



# Monitoring and analysing food and agricultural policies in Africa

## Synthesis report 2013







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# List of Acronyms

<b>ASDS</b>	Agricultural Sector Development Strategy
<b>BOT</b>	Budgetary and other transfers
<b>CET</b>	Common External Tariff
<b>EAC</b>	East African Community
<b>ECOWAS</b>	Economic Community of West African States
<b>FAPDA</b>	Food and Agriculture Policy Decision Analysis
<b>FCFA</b>	African Financial Community Franc
<b>FISP</b>	Farm Input Subsidy Programme
<b>GDP</b>	Gross Domestic Product
<b>GOT</b>	Ginning Output
<b>KTDA</b>	Kenya Tea Development Authority
<b>LOA</b>	Loi d'orientation agricole
<b>MAFAP</b>	Monitoring African Food and Agriculture Policies
<b>MDG</b>	Market Development Gap
<b>NRP</b>	Nominal Rate of Protection
<b>PAPISE</b>	Action Plan and Investment Programme for the Cattle Sector
<b>PDA</b>	Politique de développement agricole
<b>SADC</b>	Southern African Development Community
<b>SCADD</b>	Strategy for Accelerated Growth and Sustainable Development
<b>SRA</b>	Strategy for Revitalizing Agriculture
<b>URT</b>	United Republic of Tanzania

# Executive summary

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) to provide policy-makers in Africa – and progressively beyond – 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. To do this, MAFAP works with national and regional partners to establish a community of practice on policy measurement, monitoring and analysis by developing institutional capacities to systematically analyse government policies and their effects. MAFAP seeks to develop sustainable, country-based systems for monitoring:

- the level and composition of public expenditure in support of the food and agriculture sector;
- the effects of policies on price incentives for producers, consumers and other agents in key agricultural value chains; and
- the degree of coherence between governments' stated policy objectives, policy measures implemented to achieve these objectives and the effects they generate.

MAFAP's resulting quantitative indicators are comparable across commodities, countries and years. 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.

So far, FAO has partnered with government and research organizations in ten African countries<sup>1</sup> to facilitate the institutionalization of policy monitoring systems on the basis of this approach. After nearly three years of programme implementation, MAFAP's results for the period 2005-2011 were analysed and compared between countries, commodity groups and years. This report presents a detailed synthesis of MAFAP's results for all ten countries, the highlights of which are summarized below.

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1 MAFAP partner countries include Burkina Faso, Ethiopia, Ghana, Kenya, Malawi, Mali, Mozambique, Nigeria, Tanzania and Uganda.

***The policy environment and performance of domestic markets depressed producer prices between 2005 and 2010, though the trend is improving.***

Between 2005 and 2010, market and trade policies, coupled with poor market performance, depressed producer prices by an average of 10 percent in the ten MAFAP countries. MAFAP finds that such price disincentives have declined in recent years. But it remains unclear whether this reduction is mainly due to systematic improvements in policies and market performance or to short-term events, which lead to higher global and domestic prices. Therefore, it is uncertain whether this trend will be sustained in the long term.

By contrast, downstream agents such as traders, wholesalers and processors often faced price incentives, which mainly resulted from better access to market information and price hedging opportunities.

***Producer prices would improve significantly if inefficiencies in domestic value chains were eliminated through better targeted policies. However, MAFAP results suggest inefficiencies are increasing.***

In addition to measuring the effect of explicit market and trade policies on producer prices, MAFAP's analysis goes one step further by estimating the average Market Development Gap (MDG), which is the average cost that inefficiencies in domestic value chains represent to producers<sup>2</sup>. In general, the average MDG increased over the period analysed, ranging from -10 percent in 2006 to -17 percent in 2010. Costs due to market inefficiencies represent additional disincentives at the producer level, which stem from implicit policies, such as bribes, or even a lack of policy, such as high market access costs due to limited investment in infrastructure. Thus, MDGs highlight potential gains or cost savings that could be achieved if the necessary investments were made and adequate measures taken. Investments in infrastructure and measures to eliminate bribes are among those policies that would significantly improve producer prices, as these were very common inefficiencies found in commodity value chains across all countries.

***Despite import tariffs and other forms of government support, producers of imported commodities generally faced price disincentives due to market inefficiencies in domestic value chains, particularly the high cost of processing.***

Imported commodities attract a number of policy measures aimed at boosting production to achieve import substitution. Many governments have used a variety of measures to support producers of commodities competing with imports, including the provision of credit, equipment, seeds and other inputs. Trade policies such as import tariffs were also widely used in the ten countries. In some cases, import tariffs resulted in price incentives for producers, traders and processors, though this was at the expense of consumers. However,

2 The Market Development Gap (MDG) captures costs due to exchange rate misalignments and high market access costs within commodity value chains, which may result from factors such as local taxes and fees, poor infrastructure, high processing costs, the concentration of profits among downstream marketing agents (i.e. non-competitive behavior), bribes and other non-tariff barriers.

for most commodities requiring some form of processing, producers faced much lower price incentives than processors, or even faced disincentives. This was mainly due to the fact that the high cost of inefficient processing facilities and operations was often transferred to producers.

Price disincentives for producers of import competing commodities declined sharply in 2007/08, when international prices spiked during the global food price crisis. In response to this shock, many governments relaxed or removed import tariffs to support consumers. Scarcity in domestic markets and increased imports caused domestic prices to eventually align with international prices in 2008, thus reflecting a situation of neutral policy effect on prices. However, immediately after international prices dropped to more normal levels in 2009, producers once again faced price disincentives as a result of market inefficiencies, mainly with respect to the processing component of domestic value chains.

***Producers of non-traditional exports faced strong price incentives, while producers of traditional exports faced disincentives throughout the period 2005-2010.***

Non-traditional exports represent a significant share of all exports analysed in Uganda (e.g. fish) and, to a lesser extent, in Tanzania (e.g. groundnuts and beans). Producers of these non-traditional exports faced price incentives throughout the study period. This was mainly due to the favourable policy environment, as these commodities and their value chains were strategically targeted by the government for development and investment.

On the contrary, price disincentives were registered for producers of most traditional exports analysed, such as cocoa in Ghana and Nigeria, as well as tobacco in Malawi and Mozambique. This trend was largely a consequence of export restrictions and taxes, lack of policies to promote and develop traditional export markets (with the exception of Uganda) and poor organization at farm level, which resulted in a concentration of market power among downstream agents.

***Producers of commodities essential to food security<sup>3</sup> faced the strongest price disincentives compared to producers of import competing and export commodities.***

Price disincentives were higher in countries where thinly-traded commodities, namely root crops and maize, play a major role in food security, as these crops tend to be heavily affected by market segmentation and infrastructural constraints. Disincentives for producers of root crops were mainly a consequence of scarce attention paid to these commodities by policy-makers and the persistence of extremely disconnected value chains. The low level of marketable surplus and lack of integration between subnational and regional markets represent the main drivers of price disincentives for maize producers in most of the countries. Indeed,

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3 Commodity groups analysed are not mutually exclusive. Therefore, the group of commodities essential to food security for each country may include commodities that were also categorized and analysed as exports or imports.

maize markets seem better connected in those countries where a share of domestic production is exported, as in Malawi and Uganda.

Price disincentives for food security commodities declined between 2008 and 2010. This trend was mainly driven by strong price incentives for producers of heavily imported food security commodities such as rice (especially during the 2007/08 global food price crisis), which partly offset disincentives for thinly-traded root crops and maize in several countries.

To protect consumers during the soaring food price biennium from 2007 to 2008, many governments adopted short-term market and trade policies, such as export bans and price controls on food security crops. While these measures often benefited consumers by reducing domestic food prices, they hindered producers, who received prices below those they could have received if these policies had not been imposed. Moreover, in some cases, food grain stocks established in Burkina Faso, Ghana, Kenya, Malawi, Nigeria and Tanzania improved price stability and food security, and thus helped in protecting consumers, but did not prevent producers from facing disincentives.

***The level of public expenditure in support of the food and agriculture sector has declined and the composition of expenditures has shifted.***

With the exception of Kenya, all MAFAP countries for which public expenditure was analysed (Burkina Faso, Kenya, Mali, Tanzania and Uganda) spent over ten percent of their national budget on the food and agriculture sector throughout the period 2006-2010, suggesting that they exceeded the Maputo target in all years. However, this share generally decreased due to a significant dip in donor aid in 2008, which affected all countries analysed, except Kenya. Donor aid recovered in 2009 and 2010. Nevertheless, governments continued to increase their own expenditure by an average of 14 percent, compared to -8 percent for donors (in absolute, nominal terms).

The composition of public expenditures has shifted over the period studied, from agriculture-supportive (i.e. spending on rural development) to agriculture-specific (i.e. spending on agriculture). Due to the 2007/08 global food price crisis and decline in donor support, which is more targeted towards rural development, agriculture-specific expenditure rose from 39 percent to 57 percent of total expenditure on the food and agriculture sector.

***Budgetary transfers have mainly been used to support producers.***

Between 2006 and 2010, the five MAFAP countries for which public expenditure was analysed mainly used input subsidies and other budgetary transfers to support producers, while often relying on trade and market policies to protect consumers, especially in times of crisis. Projects and programmes aimed at boosting

production and productivity, directly or indirectly, far outnumbered those targeting consumers<sup>4</sup>.

The global food price crisis in 2007/08 caused an increase in public expenditure on input subsidies to boost food production and supply in the five countries analysed. In the face of soaring food prices, most countries also implemented short-term measures such as export bans, price controls and the removal or reduction of import tariffs on food security crops. While these policies supported consumers, they often depressed prices for producers, and may have even offset some of the benefits from producer subsidies.

Subsidies to producers in East African countries (i.e. Kenya, Tanzania and Uganda) were mainly for variable inputs such as seeds and fertilizer, whereas equipment and on-farm irrigation represented the bulk of producer subsidies in the two Sahelian countries in West Africa (i.e. Burkina Faso and Mali). Furthermore, input subsidies were often combined with technical assistance, research and extension services in East African countries, while technical assistance to producers in both West African countries was relatively weak.

Public expenditure on agricultural research was very low in Burkina Faso and Mali compared with that in East African countries. However, it declined in all countries throughout the period analysed, except for Mali. Moreover, subsidies for variable inputs were not necessarily matched by investments in infrastructure and marketing, which lagged in most of the countries analysed. If government spending continues to aim at increasing production without improving farmers' access to markets, the long-term efficiency of these subsidies is open to question.

***Despite recognition that agricultural development is essential for poverty reduction and economic growth in Africa, the agriculture sector remains penalized by poorly targeted policies and public spending, which are often inconsistent with national objectives.***

MAFAP's analysis focuses on three types of policies: producer-oriented, consumer-oriented and macro-economic policies. While producer-oriented policies attracted most public spending, the composition of allocated resources favoured input subsidies and other recurrent expenditures over investments in infrastructure and rural development. Consequently, they were insufficient to address deficiencies in the structure and functioning of domestic value chains, such as weak market information systems and infrastructural gaps. Furthermore, in many countries, investments for long-term development of the sector were almost entirely supported through donor funding.

In addition to budgetary transfers, many countries used protective market and trade policies such as minimum prices and import tariffs to support producers. These policies often lead to higher domestic prices, thereby taxing consumers. However, this situation reversed during the 2007/08 global food price crisis, when

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4 However, it should be noted that MAFAP's public expenditure analysis does not capture spending on safety nets and other social protection programmes that may benefit consumers, or spending on consumer programmes that may go through NGOs and/or donors, which do not report directly to the Ministries of Finance and Agriculture, the main data sources used by MAFAP.



domestic prices increased sharply. In response to these exceptional circumstances, countries relied on short-term market and trade policies, such as price ceilings, export bans and the removal or reduction of import tariffs on food security crops, rather than public expenditure to support consumers. While many of these measures were effective in keeping food affordable for consumers, they often conflicted with long-term development goals for the sector by reducing price incentives for producers of key agricultural commodities.

Despite the volatile conditions faced by consumers, public expenditure targeting consumers was limited compared to expenditure targeting producers throughout the entire period of analysis, even though food security and affordability are policy objectives for all countries. Of the limited funds allocated directly to consumer programs, most was spent on maintaining and increasing public food stocks, which existed in six out of the ten MAFAP countries. This suggests that the food price crisis renewed interest in developing national food reserves, which was evidenced by the growing number of commodities included in countries' food stock programs.

In some countries, macro-economic policies were inconsistent with national development objectives to increase agricultural exports. For example, exchange rate overvaluation was one of the key factors contributing to price disincentives for producers of exported commodities in Burkina Faso, Ethiopia, Malawi and Mali. While overvaluation has made imported commodities in these countries more affordable for consumers, it has increased the price of exported commodities and reduced their competitiveness in the international market.

MAFAP's price incentives analysis indicates that in many cases, policy measures and public expenditure did not sufficiently address inefficiencies in commodity value chains. A majority of the price disincentives for producers were not the result of explicit market and trade policies, but were rather the result of deficiencies in the structure and functioning of commodity value chains. The main deficiencies which contributed to price disincentives for producers included poor market and road infrastructure, as well as weak organization among producers and information asymmetries, resulting in a concentration of market power and profits among downstream agents (i.e. traders, wholesalers and processors).

Overall, MAFAP's findings show that the period analysed was characterized by exceptional circumstances as a result of the global food price crisis in 2007/08, which triggered an extremely volatile policy context in African countries in general, and in the ten countries covered by MAFAP in particular. It is therefore necessary to continue monitoring policies and their effects on producers and consumers in the coming years in order to distinguish between short-term trends and structural trends. Through MAFAP, FAO and its country partners are committed to developing a better understanding of these trends and their implications for food and agriculture in Africa.

# Introduction

After several decades of declining investment in agriculture and the recent crisis caused by high food prices, policy-makers, development partners and investors are showing renewed interest in agriculture and food security. Interest is strong in developing countries, especially in Africa, where production has not kept pace with rapidly growing demand for agricultural products. Although decision-makers recognize that appropriate policies and adequate public spending are critical for closing this gap, evidence to support decision-making is often limited in Africa.

To address this issue, 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) to provide policy-makers in Africa – and progressively beyond – 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. To do this, MAFAP works with national and regional partners to establish a community of practice on policy measurement, monitoring and analysis by developing institutional capacities to systematically analyse government policies and their effects.

MAFAP's resulting quantitative indicators are comparable across commodities, countries and years. From this perspective, MAFAP provides a shared basis for analysis in the form of a common set of indicators that monitor policies and their effects on prices for key agricultural commodities using secondary data available at country level. 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 African contexts.

This report recognizes that improved information, especially information that allows for comparison across countries, not only helps policy-makers reach better decisions, but also increases transparency, stimulates public debate and empowers other actors in a pluralistic policy-making process.

This report is the first synthesis of results gathered from three years of MAFAP implementation (2010-2013)

in ten African countries: Burkina Faso, Ethiopia, Ghana, Kenya, Malawi, Mali, Mozambique, Nigeria, Tanzania and Uganda. The intended audience includes both technical and non-technical readers interested in the main findings and trends identified by MAFAP. Other products released by MAFAP, such as Policy Briefs and Country Reports, are more designed for policy-makers at country and regional levels.

MAFAP's synthesis report is expected to become a regular output of FAO's work on policy decisions mapping, monitoring, analysis and evaluation. These functions are progressively being integrated into FAO's strategic framework (specifically Strategic Objectives 1 and 4) to ensure a sustained policy monitoring effort and capacity to inform policy dialogue at country, regional and global levels.

The report draws from Country Reports and Technical Notes produced for each commodity analysed and for public expenditure in each country. MAFAP's policy monitoring activities during 2010-2013 included the following three elements:

- Measurement and analysis of policy effects on price incentives for key agricultural commodities from 2005-2010 in Burkina Faso, Ethiopia, Ghana, Kenya, Malawi, Mali, Mozambique, Nigeria, Tanzania and Uganda;
- Measurement and analysis of public expenditure in support of the food and agriculture sector from 2006-2010 in Burkina Faso, Kenya, Mali, Tanzania and Uganda; and
- An assessment of coherence between governments' stated policy objectives, policy measures implemented to achieve these objectives and the effects they generate.

The structure of the report is as follows:

The first chapter focuses on the importance of monitoring policies in Africa. The second chapter includes an analysis of the effects of policy and market performance through prices. It seeks to determine the impact of food and agricultural policies on producers and consumers by commodity group and for selected individual commodities. The third chapter provides a detailed review of the level and the composition of public expenditure in support of the food and agriculture sector. The fourth chapter presents an assessment of policy coherence by evaluating the alignment between governments' policy objectives, policy decisions and their effect on producers and consumers, as well as the public resources allocated to the sector. This report aims to synthesize and compare the results obtained from the ten countries studied. However, key MAFAP findings for each country are summarized in chapter 5, which includes detailed information on the socio-economic background, policy framework and measures adopted in each country.

# 1. Why is it important to monitor food and agricultural policies in Africa?

Policies are pursued in order to induce changes in a society and its economy to achieve desired objectives. Most African countries, in common with many developing countries, rely to a significant extent on the challenging agriculture sector to sustain economic growth and achieve food security. In the majority of African countries, basic policy principles include: (i) considering agriculture sector growth and transformation to be the main engine for development (World Bank, 2008), (ii) considering that growth and transformation in the agriculture sector will boost demand for non-agricultural products and release labour and a surplus for investment in other sectors of the economy.

In this context, governments are becoming more aware of the need to ensure that new policies are based on sound research and evidence. Yet they often have limited knowledge about the effect of policy decisions and they increasingly request tools for the effective management of decisions that could trigger better sector performances.

