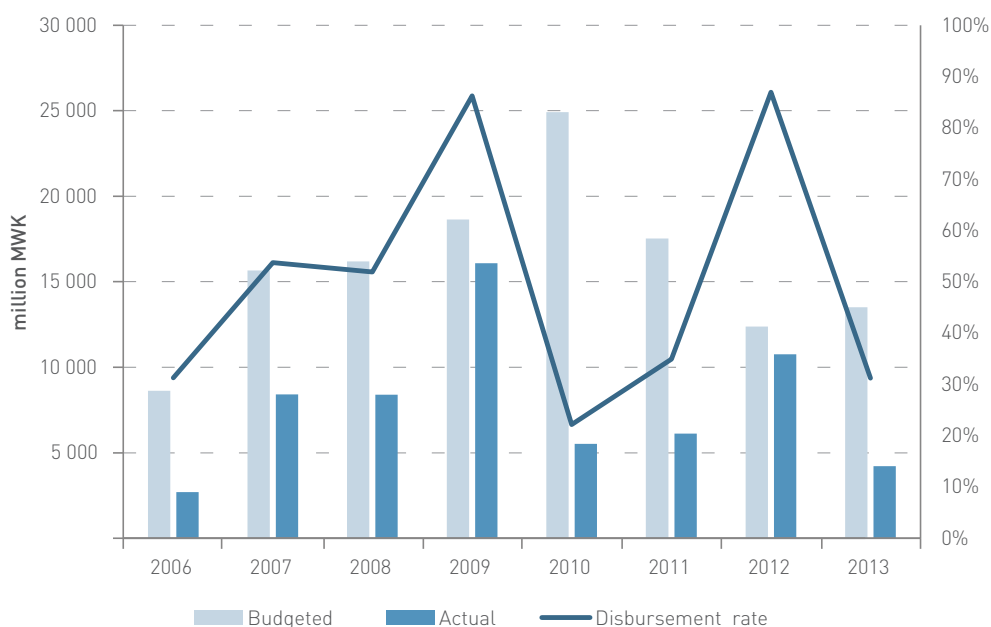
Source: Authors' calculations, 2014

TABLE 20.   TOTAL PEFA BY SOURCES, BUDGETED AND ACTUAL SPENDING AND DISBURSEMENT RATE

		2006	2007	2008	2009	2010	2011	2012	2013	AVG
Donor	Budgeted amount (million MWK)	8,625	15,660	16,188	18,647	24,911	17,534	12,372	13,507	15,931
	National spending	2,698	8,413	8,403	16,084	5,515	6,125	10,752	4,212	7,775
	Disbursement rate (%)	31	54	52	86	22	35	87	31	49
National	Budgeted amount (million MWK)	14,530	13,086	17,279	28,127	34,015	45,878	42,651	62,257	32,228
	National spending	19,867	14,177	22,022	28,041	38,702	30,145	41,713	65,322	32,499
	Disbursement rate (%)	137	108	127	100	114	66	98	105	101

Source: Authors' calculations, 2014

As mentioned previously, several institutions measure the level of donor spending allotted to food and agriculture (Figure 78). The ODA recorded in the CRS database and computed by the OECD compiles expenditures reported by donors through all channels (public sector, multilateral organization, NGO and Private-Public Partnership). The ODA database however does not distinguish on and off-budget support. This explains the systematically higher level of support reported in the CRS database[45] compared to the MAFAP

database (Figure 78). Data collected by the Ministry of Finance in the framework of the Aid Management Platform is based on information reported by donors, which could explain the discrepancies with the MAFAP database. Concerning data collected in the framework of the World Bank Agriculture Public Expenditure Review, data corresponding to donor contributions to the development budget of the MoAFS was selected to allow for comparison. Since donor support to other ministries is not included, the level is systematically lower than data collected in the MAFAP database.

The share of donor contribution strongly differs across categories. For example, donor contribution to payments to agents amounted to only 3 percent of

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[45]   Data from the CRS database are expressed in USD. The high peak in 2012 is explained by the fact that in 2012, expenditures in USD more than doubled. Moreover, the floating exchange rate implemented in 2012 led to a strong increase in the exchange rate level.

these payments (Figure 79). Donors tended to focus on general support to agriculture with a contribution of 54 percent. Within this category, donors strongly targeted agricultural research, providing 86 percent of the

funding. Moreover, donors contributed to agriculture-supportive expenditure, namely, rural infrastructure, rural health and rural education, with support amounting to 42 percent of agriculture-supportive expenditure.

FIGURE 78.   **ACTUAL DONOR EXPENDITURES FOR FOOD AND AGRICULTURE BY SOURCE**

■ MAFAP   ■ Aid Management Platform- Min Finance   ■ Ag PER- World Bank   ☐ ODA-CRS
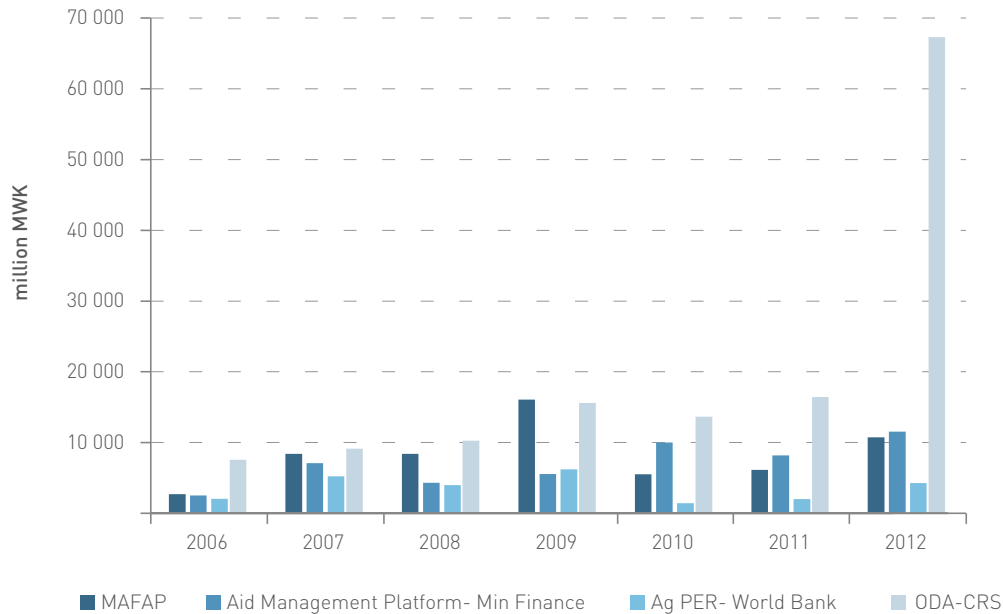
Source: Authors' calculations, 2014