A growing number of civil society and professional organizations – and also governments – are calling for improved transparency in the policy-making process, including information on objectives pursued, measures and instruments adopted to achieve these objectives, and effects they generate.

Evidence-based policy dialogue between a wide range of stakeholders is not yet common practice. However, it is expected to become the cornerstone of coordinated policy-making efforts aimed at enhancing sector performances, given the role and responsibilities assigned to the agriculture sector.

To achieve these goals, it is widely recognized that there is a need to bridge two critical gaps, particularly in Africa. These are:

- **The frequent divide between data analysis and policy-making.** This involves bringing together the two communities of statisticians and policy analysts on the one hand, and policy-makers on the other, by ensuring that the supply of information from the former group matches the demand for evidence from the latter. Demand for data analysis needs to be nurtured to ensure that policy-makers continue to see the benefits of evidence-based policy dialogue and decision-making.
- **The data gap.** Governments have yet to make a long-term commitment to invest in, and carry out sustained efforts towards maintaining or developing, sound data and statistics systems as a strategy for better informed decision-making. Setting up of a systematic policy monitoring system offers opportunities for identifying data and information gaps.

In response to these challenges, think tank organizations are emerging around the world, seeking to supply African governments with evidence-based information that might have policy and political impacts. However, in Africa, governments have not yet invested in building their own institutional frameworks and policy monitoring capacities to generate this information on a systematic and sustainable basis by themselves.

MAFAP helps meet this need by establishing policy monitoring and analysis systems in a growing number of developing countries, primarily in Africa. MAFAP recognizes that in order to achieve objectives in the food and agriculture sector, governments can use two main categories of instruments to influence change – policies and public expenditure. Governments use policies to change the rules governing the economy as a whole (macro-economic policy) or those governing a particular economic sector (sector policies) to guide and modify the behaviour and decisions of agents operating in the economy. This can either be done through the establishment of a legal framework by which economic agents must abide (e.g. food quality or safety norms, property rights, etc.) if they are to avoid the risk of legal prosecution or fines, or it may be achieved through institutional reform. An alternative strategy lies in providing incentives or disincentives to certain behaviours via price and trade policies, input and output marketing policies, social policies (income transfers, safety nets, social security schemes) and finance policies.

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

Some key questions that policy-makers need to answer include the following:

- Do policies in place provide incentives to production, processing and marketing for key food and

agricultural value chains, or do they penalize them?

- Which agents in key agricultural value chains benefit the most from the policies in place? Producers, processors, traders or consumers?
- Which policies should be changed to bring the price incentive structure in the food and agriculture sector more closely into line with government objectives?
- Are policies adequately targeted to reduce market access costs, including transaction costs between urban and rural areas, to narrow the gap between the prices that urban dwellers pay for food and the prices that farmers receive for their produce?
- Is public spending allocated in a way that addresses the key issues faced by the food and agriculture sector? (i.e. What is the most efficient way to improve farmer incomes – input subsidies or investing in a road?)
- Is public investment focusing on key needs?
- Are public resources spent effectively or, at least, strategically, or is an excessive share of it used for administration?
- Are policy incentives and public expenditure coherent, or do they sometimes send contradictory signals to the economy, resulting in wastage of scarce public resources?
- Are current policies harmonious and mutually reinforcing, or are they disconnected or even mutually counter-productive?

Several of these questions are outside the scope of MAFAP, or cannot be fully answered using its methodology<sup>5</sup>. However, in order to provide governments with the information they need, MAFAP assumes that there are three main policy monitoring domains:

- ✓ monitoring of price incentives and disincentives to production, consumption and trade/marketing resulting from policies in place;
- ✓ monitoring of public expenditure, including national budget and aid flows; and
- ✓ monitoring of coherence between objectives pursued, policies implemented and/or public expenditures allocated to achieve these objectives, and the effects these measures have on price incentives for producers and consumers of key agricultural commodities.

The MAFAP analysis is therefore underpinned by a host of policy indicators, which are of value to a wide variety of stakeholders, including national governments, farmers and other civil society organizations, regional economic communities and development partners. These indicators provide quantitative information on

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5 A full description of the MAFAP methodology is available on the MAFAP website at [www.fao.org/mafap](http://www.fao.org/mafap)

food and agricultural policies, including both market interventions and budgetary expenditures, and measure the scale of development challenges faced by the agriculture sector. The indicators offer a starting point for addressing two overarching questions about policy choices and investment decisions. Firstly, are current agricultural policies the most appropriate for addressing the country's policy objectives with respect to development, food security, poverty reduction and natural resource use? If not, what reforms would help change this? Secondly, is expenditure being effectively targeted to areas where the need is greatest and potential returns are the highest?

A central principle is that these indicators are harmonized across countries to allow for a comparative assessment of policy priorities and investment needs, and to facilitate exchange on policy experiences. Another important function of the indicators is to establish a quantitative record of policies and investments that have been put in place, and to maintain that record over time. Such information is a prerequisite for a long-term assessment of whether instruments are adequately targeting stated objectives, and for ensuring that lessons can be learned from policy experiences.

MAFAP works closely with national government and relevant research centres to build sustainable, country-owned policy monitoring systems that can produce the necessary indicators on a regular basis.

Policy monitoring, as proposed by MAFAP, is therefore a policy management instrument to:

- Trace and analyse the effects of policies;
- Assess the effectiveness of policies in achieving their intended objectives;
- Identify critical factors influencing the effectiveness of policies in achieving their intended objectives;
- Identify external factors/events influencing policies and their effects;
- Identify unintended side-effects of policies; and
- Provide prompt feedback on the results of policy decisions to policy-makers.

## 2. Measuring the impact of policy and market performance through prices

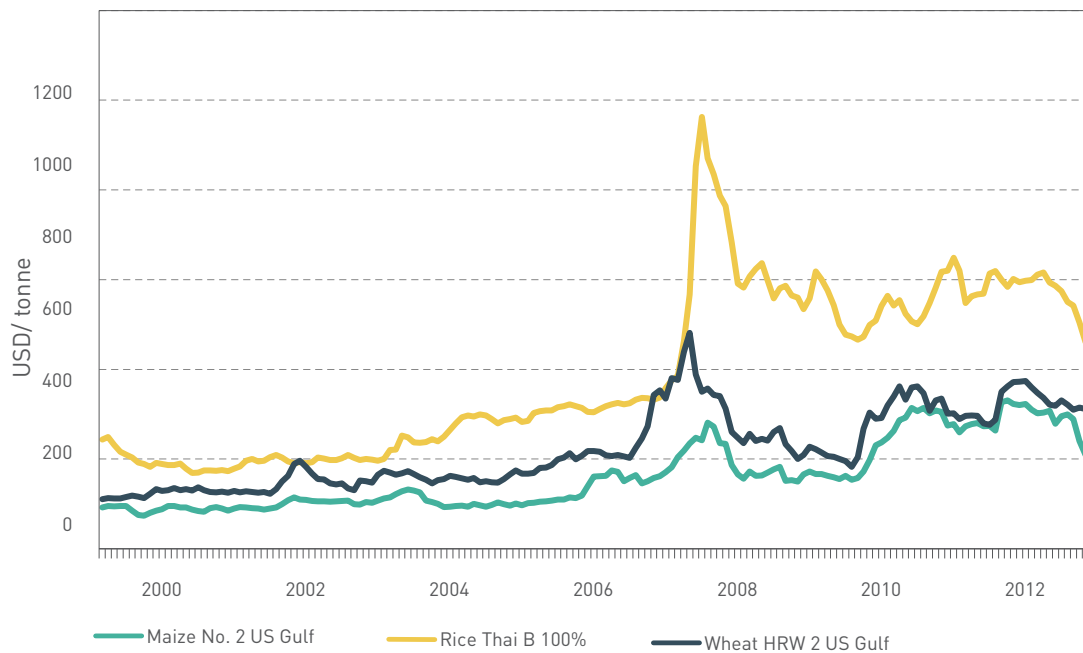
MAFAP's price incentives analysis is based on a comparison between the domestic price for a given agricultural commodity and the price of the commodity in the international market. This international price is considered a benchmark price for the commodity that is free of influence from domestic policy and market distortions, and is made comparable to domestic prices by adjusting for trade and transaction costs, as well as quantity/quality factors. In the absence of barriers, trade would assure that domestic and international prices align, subject to transaction costs and quality/quantity factors. However, in addition to trade barriers, volatility of international commodity prices may also affect this alignment to a significant degree. When volatility is prevalent, price transmission may be reduced and/or delayed by adjustment costs or contract arrangements undertaken to mitigate price fluctuation. International price transmission has been the subject of substantial research, and generally indicates that domestic prices adjust incompletely over time to variations in international prices (Rapsomanikis, Hallam, Conforti, Commodity Market Review 2003-2004).

The period under review (2005-2010) was marked by intense price volatility, unprecedented since the 1970s. This instability is considered to have started in 2006 and was still in process in 2013. It certainly represents the most serious period of volatility to have occurred since the implementation of the Agreement on Agriculture of the Uruguay Round, whereby for the first time, all trade in agricultural commodities was bound by *ad valorem* and absolute tariffs. Trade barriers and binding of tariffs may increase the sensitivity of domestic prices to international price volatility.

As illustrated in Figure 1 monthly price volatility in international prices for three key cereal commodities – wheat, maize and rice – rose significantly after 2005. Prices were low (historically low in real terms) early in the first decade of the millennium as a result of favourable cost conditions, rising productivity and reduced demand pressures due to the Asian crisis of the late 1990s. However, underpinned by rising demand pressures associated with economic growth across the developing world and a burgeoning biofuel sector, prices started to recover. This was compounded by slow production growth due to rising energy costs, particularly in developed countries.



FIGURE 1. INTERNATIONAL REFERENCE PRICES FOR CEREALS

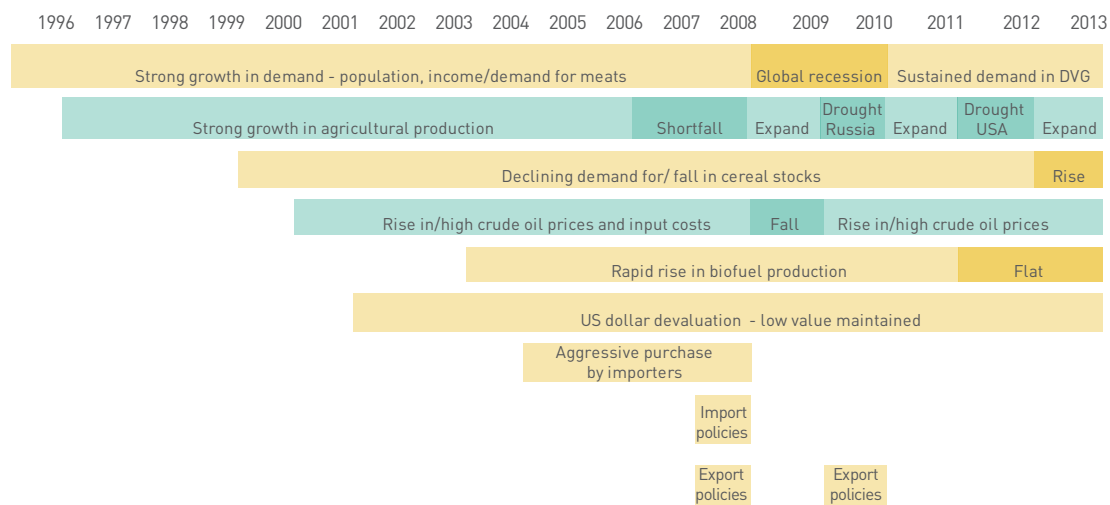


Source: <http://www.fao.org/economic/est/statistical-data/est-cpd/en/>

In late 2007 and early 2008, a ‘perfect’ storm of factors drove all commodity prices, including those of crude oil, significantly higher, leading to global impacts affecting commodity markets. Policy reactions exacerbated international price volatility. Fears of the impact of higher prices on domestic consumers and food insecurity led key international suppliers to ban or tax exports, and importers to reduce tariffs and buy products at inflated prices. Rice was affected the most, with prices more than doubling during the first half of 2008. The Great Recession, brought on by the financial crisis of late 2008, coupled with high supply response to strong price related incentives, led to a significant fall in commodity prices, especially for wheat and maize in late 2008 and 2009. In some countries, failure to increase stocks was compounded by droughts – particularly Russia in 2010 and the United States of America (USA) in 2012 – causing further price volatility in markets.

The main factors underlying high international price volatility – rising demand in developing countries due to income growth; high biofuel production in key exporting countries such as Brazil and the USA; a low US dollar; higher production costs due to rising energy and environmental costs – are expected to remain in place for some time (OECD-FAO Agricultural Outlook, recent issues) (Figure 2) Furthermore, policy factors, such as the trend towards implementing export restrictions, may also impact international markets. If so, high levels of price volatility may continue to hinder the interpretation of international prices as benchmarks for domestic price assessments.

FIGURE 2. TIMELINE AND CAUSES OF INTERNATIONAL PRICE VOLATILITY



Source: Author's adapted from Trostle (2008) and Prakash (2011)

As a response to food price instability, African governments were quick to adopt a set of food and agricultural policies to mediate the effects. The immediate priority has often been to protect consumers from food price spikes, since most African countries are net importers of food products. Removal of import taxes, tax breaks for importers, subsidized sales, price ceilings and release of food stocks have been some of the policy tools commonly used by governments to limit the impact of food price increases on domestic consumers. Export restrictions and taxes have also been applied, a policy that has sometimes aggravated food deficiency in neighbouring countries. At the same time, governments have also often sought to develop their production capacities, so as to become less reliant on imports and more resilient to external shocks. Balancing sometimes conflicting policy priorities has therefore been a difficult exercise that governments have had to undertake<sup>6</sup>.

The period analysed by MAFAP – 2005 to 2010 – is therefore characterized by highly turbulent international, regional and domestic markets, which triggered an unprecedented number of policy responses from African governments. MAFAP indicators offer a clearer picture of how the policy environment and government policy decisions affected price incentives for producers and consumers during these exceptional circumstances.

<sup>6</sup> FAO's Food and Agriculture Policy Decision Analysis (FAPDA) report (2013) provides a wealth of additional information on food and agricultural policies implemented by developing countries over the period.

## 2.1 An overview of MAFAP policy indicators

MAFAP monitors and analyses the effects of domestic policies and market performance on price incentives for agents in key agricultural value chains. MAFAP uses a common set of indicators, which allow for comparison between years, countries and commodities. These indicators include the Nominal Rate of Protection (NRP), which measures price incentives at two points in commodity value chains – the main wholesale market (considered a proxy for the effect of policies on consumers) and the farm gate (considered a proxy for the effect of policies on producers). The NRP estimates the percentage deviation of domestic prices received by wholesalers and producers from corresponding reference prices, which represent the prices they could have received if policy and market distortions were removed. Reference prices are the international price of the commodity (considered the distortion-free price) valued at the wholesale and producer level by adjusting for trade and transaction costs, as well as quality/quantity factors.

When measuring the NRP, there are three possible outcomes. The first is an NRP of zero percent, which means that producers or wholesalers received a price equal to the reference price. This reflects neutral policy impact on commodity prices, which is the ideal situation from an economic efficiency standpoint. The second possible outcome is an NRP greater than zero percent, which means that producers or wholesalers received a price higher than the reference price (price incentives). This indicates that the policy environment supports producers or wholesalers 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. Conversely, the third possible outcome is an NRP of less than zero percent, which means that producers or wholesalers received a price lower than the reference price (price disincentives). This indicates that the policy environment supports consumers and/or taxpayers through transfers from producers or wholesalers, who are penalized. As a result, fewer resources are allocated to the commodity relative to the optimal allocation.

In addition to measuring the effects of explicit policies on price incentives for producers through the NRP, MAFAP's analysis goes one step further, by estimating the average Market Development Gap (MDG). This is the average cost that inefficiencies in domestic value chains represent to producers. The MDG captures costs due to exchange rate misalignments and high market access costs within commodity value chains, which may result from factors such as local taxes and fees, poor infrastructure, high processing costs, the concentration of profits among downstream marketing agents (i.e. non-competitive behaviour), bribes and other non-tariff barriers. These inefficiencies represent additional disincentives at producer level, which stem from implicit policies, such as bribes, or even a lack of policy, such as limited investment in infrastructure. Thus, MDGs highlight potential gains, or cost savings, that could be achieved if the necessary investments were made and adequate measures taken. In this way, the MDG indicator allows for a clear distinction between price disincentives resulting from market inefficiencies and those resulting from explicit trade and market policies adopted by the government.

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<sup>7</sup>. 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.

More detailed information on the methodology and calculation of indicators is provided in the MAFAP methodological implementation guide<sup>8</sup>.

## 2.2 Price incentives for the agriculture sector

### Key findings

Overall, policy and market performance in the ten African countries analysed by MAFAP led to farmers receiving prices that were below reference prices (price disincentives).

The dearth of appropriate policies to address the high costs of marketing and transport from farm gate to wholesale markets proved to be the main cause of price disincentives for agricultural producers in the ten countries.

Price disincentives showed a diminishing trend, driven by sharp increases in prices for selected commodities on the international market in 2007/08, as well as by food shortages, which affected some of the countries. The following years, 2009 and 2010, showed a progressive alignment of domestic producer prices with reference prices, indicating that the policy environment had less of an impact on domestic prices. However, further analysis of price incentives for the years following 2010 will reveal whether this trend will be sustained in the long term.