FIGURE 79. SHARE OF AID IN TOTAL PUBLIC EXPENDITURES BY CATEGORY AND DONOR SPENDING WITHIN TOTAL EXPENDITURE, AVERAGE 2006–2013
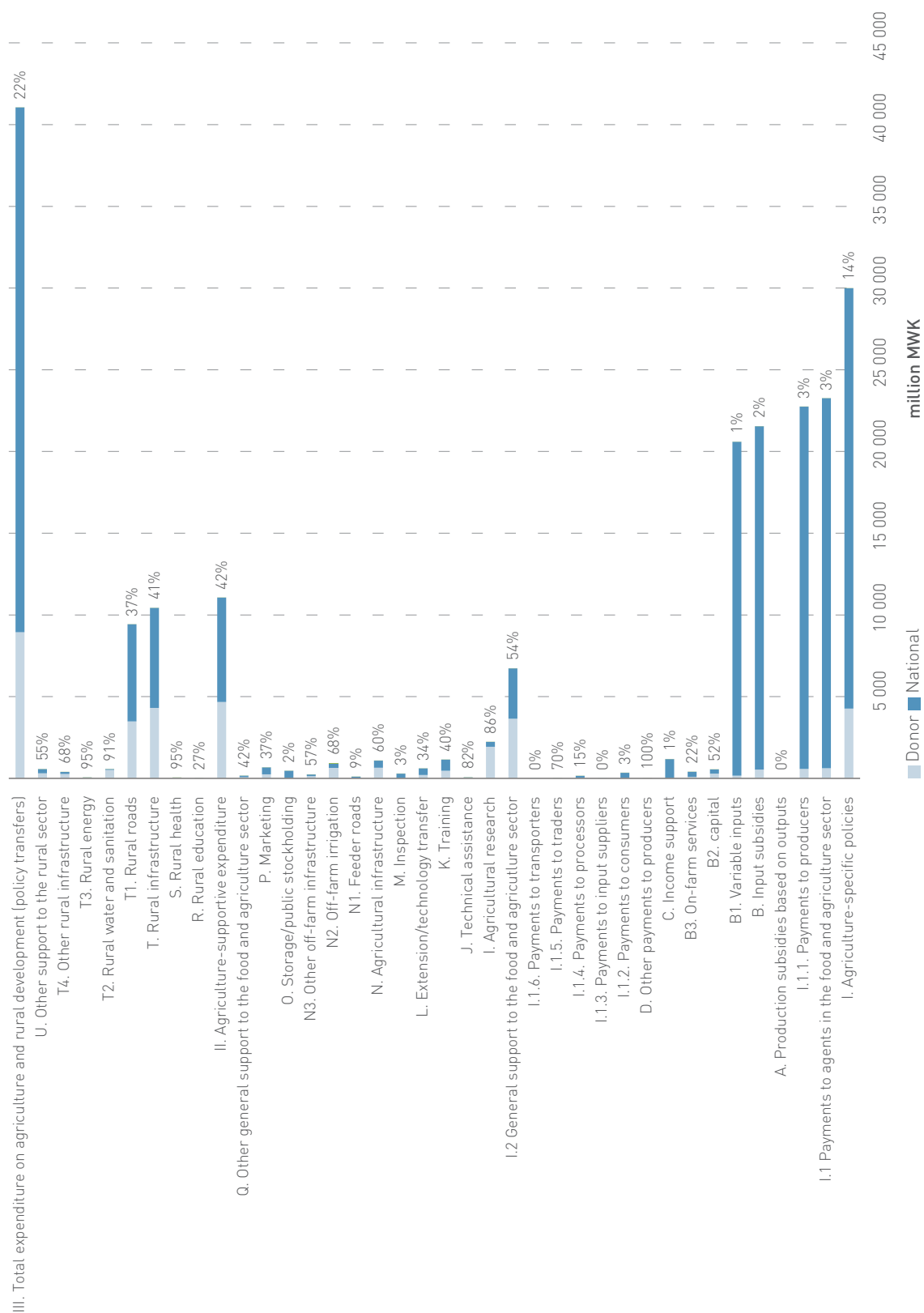
Source: Authors' calculations, 2014

The suspension of aid from donors significantly impacted the level of spending of general support to the sector and to agriculture-supportive expenditure (Figure 80). While the government ensured direct specific support to agriculture, the level of general support was uneven during the period, impeding the implementation of programmes and projects that would benefit the sector as a whole. This also reflects the challenges in the implementation of long-term programmes and projects.

FIGURE 80. **COMPOSITION OF DONOR EXPENDITURES TO FOOD AND AGRICULTUREA**
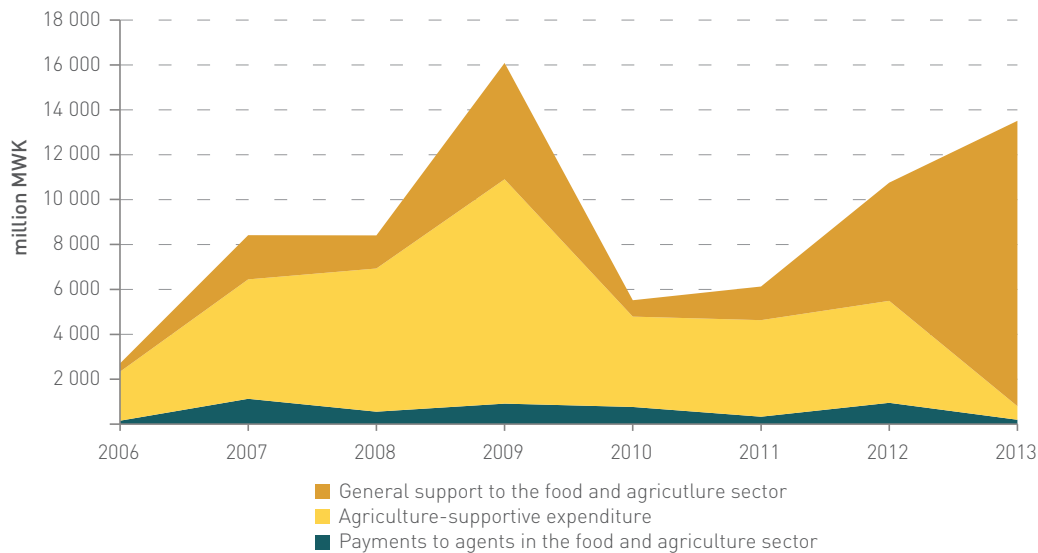
Source: Authors' calculations, 2014

6.4 Conclusions and recommendations on public expenditure analysis

While the government budget increased steadily during the 2006–2013 period, PEFA witnessed uneven growth. This reveals the vulnerability of the agricultural budget to internal and external shocks compared to other sectors. The period 2010–2013 was particularly challenging for the government since donors interrupted their support due to deteriorating governance, while a decline in export earnings also led to a reduction of the national budget. The Malawian authorities seemingly chose to reallocate the dwindling funds to non-agricultural sectors even though it is acknowledged that agricultural spending has the largest positive effects on growth and poverty reduction (IFPRI, 2009).

Despite the uneven, sometimes declining (2009–2011) level of expenditure in support of food and agriculture, agricultural growth was not immediately affected. This could show some inelasticity of agricultural growth with regards to public expenditures, while other variables, such as weather conditions, play a major role. However, more detailed econometric analysis would be needed to understand the correlation between performance of the sector and level of public expenditure since lagged effects could then be observed.

In terms of development of the food and agricultural sector, priority is given to the direct and individual support to producers, namely, the provision of private goods at the expense of the general support to the sector. Indeed, the development of the food and agricultural sector is chiefly supported with the provision of input subsidies in the framework of the FISP. The FISP accounted for 57 percent of PEFA and 9 percent of the government budget. Given the importance of the FISP in terms of budget, this leaves little room for non-FISP development expenditures. The implementation of the FISP met the basic needs of the Malawian population, namely, boosting maize production by increasing productivity, yet prevented the implementation of projects and programmes aiming at the long-term development of the sector. Moreover, the implementation of the FISP

suffered corruption and distortions that reduced the efficiency of the programme (World Bank, 2013). The dependence on recurrent FISP expenditures also affects the ability of the government to react and to tailor expenditures in a manner that is consistent with national needs and priorities. Whether a more diversified form of support, both in terms of sub-sectoral targeting and types of measures adopted, would have the impact needed to boost the agricultural sector and contribute to the achievement of Malawi's overall economic and trade objectives, is a question that must be addressed with due consideration. An analysis of the costs and benefits of a more balanced budget structure, aiming at both supporting individual producers and the sector as a whole, would be the first step in such an undertaking.

General support expenditures, which benefit the sector collectively, only accounted for 20 percent of PEFA, more than half of which was contributed by donors. Therefore, general support witnessed a decline in 2010 and 2013 in the context of the aid suspension from donors who shifted from on-budget to off-budget support from 2010 onwards, inducing fragmentation of aid and a loss of control over spending (World Bank, 2013). This created growing uncertainty with regards to the alignment of donor spending with national political priorities. A more balanced distribution of national spending between both payments to agents and general support and between recurrent and development budget is needed in order to avoid uneven and sporadic resources on general sector support, an essential type of expenditures to develop agriculture in the long run. Investments in public goods show higher returns than other types of expenditure such as general subsidies (FAO, 2012).