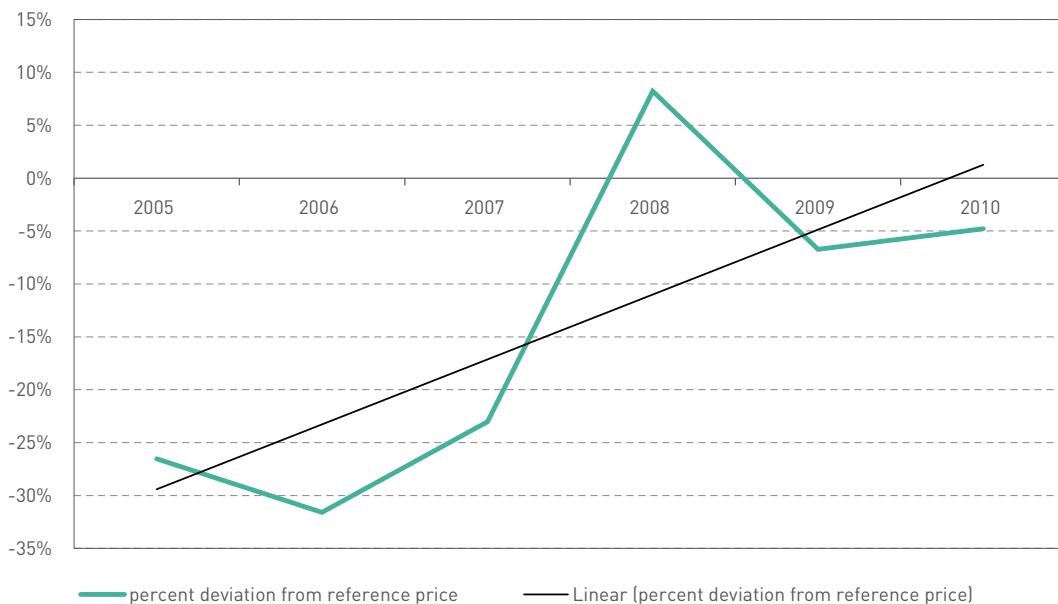
Between 2005 and 2010, market and trade policies, coupled with poor market performance, depressed producer prices by an average of 10 percent (Figure 3). Indeed, farmers faced strong price disincentives in 2005, 2006 and 2007. However, the policy environment changed dramatically in 2008, as on the whole, producers faced price incentives. In 2009 and 2010, producers received prices that were nearly equal to reference prices, indicating that the policy environment had a less distortive impact on domestic prices in these years.

7 Further insights on policies and other determinants affecting price incentives in each country are provided in Section 5.

8 Barreiro-Hurlé, J. and Witwer, M. (2013). MAFAP Methodological Implementation Guide: Volume I. Analysis of price incentives and disincentives. MAFAP Technical Notes Series, FAO, Rome, Italy.

Over the period 2005-2010, price disincentives declined in eight of the ten countries analysed by MAFAP (Figure 4). This improvement mainly resulted from sharp increases in domestic and international prices during the global commodity price crisis in 2007/08 – whose effects in terms of rising food prices were partially transmitted to domestic producers – and to short-term fluctuations in domestic prices due to food shortages in some countries. Furthermore, the convergence of the NRP for all ten countries towards zero percent (Figure 3) in 2009 and 2010 was largely driven by declining price disincentives for most export and food security commodities (Figure 11 and Figure 13, respectively), though this positive trend was partially offset by strong and increasing price disincentives for import commodities (Figure 9).

**FIGURE 3. AVERAGE PERCENTAGE DEVIATION OF PRODUCER PRICES FROM EQUIVALENT WORLD PRICES FOR THE AGRICULTURE SECTOR IN THE TEN COUNTRIES ANALYSED (OBSERVED NRPS\*), 2005-2010**



\*Observed NRPs measure the effect of distortions from explicit market and trade policies, as well as overall market performance, on domestic prices

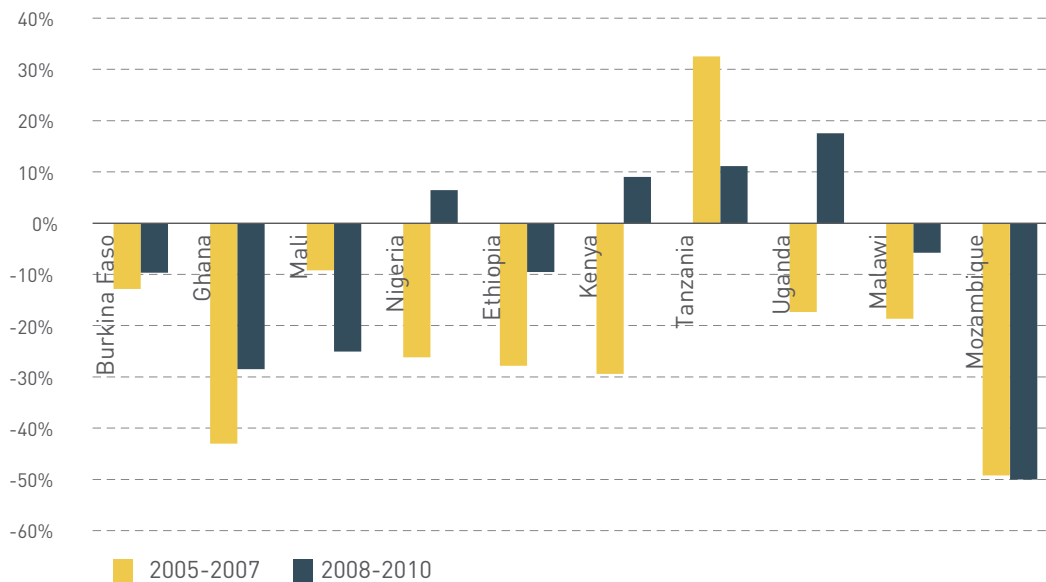
Source: MAFAP

For seven out of the ten countries analysed by MAFAP, trade restrictions on either imported or exported cereals, as well as the absence of policies targeting thinly-traded commodities – cassava, yam, groundnuts and sesame – were among the main determinants of disincentives to producers (Figure 4). Limited measures to boost productivity and improve infrastructure prevented prices for these commodities from being competitive on the international market.

In Uganda, price incentives were mainly due to export support policies implemented by the government. In Kenya, high domestic prices during food shortages in 2008 and 2009 were the main source of price incentives, causing uncertainty about the sustainability of this trend over time. In Tanzania, price incentives for

pulses (a non-traditional export), which were due to a lack of domestic storage<sup>9</sup>, outpaced disincentives for traditional export crops (coffee, cashew nuts and cotton).

**FIGURE 4. AVERAGE PERCENTAGE DEVIATION OF PRODUCER PRICES FROM EQUIVALENT WORLD PRICES FOR THE AGRICULTURE SECTOR BY COUNTRY (OBSERVED NRPS\*), AVERAGES 2005-2007 AND 2008-2010**



\*Observed NRPs measure the effect of distortions from explicit market and trade policies, as well as overall market performance, on domestic prices

Source: MAFAP

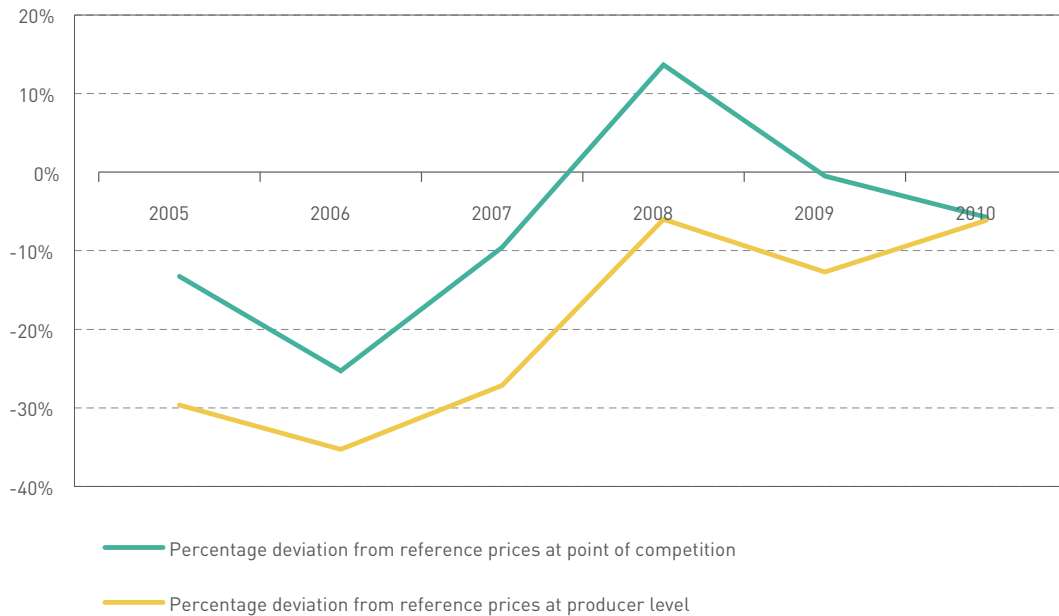
Figure 5 compares price incentives at the point of competition with those at the farm gate for food security commodities<sup>10</sup>. As illustrated, downstream agents<sup>11</sup> were less heavily penalized than producers in all years except 2010, when they faced disincentives equal to those faced by producers. MAFAP results for commodities important for food security clearly highlight the fact that downstream agents are more closely connected to the international market compared to producers, even though prices they received were not aligned with reference prices in all years. Since prices at the point of competition are a proxy for the effect of policies on consumers, MAFAP results indicate that consumers paid prices below the reference prices in all years except 2008. This suggests that in general, policies adopted during the 2007/08 food price crisis in an effort to make food more affordable for consumers – such as price ceilings, export bans and import subsidies – did not produce the expected outcome.

<sup>9</sup> Lack of storage leads Tanzania to export at low prices during harvest and face higher domestic prices during the rest of the season.

<sup>10</sup> Commodities important for food security include primarily: rice, maize, cassava, groundnuts, sorghum and millet, depending on the country studied.

<sup>11</sup> Depending on the commodities studied, the point of competition selected for the analysis may correspond to the wholesale market or the processing factory. Hence prices at point of competition may refer to processor or wholesale/trader level.

**FIGURE 5. AVERAGE PERCENTAGE DEVIATION OF WHOLESALE PRICES VS. AVERAGE PERCENTAGE DEVIATION OF PRODUCER PRICES FROM EQUIVALENT WORLD PRICES FOR FOOD SECURITY COMMODITIES IN THE TEN COUNTRIES ANALYSED (OBSERVED NRPS\*), 2005-2010**



\*Observed NRPs measure the effect of distortions from explicit market and trade policies, as well as overall market performance, on domestic prices.

Source: MAFAP

## Market Development Gaps

### Key findings

Increasing Market Development Gaps (MDGs) over time reveal the growing role that market inefficiencies have had in generating price disincentives for farmers in all countries. Such inefficiencies mainly include: overvalued exchange rates, government taxes and fees, bribes, high transport and processing costs and the high concentration of profits among intermediaries (i.e. non-competitive behaviour) as well as a large and growing number of intermediaries in domestic markets.

The MDGs measured for the period 2005-2010 were mainly caused by the following factors:

- The overvaluation of the FCFA – the official currency of Burkina Faso and Mali – against the Euro by an estimated 20 percent since 2007<sup>12</sup>;

12 See Etta-Nkwellea, M., Jeonga, J.-G. et al. (2010). "Misalignment of the real exchange rate in the African Financial Community (CFA zone) and its policy implications." *Applied Financial Economics* 20(15) for the estimation of the FCFA overvaluation in Burkina Faso and Mali.

- Excessive and increasing access costs due to poor infrastructure and market inefficiencies, especially in rural areas where roads are usually less developed and where roadblocks and weighbridges are more common;
- High profit margins captured by intermediaries, such as traders or importers/exporters, as a consequence of market power and monopolistic behaviour; and
- Taxes, fees (excluding fees for services) and bribes along commodity value chains.

**BOX 1. MARKET DEVELOPMENT GAP COMPOSITION AND APPROACH**

In addition to measuring the effect of explicit market and trade policies on domestic prices, the MAFAP methodology (summarized in paragraph 2.1) estimates additional price disincentives due to exchange rate policy and value chain inefficiencies, such as poor market infrastructure, high processing costs, excessive profit margins captured by various marketing agents, bribes and other non-tariff barriers. This indicator is referred to as the Market Development Gap (MDG).

While MDGs are particularly useful in identifying disincentives stemming from value chain inefficiencies, as opposed to trade and market policies, it should be noted that this indicator requires detailed and disaggregated information on marketing and transaction costs, which is often unavailable.

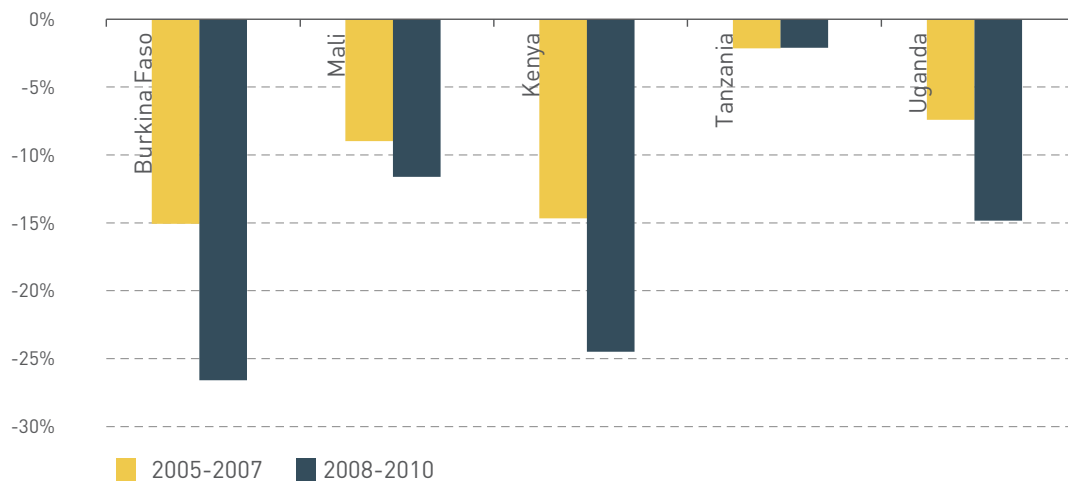
This report presents MDGs for five of the ten countries analysed by MAFAP – Burkina Faso, Kenya, Mali, Tanzania and Uganda – where country partners were able to carry out in-depth research or collect primary data on exchange rate misalignments and excessive market access costs. MDG estimates were also calculated for commodities analysed in the other countries, although these were mainly based on secondary, and in some cases, outdated information.

Policy distortions, especially those linked to trade policies, had a limited impact on domestic prices compared to distortions caused by inefficiencies in domestic markets throughout the period analysed. The MDG analysis reveals that in spite of this, market inefficiencies in commodity value chains, and those caused by overvalued exchange rates, increased in four out of the five countries for which the MDG was computed<sup>13</sup> (Figure 6). In Burkina Faso and Mali, the increase mainly corresponded to the overvaluation of the FCFA against the Euro since 2007. However, in Kenya and Uganda, a variety of factors related to processing and marketing costs affected MDGs. Such inefficiencies cannot be tackled through trade or price policies, but rather they require macro-economic adjustments, improved regulation to limit corruption and administrative inefficiencies, improved Market Information Systems (MIS) to reduce information asymmetries, reduction of barriers to trade for traders and/or processors and long-term investment in market infrastructure.

<sup>13</sup> Due to limited data availability and quality, reliable MDGs could only be calculated in five MAFAP countries



FIGURE 6. MARKET DEVELOPMENT GAP (MDG\*) IN THE AGRICULTURE SECTOR BY COUNTRY, AVERAGES 2005-2007 AND 2008-2010

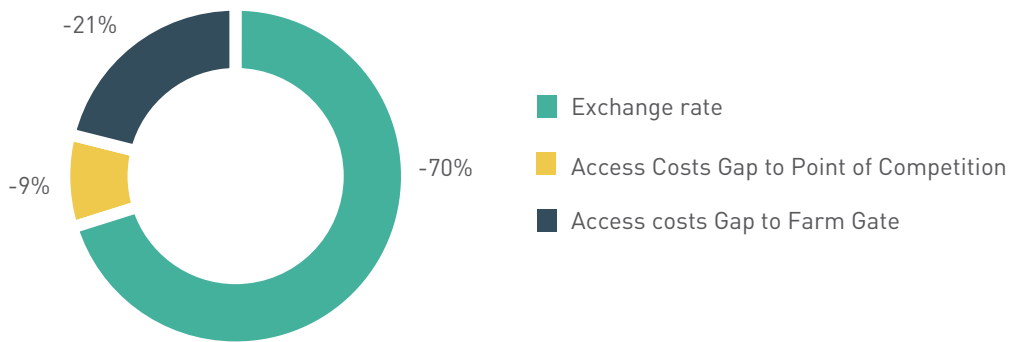


\*MDGs are calculated as a percentage of the reference price, which is the price that producers could have received if domestic policy and market distortions were removed.

Source: MAFAP

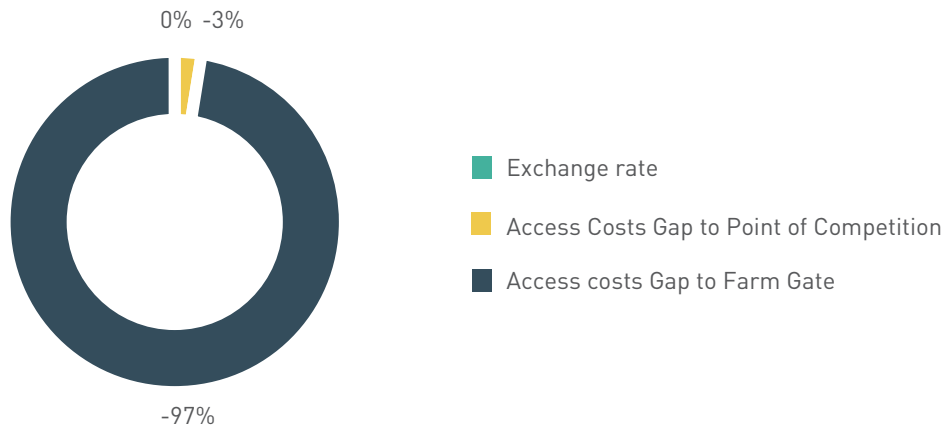
The two charts (Figure 7 and Figure 8) below show the composition of the MDG for the agriculture sectors in Burkina Faso and Uganda. In both countries, the farm gate is the point in the value chain that incurs the most excessive costs. This is reflected by the share of the access costs gap (i.e. the difference between efficient and non-efficient marketing costs) at farm gate, as opposed to the access costs gap at the point of competition. The “point of competition” may refer to processors, traders or wholesalers, which appear to be less constrained by market inefficiencies in the two countries. The overvalued exchange rate in Burkina Faso was the main element generating additional price disincentives for farmers, especially for those producing export products. In Uganda, where the government’s policy has been to limit market interventions as much as possible, farmers bore nearly all of the costs from market inefficiencies.

FIGURE 7. MDG COMPOSITION IN BURKINA FASO



Source: MAFAP

FIGURE 8. MDG COMPOSITION IN UGANDA



Source: MAFAP

On average MDGs for the five countries implied an additional price disincentive (average MDG) of -13 percent over the period analysed, with the highest value registered in Burkina Faso (-27 percent during the period 2008-2010), mainly due to the exchange rate misalignment.

MDGs can thus shed light on policy changes needed at macro-level. These may include an adjustment of the exchange rate, as well as investments aimed at reducing excessive costs incurred by farmers to access markets.

## 2.3 Price incentives for commodity groups

The following sections include an analysis of price incentives for three commodity groups: imports, exports and commodities important for food security. Grouping commodities according to their trade status facilitates the analysis of policy impacts through prices. Indeed, policy measures, and especially trade policies on food and agriculture, change depending on the trade status of the commodities. Commodities were classified as import or export, based on their net trade status. Commodities important for food security are those that account for a significant share of a country's diet. However, it is worth noting that imported and exported commodities can also be relevant to food security; imports of food staples raise food availability within the domestic market, while exports generate income and thus increase food access. The commodities important for food security group does not therefore mutually exclude the other groups and contains both imported and exported commodities. The list of commodities analysed per trade status and per country is available in Annex 2, as well as the value of production per region.

### Import commodities

#### Key findings

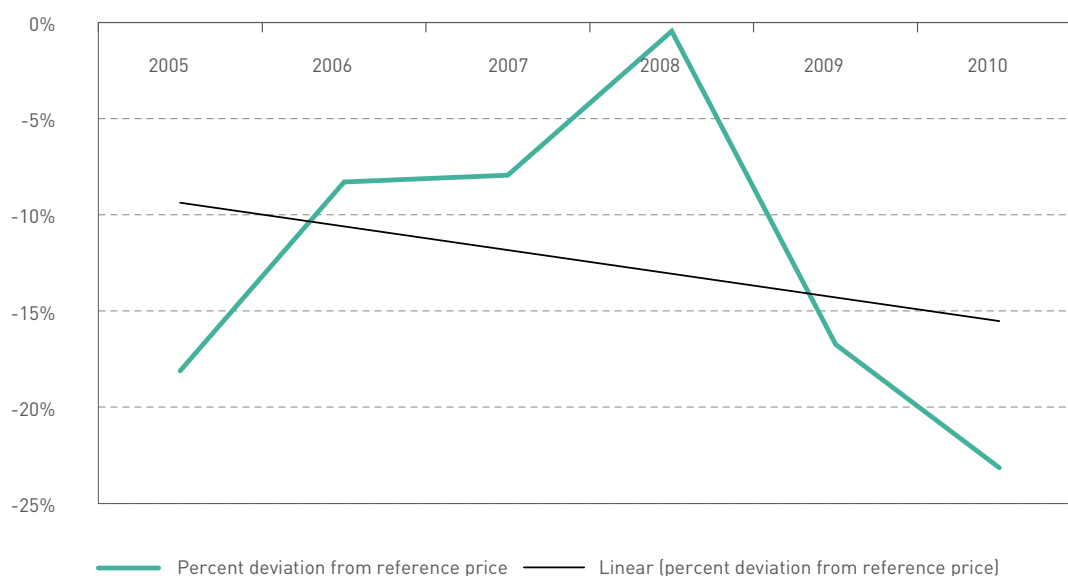
Despite the presence of import tariffs<sup>1</sup> on key import commodities, overall, farmers received prices that were lower than the reference price (price disincentives). Import tariffs should have resulted in higher prices for farmers, compared with their international price equivalents. However, excessive access costs and inefficiencies in the value chain more than compensated the positive effect of import tariffs. During the food price crisis, governments waived most import tariffs for staple foods. Nevertheless, in 2008 farmers obtained prices that were closer to international reference prices, partly due to supply shortages, which occurred in some of the countries studied. Once the food price crisis was over, the general pattern of disincentives to farmers was restored (Figure 9).

In countries where producers received prices that were higher than the reference price (price incentives), such as Burkina Faso, Ghana, Tanzania and Uganda, these were determined by the combination of international price trends (2007 and 2008) and import policies. However, poor price transmission (see MDG section) prevented producers from fully benefiting from import protection measures and/or international price surges.

<sup>1</sup> See Section 5 for more details about tariffs and other import measures by country.

With the exception of Tanzania, all the countries analysed by MAFAP imposed import tariffs for major agricultural commodities during the period 2005-2010. It would therefore be expected that farmers would benefit from domestic prices that were higher than reference international prices. However, this was not the case. On the whole, farmers received lower prices than those that could be expected in the absence of policies. Although producer prices tended to be close to international level in 2008, they diverged strongly in a negative direction in 2009 and 2010 (Figure 9). It is worth noting that the high levels of price disincentives recorded in Ethiopia and Nigeria had a significant impact on overall results due to the large volumes of production in these two countries.<sup>14</sup>

**FIGURE 9. AVERAGE PERCENTAGE DEVIATION OF PRODUCER PRICES FROM EQUIVALENT WORLD PRICES FOR IMPORT COMMODITIES IN THE TEN COUNTRIES ANALYSED (OBSERVED NRPS\*), 2005-2010**



\*Observed NRPs measure the effect of distortions from explicit market and trade policies, as well as overall market performance, on domestic prices.

Source: MAFAP

A reduction in price disincentives over the period of analysis was observed in Ethiopia and Malawi, while price disincentives increased in Mali and Nigeria. In Ghana and Kenya, domestic prices progressively aligned with reference prices, as was also seen in Tanzania and Uganda. However, prices for the former two countries moved from disincentives towards levels that were close to the reference prices, whereas for the latter two countries, prices moved from incentives towards levels close to the reference prices (Figure 10). In Burkina Faso, Mali and Nigeria, the policy environment in 2008-2010 proved more distortive, as domestic prices further diverged from reference prices: incentives increased in Burkina Faso, whereas producers faced even stronger disincentives in Mali and Nigeria.

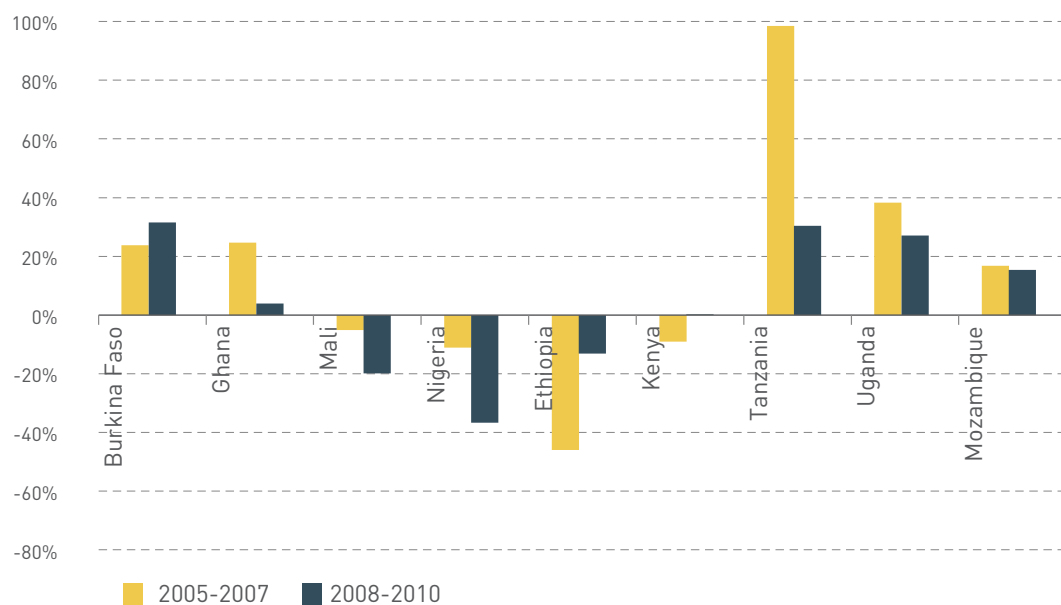
14 Results were weighted by total value of production in each country. Information on value of production is available in Annex 2.

Producers in six out of ten countries (Burkina Faso, Ghana, Kenya, Mozambique, Tanzania and Uganda) received price incentives due to the protection granted by restrictive trade policies, primarily in the form of import tariffs. Those countries temporarily removed import tariffs as a policy response to the food crisis of 2007-2008. This generated lower price incentives, as expected, in all countries but Burkina Faso and Kenya.

Consumer-oriented policies, such as subsidized prices for import cereals and massive food aid, generated price disincentives for producers in Ethiopia, Mali and Nigeria. Furthermore, Mali and Nigeria also saw import tax removed, which as expected, aggravated price disincentives in these countries.

A variety of country-specific factors have also impacted price incentives received by producers. These are described in further detail in Section 5, which summarizes MAFAP results for each country. The most salient factors are: oligopoly of importers that reduce or annihilate the impact of import tax suppression, and hence maintains price incentives in the country (Burkina Faso, Ghana); the landlocked nature of Burkina Faso, Ethiopia and Mali, leading to steep transport costs and domestic prices; the high value of certain commodities which strongly affect aggregate indicators (the inefficiencies in the palm oil value chain in Nigeria; the change in the trade status of rice in Tanzania).

**FIGURE 10. AVERAGE PERCENTAGE DEVIATION OF PRODUCER PRICES FROM EQUIVALENT WORLD PRICES FOR IMPORT COMMODITIES BY COUNTRY<sup>15</sup>(OBSERVED NRPS\*), AVERAGES 2005-2007 AND 2008-2010**



\*Observed NRPs measure the effect of distortions from explicit market and trade policies, as well as overall market performance, on domestic prices.

Source: MAFAP

15 No import commodity was analysed in Malawi.

## Export commodities

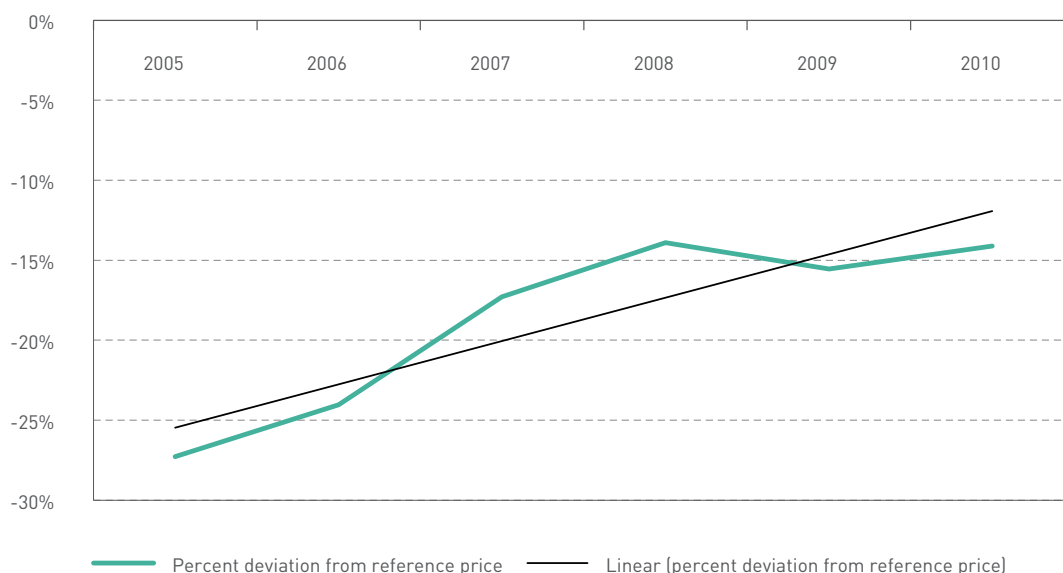
### Key findings

The high incidence of taxes, lack of concrete measures to promote exports and a dearth of investment in market infrastructure combined to generate price disincentives for producers of export commodities. This means that producers received prices lower than the reference prices.

Price disincentives for export products at the farm gate showed a downward trend in most of the countries studied. While this can be traced to a decline in state intervention for export value chains, as governments moved towards a more liberalized policy environment – particularly in Ghana and Uganda – there was evidence of increased state support for cotton producers in West Africa.

Producers of export commodities faced stronger price disincentives than producers of import commodities and commodities important for food security. However, domestic prices converged towards reference prices during the last years of the period under review (Figure 11).

**FIGURE 11. AVERAGE PERCENTAGE DEVIATION OF PRODUCER PRICES FROM EQUIVALENT WORLD PRICES FOR EXPORT COMMODITIES IN THE TEN COUNTRIES ANALYSED (OBSERVED NRPS\*), 2005<sup>16</sup>-2010**



\*Observed NRPs measure the effect of distortions from explicit market and trade policies, as well as overall market performance, on domestic prices.

Source: MAFAP

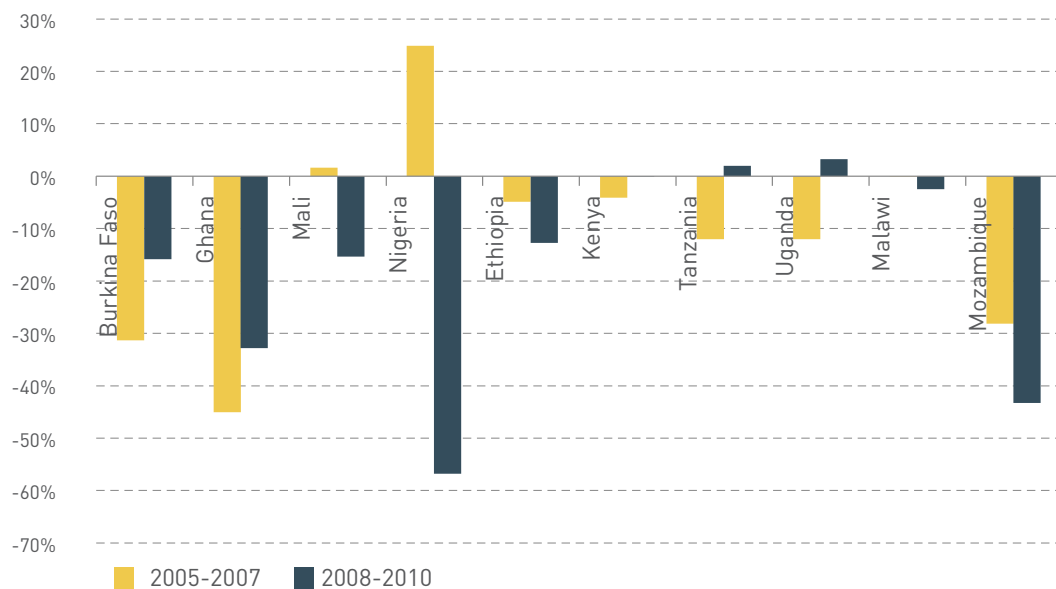
16 No data available for Nigeria in 2005.

As already highlighted by Anderson and Masters (2009), export taxation is progressively being phased out in Africa. However, our findings show that in those countries where export taxes are applied, such as in Ghana for cocoa, producers of exports generally faced price disincentives. In Tanzania, the government raised the export tax on cashew nuts from 10 percent to 15 percent to promote domestic processing, which resulted in higher price disincentives for producers. Other measures, such as export restrictions on food staples, particularly those imposed during the food crisis in 2007/08, were also a source of price disincentives for export producers in Burkina Faso, Ethiopia, Mali and Nigeria. Such restrictions resulted in food importers paying a higher cost for importing commodities important for food security (Anderson and Masters, 2009).

Most of the countries remained strongly dependent on a few traditional exports, such as tea and coffee in the case of Kenya, coffee for Ethiopia, cocoa for Ghana and Nigeria, cotton and live cattle for Burkina Faso and Mali and tobacco for Malawi and Mozambique. Conversely, the growing share of non-traditional exports was particularly visible in Uganda, where fish has become increasingly important, as have beans and cashew nuts in Tanzania.

Despite similarities in the type of products exported, especially for countries exporting traditional commodities, the incentives results appear heterogeneous due to differences in sector specific policies (Figure 12).

**FIGURE 12. AVERAGE PERCENTAGE DEVIATION OF PRODUCER PRICES FROM EQUIVALENT WORLD PRICES FOR EXPORT COMMODITIES BY COUNTRY (OBSERVED NRPS\*), AVERAGES 2005-2007 AND 2008-2010**



\*Observed NRPs measure the effect of distortions from explicit market and trade policies, as well as overall market performance, on domestic prices.