Expenditures allocated to agricultural research accounted for 3 percent of PEFA. Donors contributed to 86 percent of the agricultural research expenditure for the same period. Increasing national spending towards agricultural should be a top priority for the Government. Investment in agricultural research and development has been one of the most effective forms of public investment over the past 40 years (FAO, 2012).

Priority is also given to rural road development, representing 23 percent of PEFA. This is consistent with the need to improve road infrastructure since the poor quality of the feeder roads has a significant bearing in transport cost in Malawi (World Bank, 2009). Furthermore, spending on rural roads also has

a significant effect on growth and poverty reduction (IFPRI, 2009). Good road mapping and understanding of agricultural trade flows are required to ensure that the priorities in terms of road development are respected. Moreover, there is a need to focus on enhancing feeder roads rather than the trunk network.

Maize production captured the major share of agriculture-specific expenditure, exclusively through the provision of input subsidies in the context of FISP. Other types of support to the maize value chain that would ensure increased and more sustainable production in the long term include support to processing, marketing and storage. Since the implementation of the FISP, land allocated to maize production increased at the expense of other crops (IFPRI, 2011). Furthermore, the focus on maize leaves little room to support other commodities or groups of commodities that are also of major importance for food security and which are relatively drought-tolerant such as cassava and sweet potatoes (IFPRI, 2011). From 2006 to 2013, these two commodities were barely targeted by public spending. Such strong attention to maize leaves to question the possibility of achieving the ASWAP crop diversification objective. Therefore, there is a need to reconsider the FISP focus and approach to boost overall agricultural productivity.

7. Coherence between incentives and policy objectives

MAFAP monitors food and agricultural policies through a set of indicators that focus on market price incentives and public expenditure. Using these indicators, a preliminary assessment of alignment between policy objectives, policy measures (including public expenditure) and their impact on price incentives for producers and wholesalers was carried out for Malawi.

The analysis covers a nine-year period from 2005 to 2013, which allowed for an evaluation of the degree of policy coherence and its variability over time, especially during policy shifts that occurred in response to the 2007 and 2008 food price crises, or were the result of macro-economic policy decisions such as the review of the exchange rate regime in mid-2012.

7.1 Methodology and approach

This section assesses the degree of alignment between several key policy objectives of the Government of Malawi with budgetary spending and what MAFAP analysis has revealed to be additional policy factors affecting price incentives to producers and wholesalers.

This section follows the policy coherence analysis approach as defined in the MAFAP Synthesis report (2013) and as summarized in Figure 81. As illustrated, policy dimension 'A' represents overarching policy goals and objectives that are relevant to the analyses, while dimensions 'B' and 'C' refer to specific policy measures, some determined by long-term goals and government objectives, while others may be the result of unforeseen events (e.g. production shortages due to drought or other natural disasters) which may require temporary policy measures to address immediate needs. Dimension 'D' represents the issues that policies influence and affect: the factors driving price incentives or disincentives for producers. This dimension takes into account all direct and indirect effects of policy measures and overall market performance. Finally, dimension 'E' includes MAFAP's price incentives and disincentives indicators, which reveal how policies and market performance affect producers and traders in the commodity's value chain, and hence if policy measures and public expenditure are achieving stated objectives and goals.

The analysis on policy coherence covers only the overall and specific policy objectives which are relevant for the MAFAP analysis. A summary of the main driving factors and related policy measures and objectives by commodity is provided in Annex 2.

FIGURE 81.   **ANALYTICAL FRAMEWORK FOR THE MAFAP POLICY COHERENCE ANALYSIS**
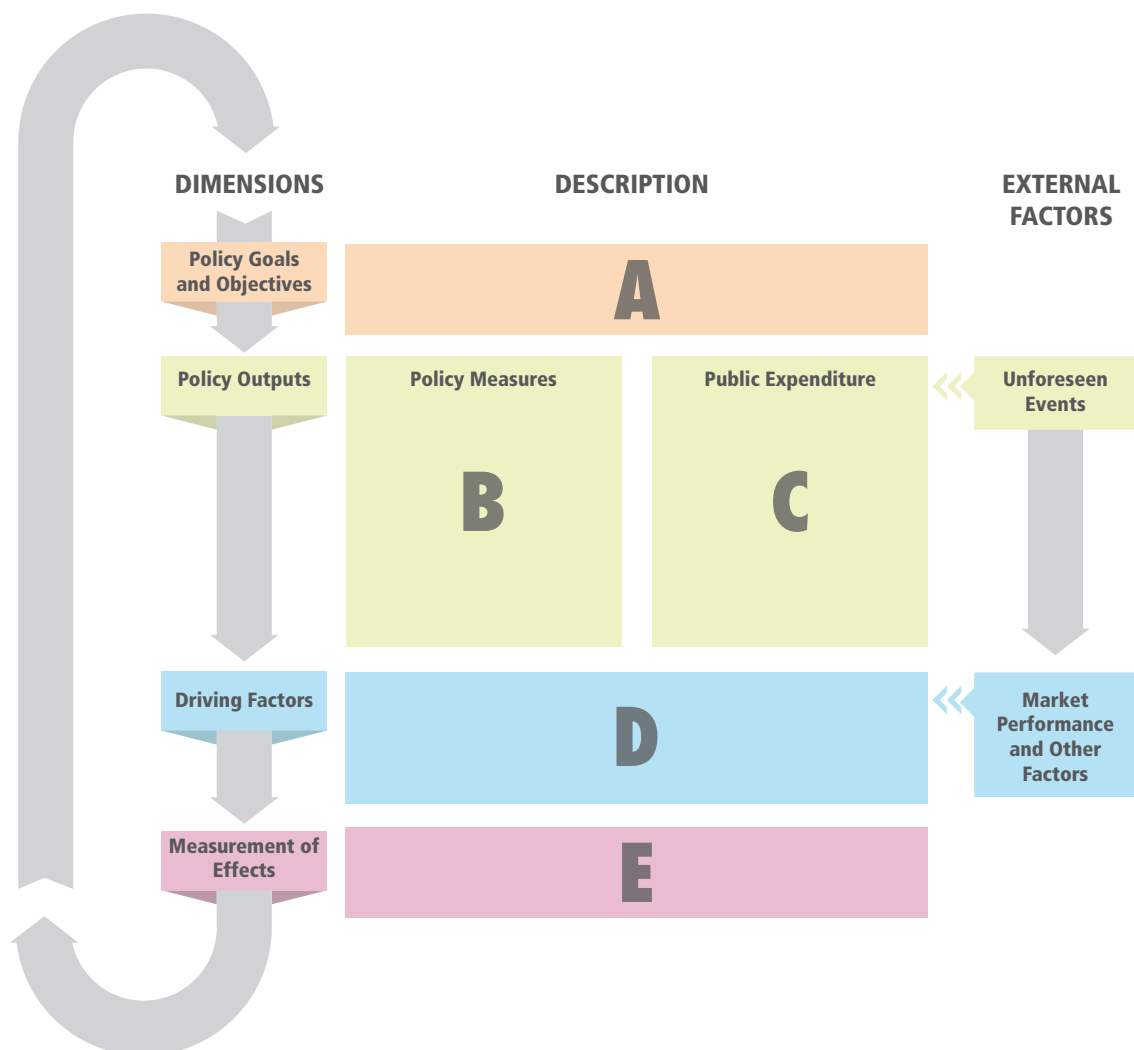
Source: Angelucci F. et al., 2013

7.2 Assessing coherence between overall development objectives and policies

Despite being the driving force of the economy, accounting for 30 percent of the GDP and 85 percent of export revenues in 2013, the agricultural sector remains undiversified and reliant on favourable weather conditions. Government efforts to address these challenges have led to varied results. The dependency on aid flows from the IMF, the World Bank, and national donors leaves the investments in the agriculture sector vulnerable.