Source: MAFAP

The policy focus on traditional export policies, combined with export taxation and restrictions, generated marked market distortions in five countries (Burkina Faso, Ethiopia, Ghana, Mali and Nigeria). The disparate nature of policies in place, together with high access costs, proved the main determinant of different price incentives for cocoa in Ghana and Nigeria. In Ghana, cocoa producers faced slight disincentives, which were equivalent to the export tax, revealing a connection between farmers and international markets. This was in contrast to Nigeria, where cocoa producers faced significant disincentives. While tree ageing and high access costs have been issues in both countries, the commitment of the Ghanaian government to increase the share of farm gate price relative to the international price was clear. Ghana has also introduced a quality control system. As a result, high quality cocoa beans exported from Ghana were able to fetch higher prices, unlike those exported from Nigeria.

In Burkina Faso and Mali, which have similar economies and policy positions, price disincentives were the consequence of overall lack of support for export commodities, with the exception of cotton. The governments of both countries have focused their policy support on cotton by strongly subsidizing prices and offering input subsidies. These measures have, as expected, generated incentives, but they have also placed a significant burden on the budget. Meanwhile, far less policy support has been given to other export commodities, either through budget or price policies. This is particularly striking in the case of live cattle, which represent a large share of both countries' exports and agricultural production. It is a sector for which producers faced important disincentives. No price policies were put in place to support this value chain, and there has been limited investment. Efficiency of the supply chain has been hampered by a high number of intermediaries, ineffective transport – resulting in loss of weight for animals – and poorly organized marketing systems. In Mozambique, interventionist policy support to cotton generated price disincentives stemming from lack of competition between ginners, and low producer prices as a result of a floor price system.

Traditional export crops were also taxed, restricted and incurred high processing costs in Ethiopia (coffee), Kenya (coffee), Malawi (tobacco) and Tanzania (coffee, cotton), resulting in price disincentives. By contrast, producers of non-traditional exports in Tanzania and Uganda received prices that were higher than the reference prices. Indeed, market liberalization and export promotion measures benefited farmers producing export products in Uganda – fish, cotton and coffee – who received prices close to those that would prevail in the absence of policies and market inefficiencies.

Despite continuing to focus first and foremost on traditional exports, all countries other than Tanzania and Uganda have increasingly promoted high value exports. Burkina Faso and Mali have launched major diversification programmes, especially for horticulture and mango. Ethiopia has promoted exports of white haricot beans and sesame. Malawi has promoted new products, such as groundnuts, which have been prioritized and subsidized through the Farm Input Subsidy Programme (FISP).



## Food security commodities

### Key findings

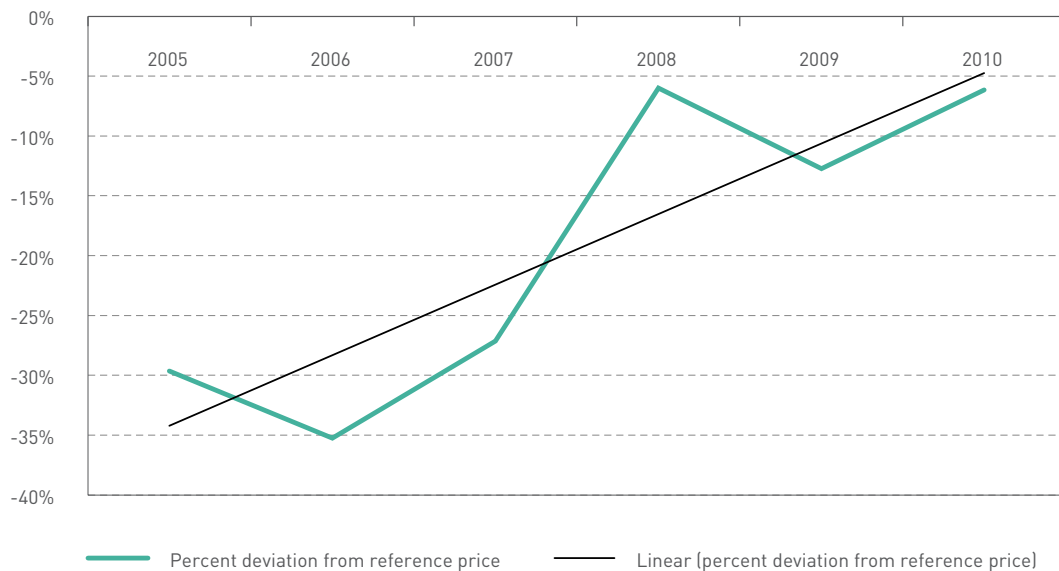
Marketing and transport infrastructure gaps and value chain malfunctioning were the main causes of price disincentives for producers of commodities that are important for food security.

Commodities important for food security and thinly-traded commodities are particularly vulnerable to market inefficiencies, given the lack of policy measures to address these issues. The convergence of domestic prices with reference prices during 2008-2010 was mainly driven by the impact that highly traded cereals – primarily rice – had on the aggregate indicator for the food security commodities sub-group. These cereals were subject to import tariffs, which partly compensated the disincentives registered for most food security commodities in the countries studied.

Highly segmented markets for thinly-traded commodities, coupled with a lack of policies to tackle these inefficiencies, were the main determinants of the price disincentives recorded at the producer level.

On average, for the selected commodities important for food security, domestic prices at the farm gate level were lower than the reference prices farmers would have received in the absence of domestic policies and market inefficiencies (Figure 13). However, price disincentives declined between 2005 and 2010; compared with export and import commodities, the prices received by producers of commodities important for food security came closest to the reference price.

**FIGURE 13. AVERAGE PERCENTAGE DEVIATION OF PRODUCER PRICES FROM EQUIVALENT WORLD PRICES FOR THE COMMODITIES IMPORTANT FOR FOOD SECURITY IN THE TEN COUNTRIES ANALYSED (OBSERVED NRPS\*), 2005<sup>17</sup>-2010**



\*Observed NRPs measure the effect of distortions from explicit market and trade policies, as well as overall market performance, on domestic prices.

Source: MAFAP

Commodities important for food security varied across countries, making it difficult to identify a clear pattern for the ten countries analysed by MAFAP (Figure 14). In Ethiopia, Kenya, Tanzania and Uganda, maize represented an important share of the subset. In Uganda, cassava and banana also played a major role. Furthermore, in Ethiopia, teff and its main substitute wheat were the principal food security crops. Rice was included in the subset for almost all countries analysed by MAFAP.

The MAFAP analysis revealed an overall lack of policy support in all countries. In the case of thinly-traded commodities important for food security, such as root crops, tree nuts or dry-land cereals such as sorghum and millet, there were even trade restrictions. Conversely, the analysis revealed more significant policy support for commodities that are important for food security and are also intensively traded<sup>18</sup>, such as cereals, and rice in particular. This, combined with better connection to regional and international markets, resulted in relatively lower disincentives at producer level. Indeed, during the period 2008-2010, the prevalence of traded cereal crops in the food basket in Ethiopia, Kenya and Tanzania led to an alignment with prices that would prevail in the absence of policies and market inefficiencies. In Burkina Faso, Ghana, Nigeria and

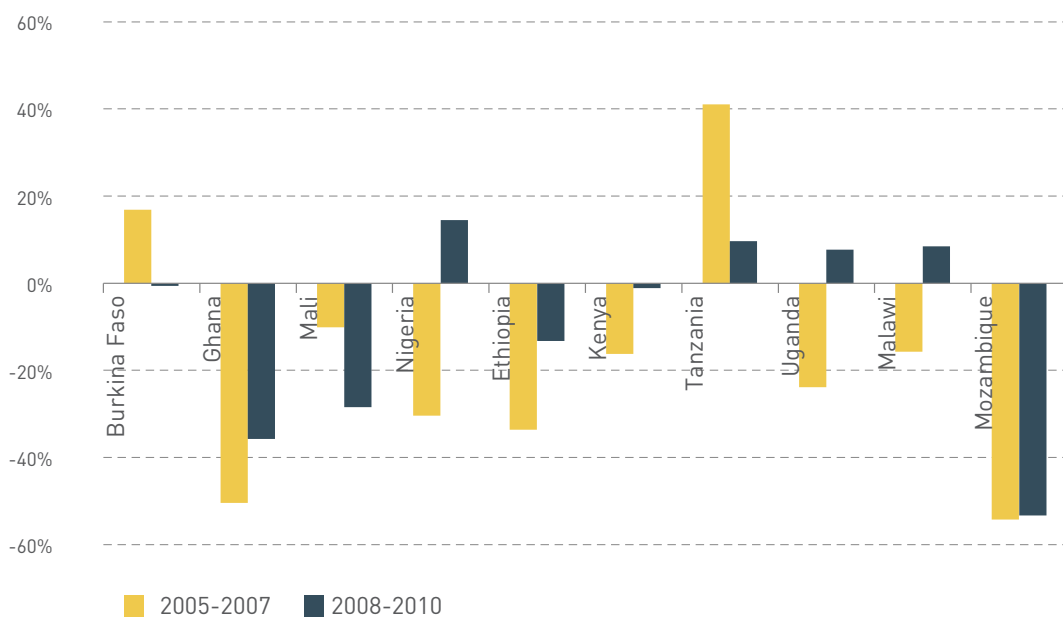
17 No data available for Nigeria in 2005

18 Part of the commodities important for food security are also traded - imported or exported depending on the country - such as rice, wheat, sesame, sugar, beef, fish, palm oil, groundnuts. Policies and main determinants of market incentives/disincentives are also treated in the sections dedicated to export and import commodities, as well as commodity-specific analyses presented in this report.

Uganda, prices also converged towards the reference price, but this was due to country specific factors, and to the specifics of the commodity basket for the food security category.

Burkina Faso, Mali and Tanzania managed to cushion the effects of the food crisis on consumers. This is reflected in the price disincentives that both farmers and wholesalers faced, which tended to translate into more affordable food for consumers, who paid a lower price than the equivalent world price (reference price) for the commodities analysed.

**FIGURE 14. AVERAGE PERCENTAGE DEVIATION OF PRODUCER PRICES FROM EQUIVALENT WORLD PRICES FOR COMMODITIES IMPORTANT FOR FOOD SECURITY BY COUNTRY (OBSERVED NRPS\*), AVERAGES 2005-2007 AND 2008-2010**



\*Observed NRPs measure the effect of distortions from explicit market and trade policies, as well as overall market performance, on domestic prices.

Source: MAFAP

## 2.4 Price incentives for selected commodities

The objective of this section is to compare policy effects on price incentives between multiple countries for four selected commodities and one sub-sector. Cotton, rice, maize and cattle were selected on the basis of the number of countries in which they have relevance in terms of their share of the value of agricultural production, trade and food security.

### Cotton

#### Key findings

All countries studied implemented price setting mechanisms, which produced heterogeneous results in terms of market incentives at producer level.

The cotton value chain in most countries studied was beset by low productivity and low cotton quality, which negatively affected both farm gate and export prices for cotton. Furthermore, processors had strong market power, taking high margins and offering low prices to producers. This eroded price incentives at farm gate level.

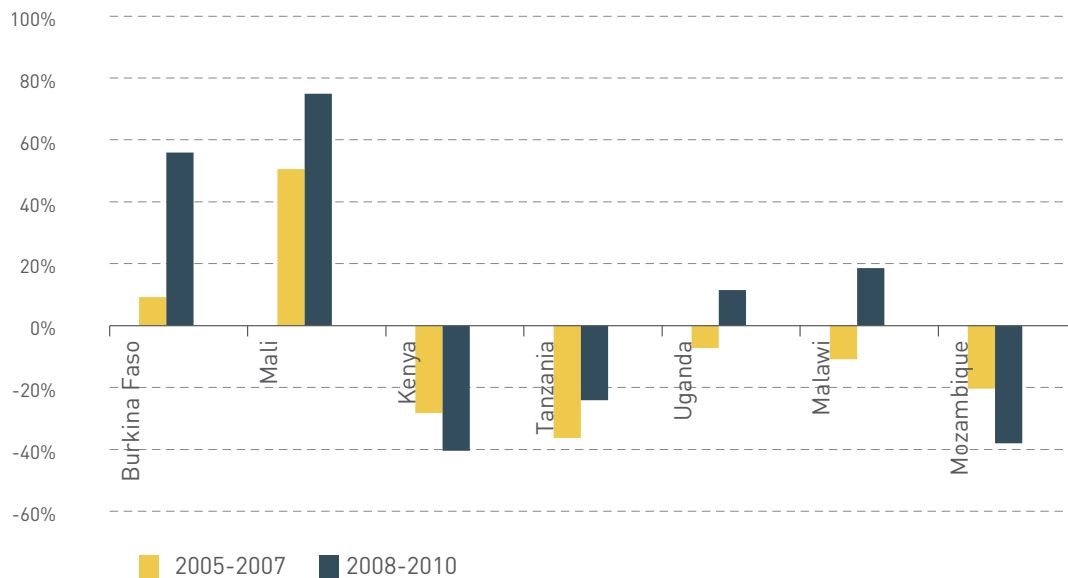
Cotton is produced in seven of the ten countries analysed by MAFAP: Burkina Faso, Kenya, Malawi, Mali, Mozambique, Tanzania, and Uganda. Burkina Faso is the largest producer, followed by Mali and Tanzania (Annex 3). The average production trend, in terms of volume, for the seven countries between 2005 and 2010 was negative (-5%). Production particularly declined in Kenya and Mali. Yields remained stagnant, except in Mali and Tanzania, where they recovered slightly.

In terms of value, cotton lint was the first export commodity in Burkina Faso and Mali between 2005 and 2010, the third in Mozambique and Tanzania, the fifth in Malawi and the eighth in Uganda. Cotton in Kenya is an import commodity. Burkina Faso and Mali are major international suppliers.

It is worth noting that the relatively free cotton trade, combined with a high concentration of exporters and importers, led to substantial world market volatility. International prices have also been strongly affected by production subsidies in developed countries, such as in Europe and the USA.

Despite similarities in terms of policies to support the sector, the structure and trends of market incentives varied widely across countries (Figure 15).

FIGURE 15. AVERAGE PERCENTAGE DEVIATION OF PRODUCER PRICES FROM EQUIVALENT WORLD PRICES FOR COTTON BY COUNTRY (OBSERVED NRPS\*), AVERAGES 2005-2007 AND 2008-2010



\*Observed NRPs measure the effect of distortions from explicit market and trade policies, as well as overall market performance, on domestic prices.

Source: MAFAP

All countries have one or more parastatal organization in charge of promoting and regulating the cotton sector. The degree of control exercised by the parastatal agencies has varied considerably from country to country. Burkina Faso, Mali and Mozambique, which are more reliant on cotton exports, have adopted an interventionist policy position. In Kenya, Tanzania and Uganda, the cotton value chains have been far more market-oriented.

The price setting mechanisms in place in all countries resulted in disparate effects in terms of price incentives and disincentives to producers; there were price disincentives in Kenya, Mozambique and Tanzania; price disincentives turned positive over the period of analysis in Malawi and Uganda; and there were increasing price incentives in Burkina Faso and Mali. Results highlight the ambiguous effect of the minimum price setting mechanism. In some cases, it benefited the ginners to the detriment of producers, and as such did not effectively support production (e.g. Mozambique). In other countries, such as Burkina Faso, this mechanism had the expected impact on prices and resulted in incentives for farmers. High production costs in Burkina Faso and Mali led governments to use a 'tunnel price system', whereby producers are guaranteed prices that are systematically higher than the international US subsidized price<sup>19</sup>. Producers are also offered subsidized

19 The cotton board determines a floor and ceiling price at the beginning of the campaign (year N), based on a formula that estimates the price of cotton in the year N+1. If the price at N+1 is below the floor price, a fund compensates for this and producers receive the floor price. If the price is between floor and ceiling, producers receive that price. If the price is above ceiling, producers receive a price slightly above the ceiling price, and the rest of the excess is transferred into the fund.

inputs at the start of the growing season. However, in both countries, the pricing and input subsidy system has been called into question due to its high operational cost.

The disparate nature of incentives and disincentives for cotton across the countries studied also demonstrates that the price setting mechanisms were not the only factors to influence the level of prices received by producers. In most of the countries, cotton value chains are characterized by drawbacks, such as lack of transparency and the excessive market power of processors (ginners), compared with the weak bargaining power of small-scale farmers, who are generally price takers.

Another major driver of price disincentives for producers was the low Ginning Output (GOT) ratio, caused by obsolete processing equipment and poor seed quality. Low productivity at both the production and processing levels, combined with poor quality output, was reflected in low producers' prices and the low export price for cotton lint.

Taxes were not an important factor affecting price incentives, except in Tanzania, where the cotton sector has been subject to several taxes and levies. Lack of infrastructure, such as storage capacity in Uganda or high access costs in all producing countries, has played an important role as a source of disincentives at farm gate level.

## Cattle

### Key findings

Producers in Burkina Faso, Kenya and Mali received lower prices than those they would have received in the absence of policies and market inefficiencies. Of the four countries studied, the only exception was Uganda.

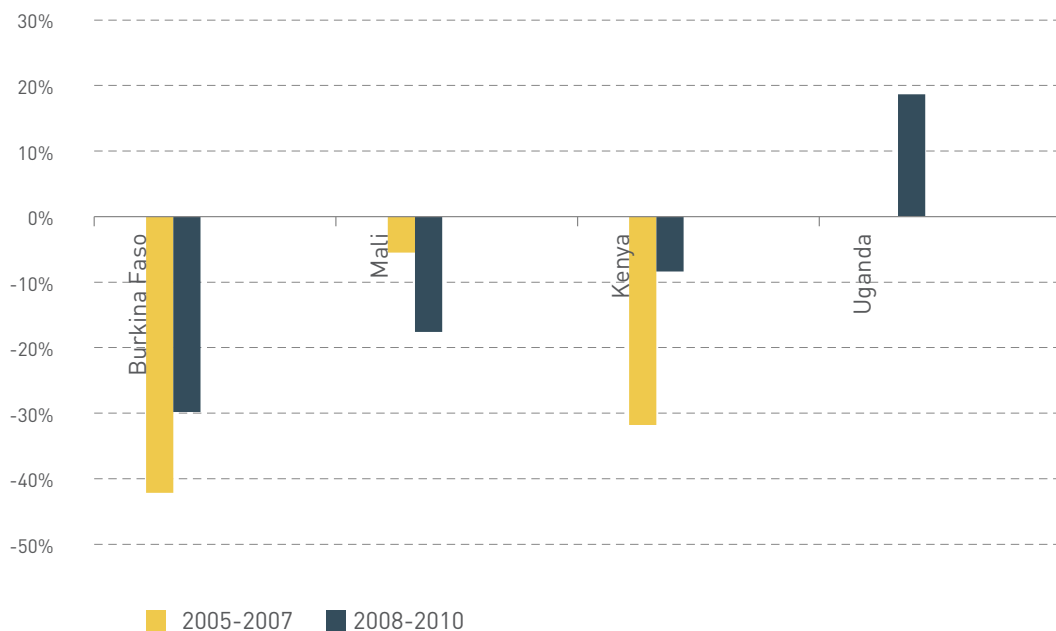
Price disincentives at farm gate level were related to poor functioning of the value chain. Key factors were information asymmetry, lack of organization among producers and the high number of intermediaries.

The four countries studied – Burkina Faso, Kenya, Mali and Uganda – are all net exporters of cattle. Exports consist of live animals, except in the case of Uganda, which exports beef meat. Burkina Faso and Mali are the main exporters of cattle in West Africa, together with Niger. In all four countries, the sector contributes to a substantial share of national GDP. Despite the importance of the cattle sub-sector to the economy of all four countries, production and trade targets set by governments have been inconsistent, as have been policy measures affecting cattle.

Governments have not adopted policy measures to address poorly integrated value chains and market structure issues. These include a high level of intermediaries, inefficient transport resulting in weight loss for animals, insufficient rural markets for cattle and strong information asymmetries between traders and producers. Also lacking are adequate safety measures against disease and drought.

The highest level of price disincentives was observed in Burkina Faso and Kenya. However, these tended to decline during the period 2008-2010, while those in Uganda increased during the last triennium. Mali was the only country that showed a significant increase in price disincentives at farm gate (Figure 16).

**FIGURE 16. AVERAGE PERCENTAGE DEVIATION OF PRODUCER PRICES FROM EQUIVALENT WORLD PRICES FOR CATTLE BY COUNTRY<sup>20</sup> (OBSERVED NRPS\*), AVERAGES 2005-2007 AND 2008-2010**



\*Observed NRPs measure the effect of distortions from explicit market and trade policies, as well as overall market performance, on domestic prices.

Source: MAFAP

High access costs at the marketing and processing stages, such as transport, storage, and slaughtering, coupled with a general lack of government policies to address such inefficiencies, were important factors driving price disincentives at farm gate level. Moreover, producers were not adequately equipped to face unexpected events such as droughts and disease outbreaks. This was particularly true in Kenya, where such occurrences have been frequent and adequate policy measures unavailable.

<sup>20</sup> No data available for Uganda in 2005-2007

Excessive government taxes and fees on cattle movement from production areas to regional markets contributed to depressing producers' prices.

## Maize

### Key findings

Maize producer prices remained lower than those farmers would have received in the absence of policies and market inefficiencies in most of the countries. Although there was a significant interest in the maize sector by policy-makers in most of the countries studied, producers faced price disincentives. These were the result of high access costs, particularly excessive transport costs along the value chain, combined with underdeveloped markets.

Border measures, such as export bans and restrictions, protected consumers by keeping domestic prices low in times of crisis, but did not benefit producers.

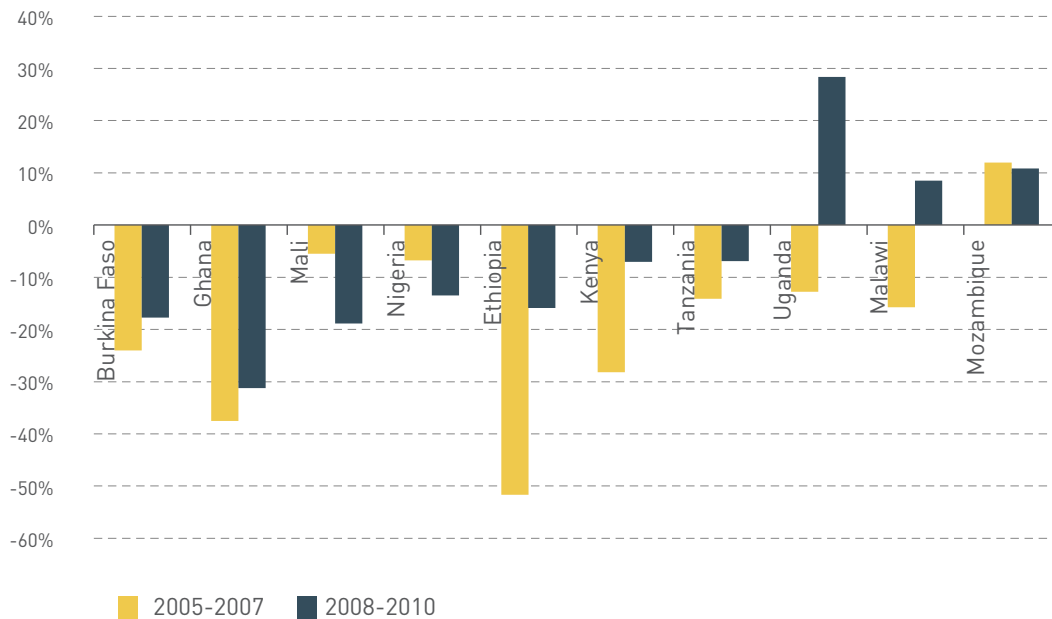
Maize was analysed in all ten countries studied by MAFAP. Maize is one of the most important crops in Africa in terms of cultivated area and volume of production and human consumption. Between 2005 and 2010, volumes of maize production increased significantly in Southern and Western Africa (except in Nigeria), barely increased in Eastern Africa (less than 5 percent) and decreased in Kenya. In all countries, production was supported by national policies such as input subsidies (except in Uganda). Maize production is dominated by small-scale farmers who consume large parts of their production or sell it in local markets.

Indeed, trade volumes in most of the countries are limited, relative to levels of production and domestic consumption. The only countries exporting more than 5 percent of their production were Malawi and Uganda (average 2005-2010). Exports were significant in Malawi when the export ban was lifted in 2007 and 2010. Kenya was the only country to import significant volumes of maize (imports represented 13 percent of production). Exports from Ethiopia, Kenya, Malawi, Mali, Nigeria and Tanzania were also affected by trade policies, as these countries experienced intermittent export bans between 2005 and 2010.

The low level of marketable surplus of maize, and lack of integration and connection with the sub-national and regional markets, raised the cost of doing business. This represented the main source of price disincentives in most of the countries studied. This conclusion is supported by the price incentives for maize producers in Malawi and Uganda, where a larger share of the production was exported (Figure 17).



FIGURE 17. AVERAGE PERCENTAGE DEVIATION OF PRODUCER PRICES FROM EQUIVALENT WORLD PRICES FOR MAIZE BY COUNTRY (OBSERVED NRPS\*), AVERAGES 2005-2007 AND 2008-2010



\*Observed NRPs measure the effect of distortions from explicit market and trade policies, as well as overall market performance, on domestic prices.

Source: MAFAP

Border measures, such as export bans and restrictions, protected consumers by keeping domestic prices low, but did not benefit producers, who received lower prices than they would have obtained without the existing domestic policies.

The food grain stock established in Burkina Faso, Ghana, Kenya, Malawi, Nigeria and Tanzania ensured price stability and food security, and thus helped to protect consumers, but did not prevent producers from receiving lower prices than reference prices.

## Rice

### Key findings

Governments have been strongly committed to protecting the sector so as to reduce their dependency on imports. As a result, they have pursued import substitution strategies, with rice producers receiving a higher price than reference prices.

Consumers bore the cost of high prices, which made imported rice less affordable, especially for consumers in urban areas.

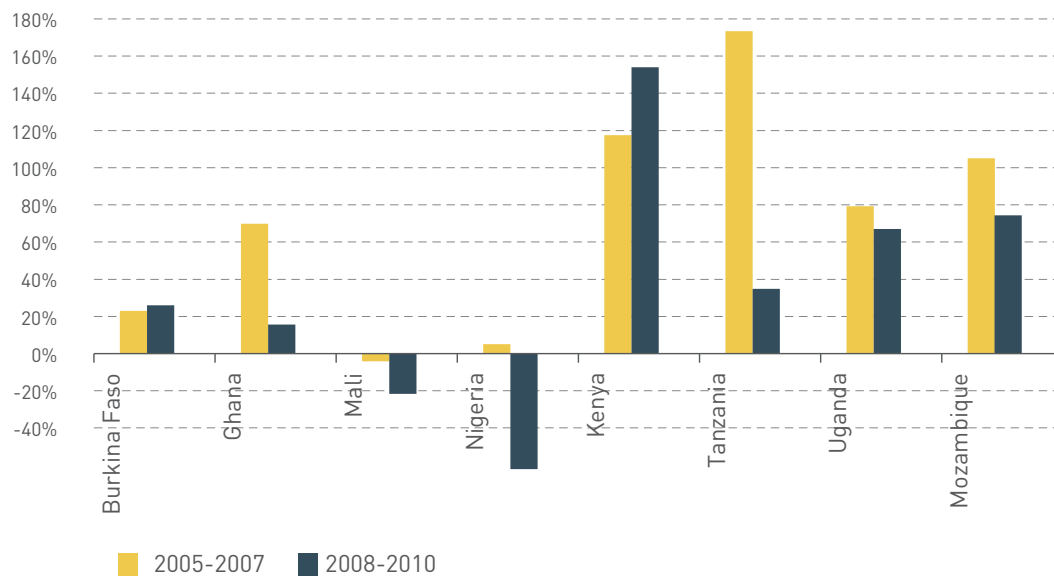
Rice is a major crop in eight out of ten countries analysed by MAFAP (Annex 3). In Mali, average annual milled rice supply per capita between 2005 and 2010 was 83 kg, slightly behind millet and sorghum, but far greater than in other countries analysed by MAFAP. In Burkina Faso and Ghana, supply per capita averaged about 26 kg. In Nigeria, the figure was 23 kg over the same period.

All countries analysed by MAFAP are importers. In the period analysed, net imports by the ten countries analysed by MAFAP accounted for 34 percent of their domestic supply, with shares ranging from 6 percent in Tanzania to 89 percent in Kenya.

Rice producers in most countries analysed by MAFAP benefited from higher prices than those they would have received in the absence of policies and market inefficiencies (Figure 18). The high prices were mainly the result of restrictive trade measures, such as tariffs and tariff equivalent charges levied against imports. Producers also received a very diverse set of input subsidies. These ranged from none, in the cases of Tanzania and Uganda, to robust, comprehensive support programmes in the cases of Ghana, Mali and Nigeria. In Mali, support to rice production represented 24 percent of agriculture-specific expenditure between 2005 and 2010 (see 3.5). Other specific programmes to subsidize fertilizer and seed benefited a subset of rice producers in some countries. These included Mozambique's 'rice packs' and Nigeria's specific fertilizer subsidies for rice.

Mali and Nigeria experienced price disincentives due to high access costs (especially transport), excessive market power from importers (Mali), and little or inconsistent tariff policy, as the import taxes were removed during the food crisis.

**FIGURE 18. AVERAGE PERCENTAGE DEVIATION OF PRODUCER PRICES FROM EQUIVALENT WORLD PRICES FOR RICE BY COUNTRY (OBSERVED NRPS\*), AVERAGES 2005-2007 AND 2008-2010**



\*Observed NRPs measure the effect of distortions from explicit market and trade policies, as well as overall market performance, on domestic prices

Source: MAFAP

## 3. Reviewing agricultural public expenditure

*Agricultural public expenditure includes projects and programmes for agriculture and rural development, as well as their administrative and operational costs. These are the main policy tools used by governments that directly affect the policy framework implementation. The MAFAP methodology analyses the level and composition of public expenditure (see: Classification of public expenditure - Figure 25). The analyses were conducted in five African countries<sup>21</sup>: Burkina Faso, Kenya, Mali, Tanzania and Uganda for the period 2006 - 2010<sup>22</sup>.*

### 3.1 Objective

African policy-makers, donors and researchers on food and agriculture lack time-series indicators and analysis of the nature of public expenditure for food and agriculture in Africa. Information is often outdated, is drawn from one-off papers or reviews and does not allow comparison across countries.

The MAFAP Public Expenditure Analysis intends to fill this gap by providing information on the level of public expenditure on food and agriculture in African countries, and data on its composition. The data presented follows a consistent system of classification that is comparable across countries and goes back to 2006. The intention is to offer evidence to policy-makers and development stakeholders on whether public resources are being allocated to priority areas, whether they address investment needs, and whether they are consistent with government policy objectives. Another objective is to better assess the type of policy support provided by the government through expenditure: public or private goods, short-term or long-term oriented, sector-specific or targeting rural development in general.

The MAFAP Public Expenditure Analysis is jointly produced by FAO and teams of researchers from country partner institutions, and is updated every year.

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21 Further insights on public expenditure affecting price incentives at producer level in each country are provided in Section 5.

22 The data for 2011 and 2012 will be analysed in the next MAFAP synthesis report and five more countries will be covered.

## 3.2 Methodology overview

### Scope

The MAFAP Public Expenditure Analysis aims to capture all public expenditure (explicit or implicit monetary transfers) that is undertaken in support of food and agriculture sector development. This includes expenditure from the national budget, either central or regional government, regardless of the ministry or agency that implements the policy, as well as external aid, provided either through local governments or specific projects conducted by international organizations. The data collected covers the period 2006 to 2010, but is currently being updated for 2011 and 2012. Expenditure from private actors is not considered.

The MAFAP Public Expenditure Analysis focuses on the composition of expenditure, with highly disaggregated data. Expenditure is classified under 19 sub-categories, following the typology used by OECD for public expenditure on agriculture that was adapted to the context of African countries (see Box. 2)

#### BOX 2. MAFAP CLASSIFICATION FOR AGRICULTURE AND RURAL DEVELOPMENT EXPENDITURE

**I. Agriculture-specific policies** – monetary transfers that are specific to the agriculture sector i.e. agriculture is the only, or major, beneficiary of a given expenditure measure

**I.1. Payments to agents in the agrifood sector** – monetary transfers to agents of agrifood sector **individually**

**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, fertilizer, energy, credit, other) – monetary transfers reducing the on-farm cost of a specific variable input or 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. Non-classified** – monetary transfers to agricultural producers individually, for which there is insufficient information to allocate them to above listed categories

**I.1.2. Payments to consumers** – monetary transfers to final consumers of agricultural commodities individually in form of:

**E. food aid** – monetary transfers to final consumers reducing 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 providing free or lower cost food in schools

**H. Non-classified** – monetary transfers to final consumers individually for which there is insufficient information to allocate them to 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 agricultural commodity processors individually
- I.1.5. Payments to traders** – monetary transfers to agricultural traders individually
- I.1.6. Payments to transporters** – monetary transfers to agricultural commodity transporters individually
- 1.2. General sector support** – public expenditure generating monetary transfers to agrifood sector agents **collectively**
  - I. Agricultural research** – public expenditure financing research activities to improve agricultural production
  - J. Technical assistance** – public expenditure financing technical assistance to agriculture sector agents collectively
  - K. Training** – public expenditure financing agricultural training
  - L. Extension/technology transfer** – public expenditure financing provision of extension services
  - M. Inspection (veterinary/plant)** – public expenditure payments financing control of quality and safety of food, agricultural inputs and the environment
  - N. Infrastructure (roads, off-farm irrigation infrastructure, other)** – public expenditure financing off-farm collective infrastructure
  - O. Storage/public stockholding** – public expenditure financing public storage of agrifood products
  - P. Marketing** – public expenditure financing assistance in marketing of agrifood products
  - R. Non-classified** – other transfers to agrifood agents collectively for which there is insufficient information to allocate them to above listed categories
- 1.3. Non-classified** – public expenditure generating monetary transfers to the agrifood sector, for which there is insufficient information to allocate them to above listed categories
- II. Agriculture supportive policies** – public expenditure that is not specific to agriculture, but which has a strong influence on agricultural sector development
  - S. Rural education** – public expenditure on education in rural areas
  - T. Rural health** – public expenditure on health services in rural areas
  - U. Rural infrastructure (rural roads, rural water, rural energy and other)** – public expenditure on rural infrastructure
  - V. Non-classified** – other public expenditure on rural areas benefiting agricultural sector development for which there is insufficient information to allocate them to above listed categories

The classification is compatible with the United Nations Classification of Functions of Government (COFOG), as it also distinguishes between agriculture, fisheries and forestry (see Box 3).