As a landlocked country, the development of efficient infrastructure connecting Malawi to major ports has been an ongoing pursuit of the government, continually struggling to keep up with increased movement of goods and services and information. However, rural infrastructure has only recently been acknowledged for needed support and thus suffers slightly from sub-optimal spatial/temporal targeting and lack of private investment.

📍 **Objective: Focus on the development of agriculture to achieve broad-based economic growth**

Agricultural and rural sector development has the most potential for food security and pro-poor growth. However, the sector is currently undiversified and therefore remains strongly dependent on tobacco and maize production and on the export of primary agricultural products. The development of agriculture and agribusiness intends to aid the diversification and value addition of the sector as well as the growth of the manufacturing sector.

The MDGS I and II, which have set government development priorities since 2006, emphasize that agricultural and rural sector development and food security are necessary to ensure broad-based economic growth. Consistent with such priorities, the level of expenditure targeting food and agriculture was high, reaching 17 percent of total government expenditure[46] on average from 2005 to 2013. However, while total government spending increased annually during the period of review, expenditures in support of food and agriculture rose disproportionately and unevenly with significant dips in 2010 and 2011; a result of a shift in

expenditures toward non-agricultural sectors in those two years.

Despite the high level of public expenditure on food and agriculture (PEFA), producers of the six of main commodities in Malawi (cotton, groundnuts, maize, sugar, tea and tobacco) faced price disincentives to production of -11 percent on average over the 2005-2013 period.

▶ **Recommendation**

- Ensure a steady level of public expenditure across years and a high disbursement rate of national and donors funds in order to support the development of the agricultural sector.

📍 **Objective: Enhance rural development and boost private sector investment to ensure growth and competitiveness**

Malawi remains an exporter of raw products and is thus not benefiting from value added activities as these tend to take place in the importing countries. The main obstacles facing Malawi's integration into Global Value Chains include poor infrastructure, low labour skill levels and a weak business climate.

Increasing the contribution of agro-processing to exports for increased economic growth is highlighted throughout the MGDS I and MGDS II, envisioning the development of agro-processing in rural areas through the enhancement of private sector participation and investment. The NES reaffirms the need to diversify exports and focuses on strategic objectives to be pursued for specific commodities. The main objective is to enhance export competitiveness by promoting processed agro-products that feed into the domestic and global value chains. However, the period analysed in this study does not capture the impact of the recently approved (2013) export strategy that clearly states priorities for the sector as well as specific export products.

Development of trade and market infrastructure was strongly, albeit not holistically supported over the study period, with 26 percent of PEFA allocated to hard infrastructure, namely, road development and rehabilitation. Conversely, soft market infrastructure was poorly targeted. In particular, the lack of competition in the transport sector and several main export markets as well as insufficient financial and legal capacity for the enforcement of market and price regulations were

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[46] As defined in MAFAP methodology.

principal contributors to the high transaction costs encountered by economic agents throughout the value chain. The consequences of these inefficiencies are borne by farmers who are thereby disconnected from the main markets and, through the subsequent loss of any bargaining power, remain price takers.

► **Recommendation**

- Create a policy environment conducive to trade and private investment in agro-processing activities. The development of trade and market infrastructure and the enforcement of appropriate market regulations to strengthen agri-business linkages will be invaluable in this endeavour.

📍 **Objective: Improving disaster risk management and resilience to external shocks**

With the objective of reducing the social, economic and environmental impact of disasters, disaster risk management is a key priority in both the MGDS I and II. Preventing food shortages in times of disaster was included as part of the long and medium term goals of the MGDS I, while the development of an early warning system has been introduced by the MGDS II. The adoption of strategies to prevent, mitigate and cope with the impact of adverse weather events and other shocks is particularly important given the reliance of the economy on agriculture.

For instance, the prolonged drought in 2005 led to a major food crisis affecting consumers who paid 15 percent higher prices than they should have paid were more effective disaster risk management measures in place. Furthermore, the food price crisis that hit Malawi in 2008 may have eased off that same year, as in neighbouring countries, but instead lasted until 2009 and created an average 30 percent disincentive for maize consumers that year. The later instance highlights the necessity to continually monitor and analyse market price data that can predict such crises and enable the government to take decisive action accordingly.

The measures needed to improve risk management and to foster resilience within the agricultural sector and the economy at large are currently not adequately supported by public spending despite being clearly stated as necessary objectives in programmatic documents. Due to the scarce resources allocated to these types of projects and programmes, interventions such as dissemination of agricultural statistics, development of storage capacity and development of irrigation have not come to fruition.

► **Recommendation**

- Focus on policy measures that could affect the long-term development of the agricultural sector and reduce vulnerability to weather and price shocks (for example, irrigation, storage capacity, market information).

- Ensure the implementation of an effective early warning system based on sound and reliable market and weather information in order to improve preparedness and response to shocks.

📍 **Objective: Improve public sector accountability and transparency to avoid discontinuity of donor support**

Donor support was intermittently suspended between 2010 and 2013, increasing the fiscal gap and reducing actual on-budget expenditure in support of food and agriculture. In response, the government has since implemented, with the approval of development partners, a comprehensive action plan for Public Finance Management (PFM).

Improving accountability and transparency is essential to avoid discontinuity of donor support. The increasing level of off-budget support also creates uncertainty with regards to the alignment between donor spending and national policy objectives.

► **Recommendation**

- Continue to pursue the efforts already undertaken to improve accountability and transparency of the public sector.

- Encourage on-budget donor support to ensure control of donor spending and alignment with national priorities.

📍 **Objective: Maintain a floating exchange rate policy**

One of the monetary policy objectives included in the MGDS I was to maintain the market-determined exchange rate. Notwithstanding, a fixed and overvalued exchange rate was maintained by the country from 2005 to 2012. While this inflated exchange rate made imports cheaper, it created disincentives for agricultural producers, especially those who grow crops that are principally exported.

Reforming the exchange rate policy was strongly recommended by the IMF and the adoption of a floating

exchange rate was part of the objectives of the Malawi Economic Recovery Plan. By allowing the exchange rate to float, the MDG, which reflects the relative effects of the inefficiencies and exchange rate misalignment on producer prices, decreased from -50 to -5 percent between 2011 and 2012. The policy decision to finally adopt a floating exchange rate was consistent with the willingness to promote exports and reduce inflation.

▶ **Recommendation**

• Sustain the floating exchange rate policy.

7.3 Policy coherence within the food and agriculture sector

📍 **Objective: Strengthening linkages between farmers and markets through physical infrastructure improvements**

Increasing commercialisation by strengthening the linkages between farmers and markets – both input and output – is a core policy objective of MGDS I and II. Additionally, ASWAp refers to the necessity of strengthening linkages between producers of high value agricultural commodities and domestic and international markets, with reference to rehabilitation and expansion of market infrastructure. There is no specific reference to developing or expanding road infrastructure in the ASWAp but it is highlighted in the NES as a key objective along with ensuring better transport services.

As mentioned above, 26 percent of PEFA was primarily allocated to the construction and rehabilitation of feeder and rural roads mainly in projects managed by the Road Fund Administration.

The price incentives analysis highlighted that the producers bear the higher costs of poor infrastructure and lack of competition in transport. Because of this, they did not benefit from high prices in the domestic, regional or international markets. The fact that Malawi is a landlocked country further increases the costs to reach ports in Mozambique and South Africa.

▶ **Recommendation**

• As envisaged in the NES, boost investments on construction and rehabilitation of rural and feeder roads that are fundamental for agricultural trade flows and target key value chains more effectively.

• Strengthen institutional collaboration and coordination between the MoAFS and the Road Fund

Administration on which road investments should be better prioritized.

• Increase the level of expenditures allocated to the development of market services and infrastructure.

• Improve connectivity between the main national markets and the main ports in the region, exploring the opportunities offered by the Shire-Zambezi waterway project that would link Malawi (via 238-km river) to the Mozambican port of Chinde.

📍 **Objective: Foster value chain integration through market information systems**

The need for a market information system to reduce the temporal and spatial price variability is included in the MGDS I and II and is a priority of the ASWAp and the NES. It is therefore unclear why no major investment in design, systematic collection, or dissemination of market information was recorded in the PEFA analysis for the 2006–2013 period.

The lack of market information is one of the main factors contributing to price disincentives at the producer level. Information on input and output prices would support producers' decisions concerning investment, marketing and storage. The lack of market information impedes spatial and temporal price arbitrage and is particularly disadvantageous for producers in that they cannot exert authoritative bargaining power with potential buyers. Such information would certainly aid the determination of adequate producer prices, namely a price that would reflect the regional and international price dynamics and not generate disincentives for producers: something that has been a challenge for maize, tea, cotton and tobacco. For example, our results indicate that the minimum tea prices resulted in disincentives for producers during all years considered and the implementation of high floor prices for tobacco in the 2006/07 season created incentives for producers but reduced the competitiveness of the sector on the international market.

The absence of a well-functioning market information system also affects policy makers, who are thus crippled in their evidence based decision-making capacity. Without knowledge of past or present pricing structures, they are unable to assess, the price effects of their market policies

► **Recommendation**

- Develop a sound and robust market information system.

- Institutionalise and maintain a monitoring system at national level that would allow for an evidence-based assessment of the impact of policies, such as the fixation of minimum producer prices and maximum retail prices, on producers and consumers.

📍 **Objective: Increase productivity through improved access to inputs**

This objective is not clearly stated in the MGDS I but is included in the MGDS II and the NES. The implementation of the maize and legume subsidy programme is also one of the main policy actions to increase maize self-sufficiency as outlined in the ASWAp.

More than half of PEFA was allocated to the FISP from 2006 to 2013 representing a significant share of the government budget. Maize captured the majority of the expenditures allotted to the FISP, giving little room to support the production and productivity of other commodities. As a result, maize production increased at the expense of other commodities (IFPRI, 2011). The FISP, by attracting a large amount of public resources, diverts resources from potentially more productive investments such as training and extension services for farmers, agricultural technology and research, and rural infrastructure development.

The budgetary transfers allocated to maize in the framework of the FISP compensated the negative effects of trade and market policy distortions faced by farmers in almost all years considered. However, they could not outweigh the effects of the market inefficiencies and the exchange rate misalignment. Unlike maize, the limited direct support to tobacco did not impact on the incentives/disincentives structure of the value chain.

► **Recommendation**

- Explore the costs and benefits of projects and programmes having longer-term impact on maize production, rather than input subsidy and define a long term strategy to ensure productivity increase.

- Balance the budgetary transfers between maize and other crops important for food security to boost their productivity.

- Further investigate and assess the distortive effects of trade and market policies on maize prices in order to inform policy making.

📍 **Objective: Promotion of irrigation farming**

The promotion of irrigation farming is among the objectives of MDGS I and II and is a key component of the ASWAp and the NES. The Green Belt Initiative, although aligned closely with the components of the ASWAp and having a strong focus on irrigation development, is to be fully financed by private sector investments and solely in the context of large-scale, capital intensive agribusiness farming.

Expenditures budgeted for capital improvement, including on-farm and off-farm irrigation, accounted for only 3 percent of PEFA and did not increase in absolute terms along with the general expenditures in support of food and agriculture. Over half of the provision to irrigation was funded by development partners, making irrigation one of the main victims of the aid suspensions between 2010 and 2013.

The reliance on rainfall patterns makes crop performance highly variable. This is reflected on marked year-on-year domestic price variations, which in turn reflected the level of price incentives and disincentives for producers. Indeed, the supply shocks caused by unfavorably weather conditions affected the level of price incentives and disincentives of maize and tobacco producers.

► **Recommendation**

- Strengthen investments in irrigation infrastructure that would generate a long term positive impact on productivity, enhance food security and partly reduce seasonal and annual price volatility.

📍 **Objective: Extension services to improve production and marketing for producers of food security and high value agricultural export crops**

Provision of extension services is found amongst the policy objectives of the MGDS I and II and planned in the ASWAp. The NES also includes the implementation of extension services targeting oil seed and sugar cane products.

Extension services and technology transfers however, accounted for only 2 percent of the PEFA. There were two slumps in funding in 2010 and 2013 as a consequence of the aforementioned aid suspensions since capacity development programmes and projects

are mainly handled by international agencies. However, with the implementation of the NES, greater support to extension services for oilseeds and sugar cane farmers is likely to be provided.

► **Recommendation**

- Ensure higher and consistent national public expenditure in support of extension services.

- Further articulate extension services, not simply providing technical assistance to farmers on production techniques, but also on marketing strategies and agri-business linkages.

Objective: Improved agricultural research

In the MGDS I, there is no reference to agricultural research, while it is among the aims outlined in the MGDS II. Technology generation and dissemination is also one of the key support services of the ASWAp.

Investment in agricultural research and development has proved to be one of the most effective forms of public investment over the past 40 years (FAO, 2012). Indeed, technical improvements for productivity growth ensure higher incomes for producer as well as lower prices for consumers and therefore affect the economy as a whole. Yet, public spending allocated to agricultural research accounted for 3 percent of PEFA from 2006 to 2013, 86 percent of which was provided by external donors.

► **Recommendation**

- Increase the level of national expenditures allocated to agricultural research.

Objective: Develop policies and regulations governing export and non-traditional crops

Creating a regulatory framework conducive to agri-business is one of the key objectives of the MGDS I and II. This calls for the development of policies and regulations governing non-traditional crops in order to promote diversification of agricultural production and to stimulate entrepreneurship. No reference is made to the development of a favourable regulatory framework in the ASWAp, while this objective is explicitly mentioned in the NES. Consistent with the MGDS II, the NES, approved in 2013, introduces some changes: the adoption of a "favourable trade policy, such as the removal of export restrictions for specific commodities", "adequate participation and buy-in of the private sector in trade policy formulation and negotiation", and

establishment of technical committees, such as the National Working Group on Trade Policy and the Trade Logistics Working Group.

Our analysis on price incentives has highlighted the lack of competition amongst agro-processors, especially for sectors like sugar, tobacco and groundnuts where there are few companies, sometimes only one, that buy from farmers and carry out processing services and export operations. A fully integrated value chain where one company controls the different stages of the supply chain has led to the inability of farmers to negotiate prices. Indeed, one of the main factors driving price disincentives to producers of export commodities is the lack of competition among agro-processing companies and services, namely, transport and logistics services. The Competition and Fair Trade Commission (CFTC) cannot fully fulfil its role of monitoring and ensuring competition on the market because of the limited resources and the lack of independence from the stakeholders it is expected to regulate (Chirwa, 2011).

Moreover, during the period 2005-2013, the market environment in Malawi had a high level of unpredictability due to frequent changes on policy interventions.

► **Recommendation**

- Ensure effective functioning of the CFTC by securing its independence and enhancing its capacities to increase, monitor and sustain competition.

- Establish a conducive policy framework to enhance competition by reviewing measures that could represent barriers to entry (eg. concession systems) and/or by creating incentives for the access of new actors in the market (eg. tax exemptions).

- Improve communication to agents involved in the value chain concerning market and trade policy changes.

- Carefully monitor and analyse effects of newly implemented trade policies and processes.

Objective: Increase agricultural diversification by promoting production of non-traditional crops

Although crop diversification is not one of the key objectives in MGDS I, it is one of the top priorities of the MGDS II and is also a component of the ASWAp. To achieve crop diversification, the following groups of commodities are targeted: crops (legumes, tubers and

horticulture), livestock (poultry, small stock, pig), and fish (aquaculture).