**BOX 3. MAFAP AND COFOG CLASSIFICATION**

The MAFAP public expenditure analysis classification directly derives from the OECD's Producer Support Estimate manual. It distinguishes between expenditure specific to the agriculture sector (whether through private goods or general sector support) and expenditure in support of the agriculture sector (through rural development expenditure).

The COFOG classification, recommended by the African Union as an accounting system for public expenditure, is the United Nations Statistics Division classification system. This system was also developed by OECD and is similar to the classification of the Creditor Reporting System (CSR). It contains the categories Agriculture, Forestry, Fisheries and Hunting (codes 04.2.1, 04.2.2 and 04.2.3). However, there are no sub-categories. MAFAP is compatible with, but offers more disaggregated sub-categories.

The additional MAFAP categories for rural development can also be traced to the COFOG system, although the match is not perfect. For instance, rural roads can also be found in transport (04.5.1), agricultural research in "R&D Economic Affairs" (04.8.2), and irrigation in multipurpose projects (04.7.4).

In order to capture all public expenditure in support of the food and agriculture sector, MAFAP has developed the following breakdown.

- i. A broad distinction is made between policies that are: agriculture-specific (direct support to the agriculture sector), agriculture-supportive (indirect support to the agriculture sector) and non-agricultural expenditure
- ii. Within the agriculture-specific category, a distinction is made between support to producers and other agents in the value chain (i.e. input subsidies), and general or collective sector support (i.e. research). The agents in the value chain include farmers (producers), input suppliers, processors, consumers, traders and transporters.

Agriculture-specific expenditure should include those measures that generate monetary transfers to agricultural agents or the sector as a whole. The agents, or the sector as a whole, must be the only, or the principal recipient of the transfers generated by the expenditure measure. Agriculture-supportive measures should include measures that are not strictly specific to the agriculture sector, but that have a strong influence on agriculture sector development, such as investment in rural development. All measures that comply with these criteria are considered, regardless of their nature, objectives or perceived economic impacts. The intention of MAFAP, by including agriculture-supportive policies, is to better capture all forms of policy support to agriculture.

**BOX 4. WORLD BANK, MAFAP AND RESAKSS PUBLIC EXPENDITURE ANALYSES**

In recent years, there have been three major exercises for public expenditure analysis in Africa: the World Bank Public Expenditure Reviews (PERs), the Regional Strategic Analysis and Knowledge Support System (ReSAKSS) reviews, and MAFAP. The MAFAP Secretariat, the World Bank and NEPAD are currently collaborating to better investigate the value and complementarities of the various methodologies.

### 3.3 Level of public expenditure on agriculture and rural development

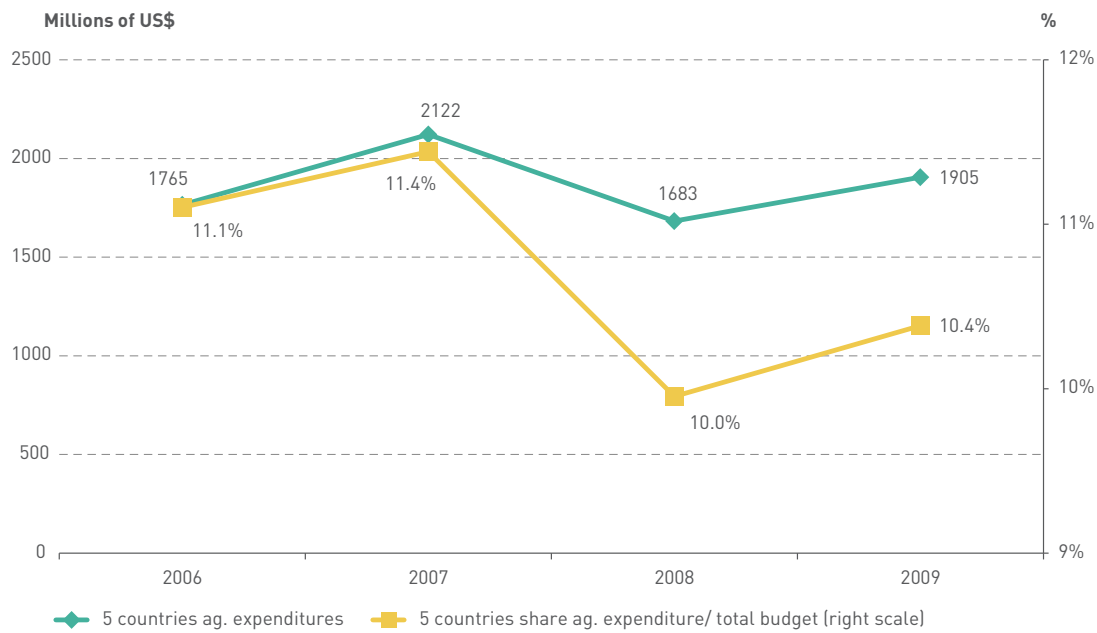
#### Key findings

The absolute and relative public expenditure on agriculture and rural development declined from 2006 to 2010 for all countries analysed by MAFAP, with the exception of Kenya. Nevertheless, all countries, except Kenya, allocated more than ten percent of their budgetary resources to agriculture and rural development. The main cause for the decline in expenditure on agriculture and rural development was a fall in levels of donor contributions in 2008. This may be attributed to a high share of emergency agriculture and rural development expenditures not being recorded in the budgets in 2008 and 2009.

The MAFAP analysis for the five countries shows a decline in public expenditure dedicated to agriculture and rural development after the onset of the food crisis in 2007-2008 (Figure 19). This downward trend was mainly the result of a sharp decrease in levels of external funding in 2008.



**FIGURE 19. AGRICULTURE AND RURAL DEVELOPMENT EXPENDITURE IN ABSOLUTE TERMS AND AS A PERCENTAGE OF TOTAL PUBLIC EXPENDITURE IN THE FIVE COUNTRIES<sup>23</sup> ANALYSED (CONSTANT USD BASE 2006), 2006-2009**



Source: MAFAP

Analyses of public expenditure often refer to the 2003 Maputo Declaration, which committed African governments to devoting at least 10 percent of their national budgets to agriculture and rural development within five years<sup>24</sup>. However, there is uncertainty as to the definition of ‘agriculture and rural development’: although it is not for MAFAP to decide on the intended meaning of these words in the declaration, the analysis considers a broad definition of public expenditure on agriculture and rural development (see 1.2). MAFAP does not formally endorse or consider the Maputo target as the optimum for public expenditure on agriculture, but provides information on whether this level appears to have been reached or not.

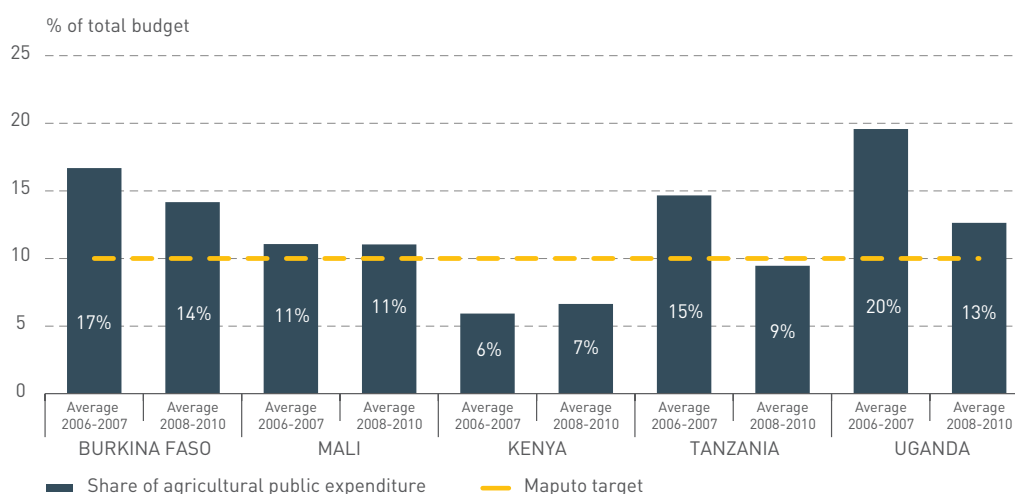
MAFAP reveals that during the 2006-2010 period, Burkina Faso, Mali and Uganda held levels of public expenditure on the agriculture and rural development sector above 10 percent (Figure 20). Tanzania, though falling below this figure during the period 2008-2010, maintained an average that exceeded this threshold between 2006 and 2010. Kenya remained below 10 percent for the whole period. Kenya is also the only

23 Data for 2010 was not included, since the administrative costs and the total public budget in Mali could not be collected. Data for Kenya refers to budgeted expenditure. The total public budget for Uganda in 2009 and 2010 refers to budgeted expenditure.

24 Assembly of the African Union, Second Ordinary Session, 10-12 July 2003, Maputo, Mozambique, decl. 7, p. 1: “We, the Heads of State and Government of the African Union (AU), assembled in Maputo at the Second Ordinary Session of the Assembly, 10 to 12 July, 2003 (...) agree to adopt sound policies for agricultural and rural development, and commit ourselves to allocating at least 10% of national budgetary resources for their implementation within five years”. The approach taken by MAFAP is to consider, in the computation of the share of national budgetary resources dedicated to the agriculture sector, the transfers linked to agricultural policies (policy transfers) and the related administrative costs, including the amounts that originate from external sources.

country for which the share of public expenditure given to agriculture and rural development increased between 2006 and 2007 and between 2008 and 2010. For other countries, the decline in the share of total expenditure on agriculture and rural development was mainly attributable to a reduction in donor contributions for this sector. Indeed, nationally funded expenditure followed an upward trend.

**FIGURE 20. SHARE OF AGRICULTURE AND RURAL DEVELOPMENT EXPENDITURE AS A PERCENTAGE OF TOTAL PUBLIC BUDGET BY COUNTRY<sup>25</sup>, AVERAGES 2006-2007 AND 2008-2010**



Source: MAFAP

## Level of national public expenditure on agriculture and rural development

*MAFAP methodology distinguishes between national and donor expenditure.*

Between 2006 and 2010, national public expenditure increased by an average of 14 percent (excluding Kenya<sup>26</sup>). However, growth in national public spending on the agriculture and rural development sector was very uneven: it was negative for Kenya, Mali and Uganda in 2008, while Burkina Faso and Tanzania, respectively, experienced a negative and zero growth rate the following year (Table 1). It appears that the high food price crisis had an impact on the budget for agriculture and rural development in the countries analysed by MAFAP. This is possibly explained by the use of off-budget resources that were channelled to address food insecurity in 2008 and 2009, which MAFAP was not able to capture.

<sup>25</sup> In Mali, the average for the second period includes only 2008 and 2009. The CPS (2011) collected the total public budget for all years. In Uganda, the total public budget for the years 2009 and 2010 refers to budgeted expenditure; actual spending levels were not available for these two years.

<sup>26</sup> The data for Kenya reports actual expenditure. It was not used in the computation of the average growth rate of the countries analysed by MAFAP

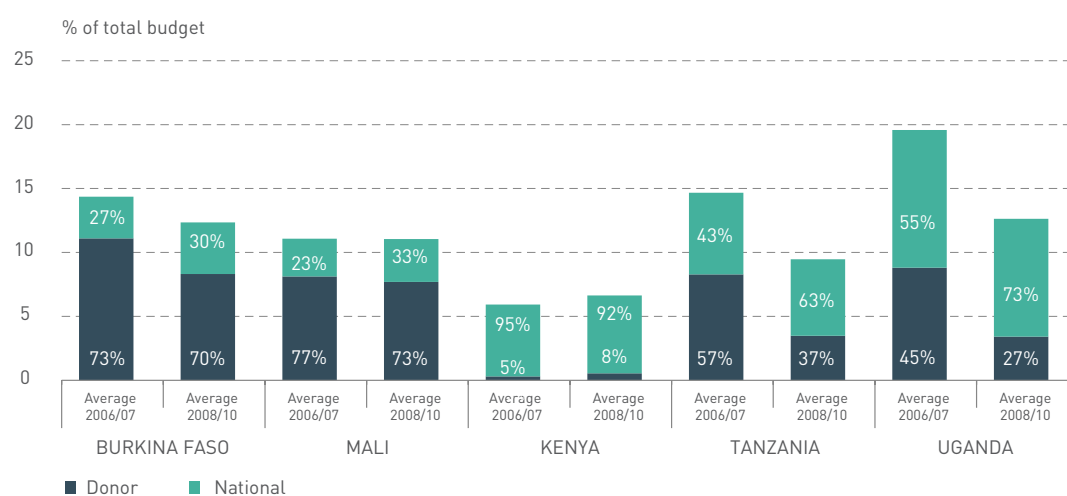
TABLE 1. ANNUAL PERCENTAGE GROWTH IN PUBLIC SPENDING ON AGRICULTURE AND RURAL DEVELOPMENT BY COUNTRY (CONSTANT USD BASE 2006), 2007-2010

	2007	2008	2009	2010	Growth rate 2007-2010
<b>Mali</b>	0.20%	-4.50%	18.30%	13.90%	23.30%
<b>Burkina Faso</b>	2.40%	11.00%	-2.70%	7.90%	14.80%
<b>Kenya</b>	12.70%	-0.20%	7.20%	7.20%	11.10%
<b>Tanzania</b>	9.40%	11.50%	0.20%	-3.10%	5.80%
<b>Uganda</b>	10.50%	-2.70%	19.40%	-2.30%	12.10%

Source: MAFAP

In relative terms, national spending on agriculture and rural development as a share of total expenditure also increased, except in Kenya (Figure 21). In spite of the absolute increase in expenditure on agriculture and rural development, the government was unable to compensate for the decline in donor expenditure over the period, resulting in a downward trend of overall expenditure.

FIGURE 21. SHARE OF DONOR EXPENDITURE IN TOTAL AGRICULTURE AND RURAL DEVELOPMENT EXPENDITURE BY COUNTRY (PERCENT), AVERAGES 2006-2007 AND 2008-2010



Source: MAFAP

## Level of donor expenditure for agriculture and rural development<sup>27</sup>

The share of donor funding relative to total public expenditure shrank between 2006 and 2010, with an average decline rate of 8.3 percent (Kenya excluded). This trend was due to plummeting levels of donor expenditure on agriculture and rural development in 2008 in all countries analysed by MAFAP, with an average figure of -9 percent. The strongest decline was witnessed in Tanzania and Uganda (Table 2). This dip in donor funding seen in 2008 may have been due to extensive use of off-budget funds by donors in order to rapidly address food emergencies. The fall seen in 2010 reflected a general slowdown of donor expenditure in countries analysed by MAFAP, as registered in OECD's Creditor Reporting System.

TABLE 2. ANNUAL PERCENTAGE GROWTH IN THE SHARE OF DONOR EXPENDITURE IN TOTAL AGRICULTURE AND RURAL DEVELOPMENT EXPENDITURE BY COUNTRY (CONSTANT USD BASE 2006), 2007-2010

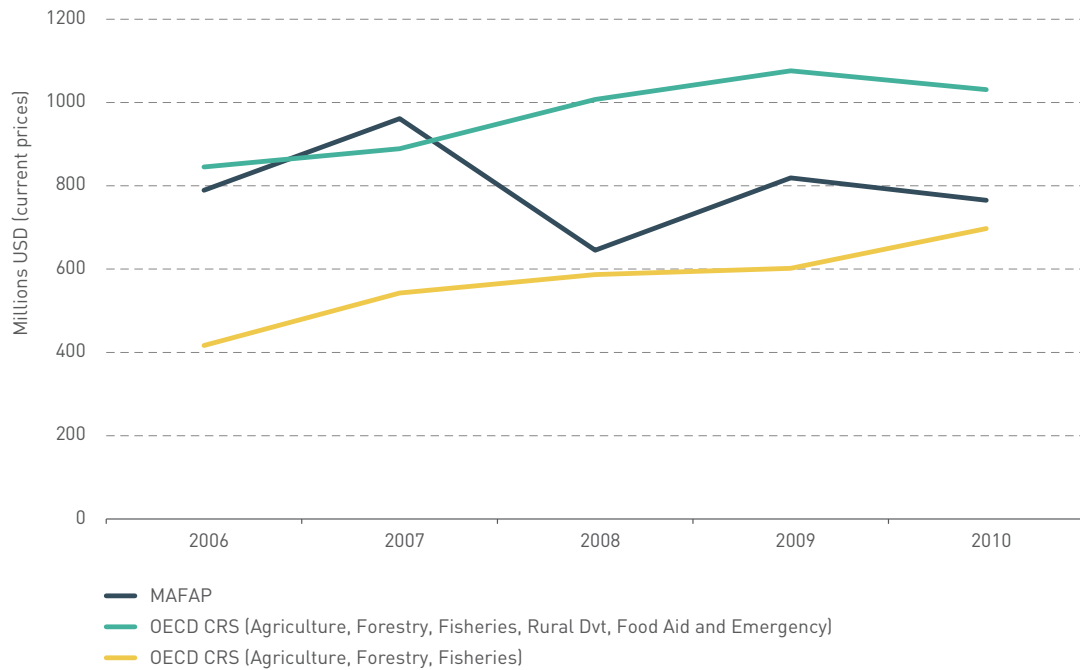
	2007	2008	2009	2010	Average
<b>Mali</b>	2.50%	-3.70%	12.80%	3.50%	2.50%
<b>Burkina Faso</b>	-3.80%	-10.10%	13.80%	-2.30%	-3.80%
<b>Kenya</b>	30.40%	2.20%	32.50%	-12.60%	30.40%
<b>Tanzania</b>	18.80%	-14.40%	-7.70%	1.80%	18.80%
<b>Uganda</b>	0.20%	-19.40%	17.60%	-7.20%	0.20%

Source: MAFAP

The CRS values (definition in Box 3. MAFAP and COFOG classification) are higher than MAFAP's when 'AFF +' categories are considered (agriculture, forestry, fisheries, rural development, food security programmes and emergency food aid) (Figure 22). Such categories best reflect the MAFAP typology. This suggests that during the period under review, donors may have provided a significant share of their support to agriculture and rural development through other channels than government budgets, for example through civil society organizations. Moreover, food aid was not comprehensively captured by the MAFAP data collection and this could also explain the difference between the two trends. The fact that MAFAP figures are higher, when compared to AFF categories (agriculture, forestry, fisheries) only seems to confirm this hypothesis. In terms of trends, MAFAP results follow the same pattern as those of OECD, with the exception of the plunge of 2008.