Maize production captured a large portion of public expenditure over the 2006-2013 period. This drew off resources that could be used to support commodities targeted for production diversification. After maize, commodities receiving the largest support were tobacco, cotton and sugar, while expenditures allocated to other products relevant for food security, such as cassava, sweet potatoes, horticulture, legumes, fish and livestock altogether represented only 1.7 percent of the total PEFA on average over the analysed period.

With the implementation of the Smallholder Crop Production and Marketing programme in 2011 the support to crops as a group (not commodity-specific) increased but remained low, with an average 1.2 percent of agriculture specific expenditures over the 2006-2013 period. From 2010, specific programmes in support of horticulture production were implemented by the Ministry of Trade and Industry. It is likely that expenditure in support of horticultural products will further increase, since this is one of the objectives of the NES. Support to fish production was more diversified, as processing and commercialisation support activities were also provided. Unlike fish production, livestock production was only supported through inputs provision.

► **Recommendation:**

• Increase the budgetary support to crop, livestock and fish production in the effort to achieve agricultural diversification.

📍 **Objective: Increase storage to reduce post-harvest losses and ensure food price stability**

The construction of mini silos at farm level to improve medium to long-term food storage capacity is part of the MGDS I and II. In the ASWAp, promoting on farm storage is part of the actions aimed at increasing maize self-sufficiency and improving price risk management at the farm level.

Public expenditures for storage and public stockholding represented less than 1 percent of the PEFA on average from 2006 to 2013, except in 2007 when they were considerably higher compared to the other years due to the replenishment of staple grains reserves of the NRFA and ADMARC.

One of the main drivers of disincentives to maize farmers was the low farm-gate prices received due to the inability

of most farmers to store maize in anticipation of higher prices later in the season.

► **Recommendation**

• Explore the costs and benefits of increasing the level of public spending in support of public and private storage, including a price sensitivity analysis.

📍 **Objective: Improve agricultural market functioning through effective and informed policies**

Implementing policies to improve the functioning of the maize market is part of the strategy of the MGDS I. A reference is also made to the aim of implementing policies that do not distort markets. However, strategies referring to the improvement of the agricultural market mainly refer to the development of infrastructure in the MGDS II and in ASWAp documents.

Numerous market and trade policies targeting maize were implemented between 2005 and 2013 including export bans implemented in 2005, 2008, 2011; import restrictions throughout the period; bans on private domestic trade in 2005, 2006 and 2008; and the implementation of ceiling prices to protect consumers from soaring food prices in 2008 and 2009. Such short-term and ad hoc policies had conflicting impact on the various value chain agents. They resulted in disincentives for producers by affecting price transmission and preventing them from benefiting from the domestic and regional price opportunities. While the implementation of such policies depressed producer prices, consumers were not systematically protected, as they paid higher prices than they should have in the absence of such trade and market policies.[47]

► **Recommendation**

• Systematically monitor and analyse the effects of market and price policies; a sound and effective Market Information System would contribute to the implementation of suitable policies considering both the effects on consumers and producers.

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[47] The level of incentives at wholesale level is used as a proxy to estimate the protection or taxation for consumers.

Annexes

Annex 1: Relevance of commodities in terms of MAFAP criteria

COMMODITIES ACCOUNTING FOR AT LEAST 70% OF AGRICULTURAL PRODUCTION VALUE [2005-2011]			
	Avg production value 2005-2011 (constant 2004-2006-million USD$)	Avg % of total production 2005-2011	Avg cumulative % of total production 2005-2011
1.Cassava	726	23.6%	23.6%
2.Maize	514	16.7%	40.4%
3.Potatoes	481	15.7%	56.0%
4.Sugarcane	146	4.7%	60.8%
5.Tobacco, unmanufactured	143	4.7%	65.4%
6.Groundnuts, with shell	116	3.8%	69.2%
COMMODITIES ACCOUNTING FOR AT LEAST 70% OF AGRICULTURAL IMPORTS VALUE [2005-2011]			
	Avg import value 2005-2011 (US$)	Avg % of total imports 2005-2011	Avg cumulative % of total imports 2005-2011
1.Tobacco, unmanufactured	63,995	25.5%	26.0%
2.Wheat	59,978	23.8%	49.3%
3.Oil Soybean	18,363	7.3%	56.7%
4.Maize	11,366	4.5%	61.1%
5. Food prep. nes.	7,169	2.9%	64.0%
6.Oil palm	6,206	2.5%	66.5%
7.Cigarettes	5,922	2.4%	68.9%
8.Milk Whole Dried	5,649	2.3%	71.1%
COMMODITIES ACCOUNTING FOR AT LEAST 90% OF AGRICULTURAL EXPORTS VALUE [2005-2011]			
	Avg export value 2005-2011 (US$)	Avg % of total exports 2005-2011	Avg cumulative % of total exports 2005-2011
1.Tobacco, unmanufactured	566,938	67.2%	67.2%
2. Sugar Raw Centrifugal	79,265	9.4%	76.6%
3. Tea	66,005	7.8%	84.5%
4. Maize	30,463	3.6%	88.0%
5. Cotton lint	19,825	2.4%	90.4%
COMMODITIES ACCOUNTING FOR AT LEAST 70% OF FOOD INTAKE [2005-2009]			
	Daily intake (gr/capita/day)	% of total daily intake (gr/capita/day)	Avg cumulative % of daily intake (gr/capita/day)
1.Maize	370	24.3%	24.3%
2.Potatoes	290	19.0%	43.3%
3.Cassava	207	13.6%	56.9%
4.Roots, tuber dry equivalent	120	7.9%	64.8%
5.Bananas	67	4.4%	69.3%

Annex 2: Policy coherence matrix

Incentives/ disincentives	Driving factors	Policy	Public Expenditure
What are the price incentives/ disincentives and costs/gains that market inefficiencies represent for producers?	What are the key factors or issues that drive incentives/ disincentives for producers?	What policy objectives and measures are directly related to these driving factors?	How does public spending address these driving factors?
MAIZE Average Observed NRP: -1% Average Adjusted NRP: -29% MDG: -40% Average Observed NRA: 26% Average Adjusted NRA: -10%	• Disincentives at the farm gate over the 2005-2013 period were primarily driven by low producer prices, owing to farmers marketing their maize when prices are lowest (April-June). • Sharp price increases on the domestic and regional market and ad hoc government trade policies further exacerbated the extreme seasonal price variations, leading to severe disincentives at farm gate in 2008, 2012 and 2013. • Additional disincentives arise from high access costs between farm gate and wholesale due to poor rural infrastructure and an overvalued exchange rate until mid-2012. • Incentives at farm gate are due to high domestic maize prices in Malawi relative to the region, particularly in years of limited domestic and international trade restrictions (2007, 2010, and 2011) • Incentives at the point of competition in all years, except a neutral situation in 2007 and 2012, are due to the ability of wholesalers and medium and large-scale traders to store maize in anticipation of higher prices later in the year. • Consumers received disincentives throughout the period since the NRP at wholesale can be taken as an inverse proxy indicator for consumers.	**OBJECTIVES** • ASWAp (2010) sets maize self-sufficiency through increased productivity and reduced post-harvest losses as a key objective . • Maize is the focus of several producer and consumer-oriented policies and programmes, in particular the FISP which provides ample fertilizer and seed subsidies to maize farmers. **MEASURES** • International and domestic trade bans on maize were implemented intermittently and based on production estimates as opposed to price signals. • Operation of price band system without purchasing power to enforce it. • Strict import lisence restrictions on private traders. • Provision of fertilizers and seeds subsidies under FISP since 2005/06 **POLICY GAPS** • Market Information system • Community Warehouse receipt System or separate storage and credit facility • Rural infrastructure, particularly feeder roads and small scale irrigation	• Maize attracted 71% of agricultural specific expenditures (av. 06-13) i.e. 50% of PEFA. • Maize was primarily supported through the provision of input subsidies in the framework of the FISP. • Minimal expenditures targeted marketing infrastructure, storage capacity, and dissemination of price information.

	Incentives/disincentives	Driving factors	Policy	Public Expenditure
GROUNDNUTS	Average Observed NRP: -15% Average Adjusted NRP: -36% MDG: -30%	• Groundnut producers involved in the high value export value chain faced disincentives of -15 percent on average between 2005 and 2013. • From 2005 to 2010, producer received prices aligned with the reference price except in 2006 and 2008. Since the value chain under NASFAM control was integrated, the price transmission between international and domestic markets was high. • As NASFAM is a producer association, producers also benefited from collective bargaining power. • With the creation of Afrinut in 2011, price disincentives increased. This could be the result of the loss of bargaining power for producers and the increasing number in agents in the value chain. • High transport costs and high margins enjoyed by exporters resulted in disincentives for producers. • Overvaluation of the exchange rate until 2012 resulted in further disincentives to production.	**OBJECTIVES** • ASWAp (2010) identifies groundnut production as relevant for diversification objective in order to increase farming revenues and improve nutrition. The programme aimed to increase the total value of groundnut exports through the reinforcement of contract farming, farmers associations and cooperatives, distribution of improved seed, fertilizer and chemicals, as well as export promotion measures (market research studies, buyer/trader meetings etc). • Groundnut included in FISP since 2009 **MEASURES** • Overvaluation of the exchange rate harmed producers but did not interfere with exports, which actually increased over the period. • Since 2009, under FISP, legume seed vouchers provided can be used for subsidized procurement of groundnut, pigeon pea, soybean or bean seed. **POLICY GAPS** • The main challenge is the required quality standard certification linked to aflatoxin levels. No clear policy in place to target the reduction of aflatoxin levels, especially for export of groundnuts, creating a lack of confidence from international markets. The NSE is thus suggesting to focus policy efforts on this issue (NES, 2012). • High fees paid to export agents could reflect a lack of competition.	• Specific expenditures allocated to groundnuts in the framework of the FISP were not identified; only aggregate expenditures allocated to legumes could be identified. Therefore, the NRA for groundnuts was not estimated. However, expenditures allocated to groundnuts is considered less than expenditures to legumes, representing between 1 and 2 % of the FISP budget.

	Incentives/ disincentives	Driving factors	Policy	Public Expenditure
TOBACCO	Average Observed NRP: 19% Average Adjusted NRP: -1% MDG: -20% Average Observed NRA: 22% Average Adjusted NRA: 2%	• Tobacco producers received low price incentives of 8 percent on average between 2005 and 2013. However, if the inefficiencies in the value chain, excessive taxation (classification levy, hessian scheme and withholding tax) and the exchange rate misalignment are considered, the results show that producers faced disincentives of -11 percent. The value chain is affected by a limited price transmission between the export market and auction, depriving producers of the opportunities offered by the export market. • Incentives observed in some years are a result of exceptional circumstances, such as short term price measures and supply shocks pushing domestic prices upward. This was the case of low production levels, misleading production forecasts and the implementation of a floor price for producers. • Price distortions between border and auction is attributed to uncompetitive behaviour, namely the monopolistic situation of services at auction and the oligopsonistic position of buyers at auction as well as collusive practices.	**OBJECTIVES** • ASWAp (2010) aims to boost productivity, production and export volume of key export commodities including tobacco, planning to promote contract farming, out grower schemes and farmers' organizations as well as provide improved technology to enhance output quality. **MEASURES** • The TCC operates as a semi-autonomous organ of the Ministry of Agriculture and is funded through a cess levy of 0.1 USD cents on every kilogram of tobacco sold, a classification levy of 0.35 USD cents, and revenue from licensing and registration. • To counteract the price depreciation at auction, the Government established minimum prices in 2006/07 for raw tobacco. The prices were fixed by the Government, the TCC and tobacco buyers. Prices were established for each grade of tobacco and were supposed to ensure that investment costs were recovered. However, the policy was lifted in the middle of the marketing season (Chirwa, 2011), tobacco companies preferring to buy tobacco in other countries where tobacco is cheaper. • Tobacco fertilizers were provided under FISP (2005/06) but the government decided to exclude tobacco farmers from the programme in 2009/10 to focus on food crops. **POLICY GAPS** • Auction services, leaf buying and transport sector all suffer from limited or no competition. The established Competition and Fair Trading Commission (CFTC) (1998), with the role to investigate and prohibit anti-competitive and unfair trading practices, is constrained by lack of resources and independence. • Lack of market and crop information for farmers that would enable them to make informed production decisions.	• Although FISP stopped targeting tobacco production in 2009, tobacco was the second commodity targeted from 2005 to 2013. Like maize, tobacco was exclusively supported through the provision of input subsidies. From 2006 to 2009, average expenditures on tobacco represented 7 percent of agriculture-specific expenditures namely 10,054 MWK/tonne on average per year.

	Incentives/ disincentives	Driving factors	Policy	Public Expenditure
TEA	Average Observed NRP:-37% Average Adjusted NRP: -44% MDG: -22%	• Smallholder tea producers received price disincentives to production of -37 percent on average throughout the period, owing to the low price of green leaf fixed by a pricing model. • Price transmission between border and farm gate is impeded by the bonus system: it favours farmers in most years (as it is pegged to the higher auction prices) but does not reflect the direct sales market where the majority of tea is sold. • Exchange rate misalignment resulted in additional disincentives to producers of -11 percent of the farm gate price on average.	**OBJECTIVES** • ASWAp (2010) sets to increase smallholder tea productivity and value through the promotion of out-grower schemes and improved technologies. **MEASURES** • No measures directly affecting tea production, export or sale. **POLICY GAPS** • Lack of competition and transparency regulations for the tea sector; there are only 2 main buyers of tea in Malawi - both at auction and direct sales.	
SUGAR	Average Observed NRP: -23% Average Adjusted NRP: -33% MDG: -29% Average Observed NRA: -22% Average Adjusted NRA: -32%	• Smallholder sugar cane producers received disincentives throughout the period of an average -23 percent, driven primarily by their inability to negotiate prices with the only buyer of sugar cane in Malawi that charges a milling fee of 40 percent through their out-grower contract agreements. • Variations in levels of disincentives are due to changes in international price and volumes sold. Domestic prices at farm gate remain steady, likely to be supported by a stable monopolistic domestic market. • Incentives in 2012 were due to high volumes of low priced sugar sold to Portugal for refining (bringing the benchmark and thus the reference price at farm gate well below the domestic price which continued to increase slowly).	**OBJECTIVES** • The NAS (the government adaptation strategy to the EU Sugar Reform) aims to enhance the sugar cane sector competitiveness by increasing factory capacity and sugarcane production through efficiency improvements in both field and factory operations. Support for sugarcane out-growers has been identified as the most strategic area for support. • Through the Accompanying Measures for Sugar Protocol Countries, the EU supports the objectives of the NAS through the development of feeder roads, irrigation projects and development of the management capacity of service providers. **MEASURES** • Under the new 2012 UNICEF-sponsored government legislation aimed at reducing infant and maternal mortality, all sugar sold for direct consumption on the domestic market is enriched with vitamin A. **POLICY GAPS** • Lack of competition and monopsonistic environment: there is the need to ensure that the cane supply agreements between cane growers and Illovo are fair and remunerative.	• Sugar was the 4th commodity targeted by public expenditures but the sector was only supported from 2007 to 2009 through the Smallholder out grower sugar cane project which received contributions from the European Union (EU) and the African Development Bank (ADB). Support to sugar production represented 0.7 percent of specific agriculture expenditure, on average between 2006 and 2013. • Budgetary transfer to the sugar value chain had minor impacts on the level of price incentives to production.

	Incentives/ disincentives	Driving factors	Policy	Public Expenditure
COTTON	Average Observed NRP: 3% Average Adjusted NRP: -16% MDG: -24% Average Observed NRA: 19% Average Adjusted NRA: -5%	Cotton producers received low price disincentives of -6 percent on average between 2005 and 2013. • The atomistic market and the strengthening of regulation allow for price transmission between domestic and international markets. • The enforcement of the minimum price was weak and the price fixed did not systematically reflect the level of price in the international market. • Overvaluation of the exchange rate until 2012 resulted in further disincentives to production.	**OBJECTIVES** • The Cotton Strengthening Project (2010) aims at supporting the industry by increasing the value added of cotton production. • The MoAFS Promotion of Cotton Production(2007-2013), exclusively funded by the government, offered budget support to variable and capital inputs, training and extension services, support to marketing activities, research and inspection activities. • The Cotton Strengthening project (2011) focuses on supporting processors and traders. It is funded by both the government and donors. **MEASURES** • The Cotton Development Trust, formed in 2008, involves all cotton value chain players and coordinates discussions on the cotton strategic plan, cotton act, and price fixation mechanism. It also aims at increasing training and extension services and improving access to inputs. • The Cotton Council (2010) regulates the market through licensing of ginners and buyers, and farmer registration which are mandatory. Only certified seed is authorised for planting and ginners are prohibited from providing recycled seed to farmers. • Minimum buying prices for seed cotton are set since 2008 and determined using a pricing model and inputs from all key chain players in cotton. Price fixation mechanism for producer price (set prices) are difficult to enforce due to high competition domestically and international market factors. • Under FISP, in 2007/08 and 2008/09, farmers could also opt for vouchers to obtain seeds and chemicals for cotton production. This was put on hold in 2009 but reinstated in 2011/12 season. **POLICY GAPS** • Lack of regulation in margins exacted by ginners; Malawi seed cotton pricing model indicates a margin of 14 percent. • Fixed price not enforced and not reflecting international price: usefulness of the price fixation mechanism is questionable. The minimum price set by the government was not systematically aligned with the international price trends	• Cotton was the 3rd commodity targeted by public expenditures but the sector was only supported from 2008 to 2013 and accounted for only 1 percent of commodity specific agriculture expenditure. • Support to the cotton sector allocated in the framework of the FISP could not be identified. • Budgetary support decreased the level of disincentives from -6 to -2 percent on average between 2006 and 2013.

	Incentives/ disincentives	Driving factors	Policy	Public Expenditure
ALL COMMODITIES			**MEASURES** • Exchange rate: the effect of the overvalued exchange rate created disincentives for producers of all commodities but especially exports. The overvaluation however did not impact actors at point of competition for tea and tobacco value chains, since these auctions are conducted in US$.	
			POLICY GAPS • Inflation control: retail and export prices rise faster than producer prices, increasing price gaps and creating disincentives. Excessive food inflation caused by seasonal shortages contributes to overall inflation as well. • Market Information System • Rural Infrastructure, in particular feeder roads and storage facilities • Rural Credit	

MEASURES

Annex 3. Institutions covered by the MAFAP Public Expenditure analysis

2006	Ministry of Agriculture Ministry of Economic Planning and Development National Statistic Office; Ministry of Local Government and Rural development; Ministry of Land, Housing, Physical Planning and Survey Ministry of Water Development Ministry of Trade and Private Sector Development Ministry of Transport and Public Works National Road Authority Ministry of Mines, Natural Resources and Environment Ministry of Industry, Science, Technology	**2010**	Ministry of Agriculture and Food Security National Statistic Office Ministry of Development, Planning and Cooperation Ministry of Local Government and Rural development Ministry of Irrigation and Water Development Ministry of Gender, Child Development and Community Development Ministry of Tourism, Wildlife and Culture Ministry of Industry and Trade Roads Fund Administration Ministry of Energy and Mines
2007	Ministry of Agriculture and Food Security Office of President and Cabinet Department of Poverty Alleviation and Management Affairs Ministry of Economic, Planning and Development National Statistic Office Ministry of Local Government and Rural development Ministry of Land, Housing, Physical Planning and Survey Ministry of Irrigation and Water Development Ministry of Heath	**2011**	Ministry of Agriculture and Food Security Office of President and Cabinet Ministry of Development, Planning and Cooperation Ministry of Local Government and Rural Development Ministry of Land, Housing and Urban Development Ministry of Irrigation and Water Development Ministry of Industry, Trade and Private Sector Development Roads Authority Ministry of Natural Resources, Energy and Environment
2008	Ministry of Agriculture and Food Security Office of President and Cabinet Ministry of Economic, Planning and Development Ministry of Local Government and Rural development Ministry of Land, Natural Resources, Physical Planning and Survey Ministry of Irrigation and Water Development Ministry of Industry, Trade and Private Sector Development Roads Fund Administration Ministry of Energy and Mines	**2012**	Ministry of Agriculture and Food Security Office of President and Cabinet Ministry of Development Planning and Cooperation Ministry of Local Government and Rural development Ministry of Irrigation and Water Development Ministry of Industry, Trade and Private Sector Development Roads Authority Ministry of Rural Resources, Energy and Environment
2009	Ministry of Agriculture and Food Security National Statistic Office Ministry of Local Government and Rural development Ministry of Land, Natural Resources, Physical Planning and Survey Ministry of Irrigation and Water Development Ministry of Women and Child Development Ministry of Industry and Trade Ministry of Transport, Public Works and Housing Roads Fund Administration	**2013**	Ministry of Agriculture and Food Security Office of President and Cabinet Ministry of Local Government and Rural development Ministry of Irrigation and Water Development Ministry of Industry, Trade and Private Sector Development Roads Authority

Annex 4. Sources and type of data reported for actual spending

		Ministry of Agriculture	Ministry of water resources and irrigation	Other institutions
2006	Recurrent	Output based budget book Revised expenditure	Output based budget book Revised expenditure	Output based budget book Revised expenditure
	Development	Consolidated accounts Actual spending	Consolidated accounts Actual spending	Consolidated accounts Actual spending
2007	Recurrent	Consolidated accounts Actual spending	Consolidated accounts Actual spending	Consolidated accounts Actual spending
	Development	Aid Management database Actual spending	Aid Management database Actual spending	Aid Management database Actual spending
2008	Recurrent	Consolidated accounts Actual spending	Consolidated accounts Actual spending	Consolidated accounts Actual spending
	Development	Consolidated accounts Actual spending + Aid Management database when available	Consolidated accounts Actual spending	Consolidated accounts Actual spending
2009	Recurrent	Consolidated accounts Actual spending	Consolidated accounts Actual spending	Consolidated accounts Actual spending
	Development	Consolidated accounts Actual spending + Aid Management database when available	Output based budget book Revised expenditures + Aid Management database when available	Output based budget book Revised expenditures + Aid Management database when available
2010	Recurrent	Consolidated accounts Actual spending	Consolidated accounts Actual spending	Consolidated accounts Actual spending
	Development	Consolidated accounts Actual spending	Consolidated accounts Actual spending	Consolidated accounts Actual spending
2011	Recurrent	Consolidated accounts Actual spending	Consolidated accounts Actual spending	Output based budget book Revised expenditures
	Development	Consolidated accounts Actual spending	Consolidated accounts Actual spending	Consolidated accounts Actual spending
2012	Recurrent	Consolidated accounts Actual spending	Consolidated accounts Actual spending	Output based budget book Revised expenditures
	Development	Consolidated accounts Actual spending	Output based budget book Revised expenditures + Aid Management database when available	Output based budget book Revised expenditures + Aid Management database when available
2013	Recurrent	Consolidated accounts Actual spending	Consolidated accounts Actual spending	Output based budget book Revised expenditures + Aid Management database when available
	Development	Consolidated accounts Actual spending	Aid Management database when available	Aid Management database when available

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