<sup>27</sup> Donor expenditure captured by the MAFAP monitoring system largely comes from the Ministry of Agriculture, Finance and Planning budget books. It rarely includes off-budget expenditure, which is an area for improvement in data collection.

FIGURE 22. TOTAL MAFAP AND OECD CRS VALUES (AFF AND AFF+) FOR AID TO FOOD, AGRICULTURE AND RURAL DEVELOPMENT IN THE FIVE COUNTRIES ANALYSED (IN MILLION USD, CURRENT PRICES), 2006-2010<sup>28</sup>



Source: MAFAP, OECD

Of the five African countries, Mali and Burkina Faso were far more reliant on donor expenditure, with external funding accounting for 71 and 77 percent of public expenditure on agriculture and rural development, respectively, between 2006 and 2010. Conversely, in the case of Kenya, external funding only represented 5 percent of public expenditure on agriculture and rural development<sup>29</sup>.

### Level of public expenditure on agriculture and rural development and price support

Although four countries analysed by MAFAP spent over 10 percent of their budget on food and agricultural development during the period studied, their agriculture sector experienced significant challenges. Indeed, an analysis of the share of public expenditure in support of agriculture and rural development provides a limited assessment of support given to the sector. As shown in Chapter 2, numerous factors, including public spending, influence priced incentives to production.

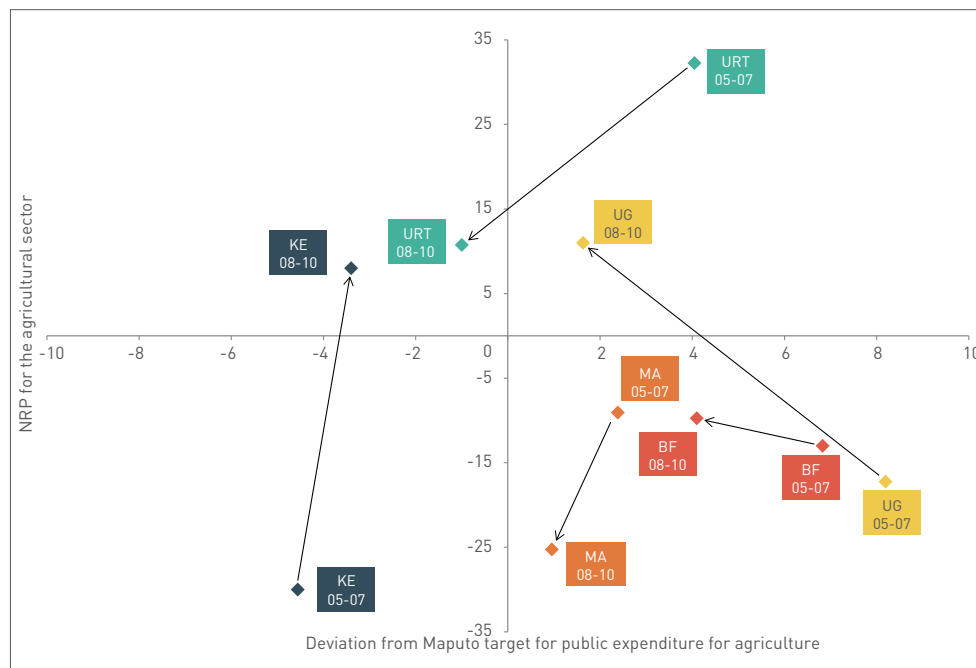
For example, Burkina Faso and Uganda decreased their relative budgetary support to the agriculture sector.

<sup>28</sup> The codes used to compute the OECD data are the following: 311, 312, 313, 43040, 52010, 72040.

<sup>29</sup> AFF data on Official Development Assistance from the Credit Reporting System of OECD shows a downward trend for Mali and Uganda in 2008, and for Burkina, Kenya and Tanzania in 2009. MAFAP data reports levels of expenditure higher than CRS for Burkina Faso, Tanzania and Uganda, suggesting that more data was collected at country level than that reported by donors to OECD, which may explain the different trends. Further research would be needed to explain the variation in trends for Kenya and Mali.

However, producers in these two countries received higher price incentives (Figure 23). As could be expected in Kenya, public expenditure increased between the two time periods and producers received price incentives in 2008-2010, while they were penalized in 2005-2007. In Mali and Tanzania, public expenditure declined, as did price incentives to production. The combination of public expenditure and incentives analysis should provide a better assessment of total support given to producers in the countries analysed by MAFAP (see Section 4).

**FIGURE 23. NRPS AND PUBLIC EXPENDITURE IN SUPPORT OF AGRICULTURE AND RURAL DEVELOPMENT BY COUNTRY, 2005-2010**



Source: MAFAP

### Level of public expenditure on agriculture and rural development per agricultural worker and area

If the size of the economies and agricultural sector of countries analysed by MAFAP are taken into account, a more representative insight into the weight of their food and agricultural expenditure may be obtained (Annex 4). Despite having a lower overall GDP and agricultural GDP than Mali, Burkina Faso allocated more expenditure in relative terms to agriculture and rural development. Uganda presents a similar situation when compared with Kenya and Tanzania. Indeed, Burkina Faso and Uganda had the highest expenditure per unit of agricultural land of the countries analysed by MAFAP (Figure 24).

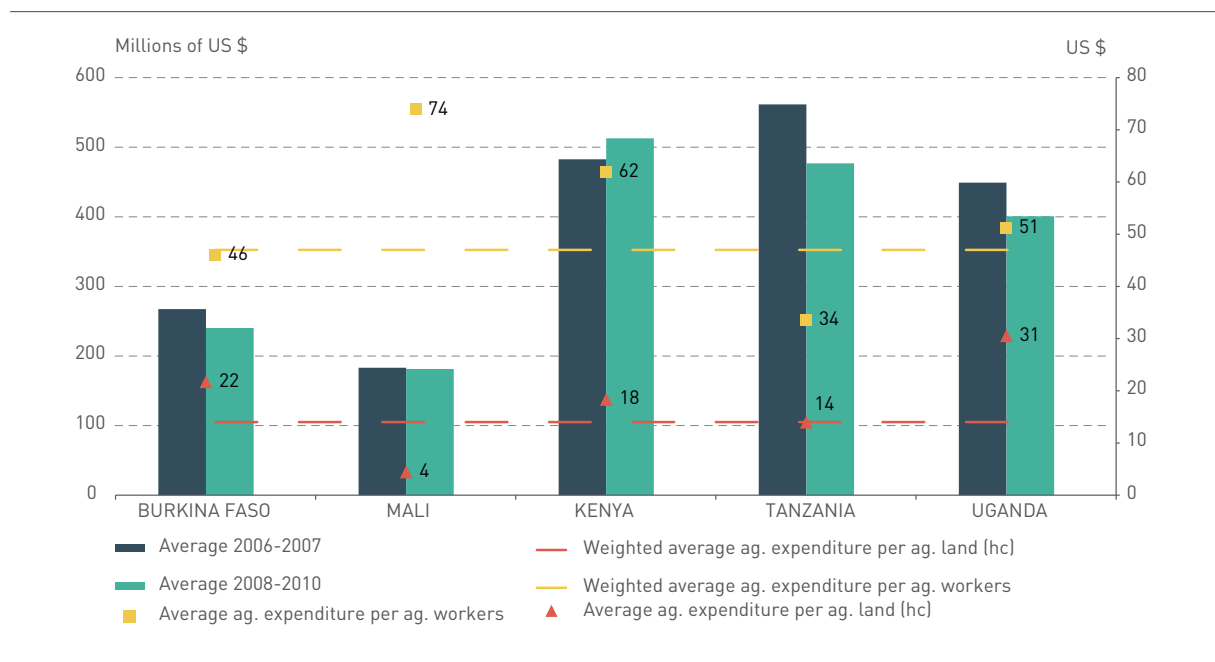
Public expenditure in Mali was particularly low in terms of US dollar per hectare of agricultural area, which

is explained by the country's large territory and the focus of the expenditure on targeted production areas. The high level of spending per agricultural worker in Mali was also attributable to the small labour force, the population being lower than that of the other countries.

Tanzania had the highest expenditure in absolute value, but was among the lowest performers in terms of expenditure per agricultural worker and agricultural area. This is due to the large numbers of agricultural workers in the country. The large size of Mali, including significant quantities of low-production agricultural land in the northern Saharan areas of the country, had an impact on the level of expenditure per hectare, which was among the lowest. The figure also reflected the government's focus on supporting the southern part of Mali, as opposed to the north.

Kenya and Uganda are the two countries that dedicated the highest level of expenditure per area and per worker, despite the low share of agricultural spending in Kenya, compared with the total public budget.

**FIGURE 24. AGRICULTURE AND RURAL DEVELOPMENT EXPENDITURE BY COUNTRY (IN MILLION USD, LEFT AXIS) COMPARED TO THE AVERAGE AGRICULTURAL EXPENDITURE PER AGRICULTURAL WORKER AND PER HECTARE FOR ALL FIVE COUNTRIES ANALYSED<sup>30</sup>(IN USD, RIGHT AXIS)**



Source: MAFAP

30 Data on agricultural workers and agricultural land was obtained from the World Bank Data Base (<http://databank.worldbank.org/data/views/reports/tableview.aspx>). Figures on agricultural workers correspond to 2005 for Burkina Faso, Kenya and Uganda and to 2006 for Mali and Tanzania. The agricultural land is the average for the 2006-2010 period.

## 3.4 Composition of national expenditure for agriculture and rural development

### Key findings

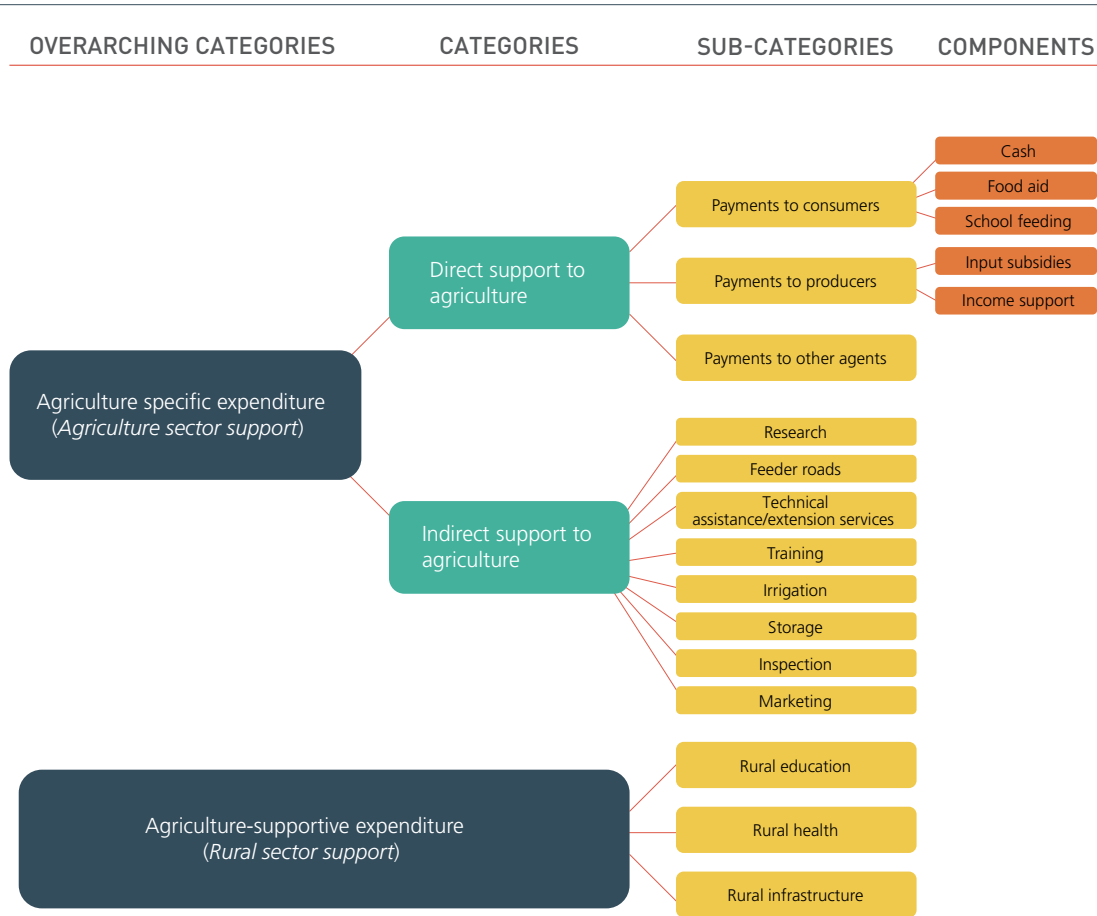
The composition of public expenditure on agriculture and rural development shifted during the 2006-2010 period, with the focus of expenditure moving from rural development to the agriculture sector. The share of donor expenditure in rural development expenditure was high, and the decline in its overall contribution from 2008 onwards contributed to the shift towards the agriculture sector. National authorities also strengthened their support to production after the food crisis, and the private sector played an increasing role in funding rural infrastructure, partly replacing national expenditure. This contributed to the shift in public expenditure towards the agriculture sector. Burkina Faso and Mali devoted a large share of their budget to support on-farm irrigation, with a low share going to research, whereas Kenya, Tanzania and Uganda invested significant amounts in variable input subsidies and research.

### Classification of public expenditure on agriculture and rural development

The MAFAP methodology for public expenditure classification identifies two main categories: expenditure in support of the agriculture sector (agriculture-specific expenditure) and rural expenditure (agriculture-supportive expenditure). Agriculture-specific expenditure is divided into two categories: direct (individual support to stakeholders in the sector) and indirect (general sector support). These three categories are used in the analysis: direct support to agriculture, indirect support to agriculture and rural development (Figure 25). In policy terms, direct expenditure to agriculture provides private goods for targeted agents of the sector. It often corresponds to input subsidies projects, variable inputs (seeds) or capital (on-farm equipment, irrigation). However, it can also cover expenditure that directly targets consumers (school feeding programmes, cash transfers). Such expenditure tends to favour individuals or specific value chains. By contrast, indirect support to agriculture produces general services/goods for the agriculture sector. Such goods do not benefit individuals directly; they include, for example, research, feeder roads, storage and marketing infrastructure. Rural development expenditure benefits the agriculture sector through improvements in other related sectors. It encompasses rural health, rural education and rural infrastructure. Whereas direct support to agriculture is often aimed at producing short-term effects, such as boosting production and productivity or reducing food insecurity for consumers, indirect support to the sector and support to rural areas aim to foster medium to long-term agricultural and rural development.



FIGURE 25. MAFAP PUBLIC EXPENDITURE CATEGORIES, SUB-CATEGORIES AND COMPONENTS



Source: MAFAP

### Direct and indirect expenditure on agriculture and rural development

During the period 2006-2007, expenditure allotted to rural development was higher than that devoted to agriculture (Figure 26). However, the balance gradually shifted during the years 2008-2010. This decrease was to the benefit of direct and indirect expenditure on agriculture (expenditure in support of agriculture), whose relative volume increased during the same period. A similar trend was observed for absolute and relative values (Table 3). In particular, indirect expenditure, as a share of total expenditure in support of agriculture, increased significantly in the period 2008-2010

**TABLE 3. DIFFERENCE IN SHARE OF TOTAL PUBLIC EXPENDITURE IN SUPPORT OF AGRICULTURE AND SHARE OF TOTAL PUBLIC EXPENDITURE IN SUPPORT OF RURAL DEVELOPMENT BETWEEN 2006-2007 AND 2008-2010 BY COUNTRY (IN PERCENT)**

	Expenditure in support of agriculture	Expenditure in support of rural development
<b>MALI</b>	0.6	-0.6
<b>BURKINA FASO</b>	-0.3	-2.1
<b>KENYA</b>	1.4	-0.7
<b>TANZANIA</b>	1.1	-6.3
<b>UGANDA</b>	0.6	-7.6

Source: MAFAP

As discussed above, this shift partly reflects the decline in donor expenditure after 2008. Indeed, donors in three of the five countries analysed concentrated their expenditure on rural development rather than on agricultural sector support (Table 4). For example, in Mali, the National Programme for Rural Infrastructure received decreasing amounts of funding from the World Bank, a decline that impacted the overall level of public expenditure on rural development. However, the change in the expenditure pattern was also due to adjustments of policy priorities at national level, which modified the government budget allocation.

**TABLE 4. SHARE OF DONOR FUNDING IN TOTAL AGRICULTURE-SPECIFIC EXPENDITURE AND TOTAL RURAL DEVELOPMENT EXPENDITURE BY COUNTRY (IN PERCENT), AVERAGE 2006-2010**

	Burkina Faso	Kenya	Mali	Tanzania	Uganda
<b>Agricultural-specific</b>	64.7	9.3	65.4	41.9	39.9
<b>Rural development</b>	81.9	0	83.4	63.9	31

Source: MAFAP

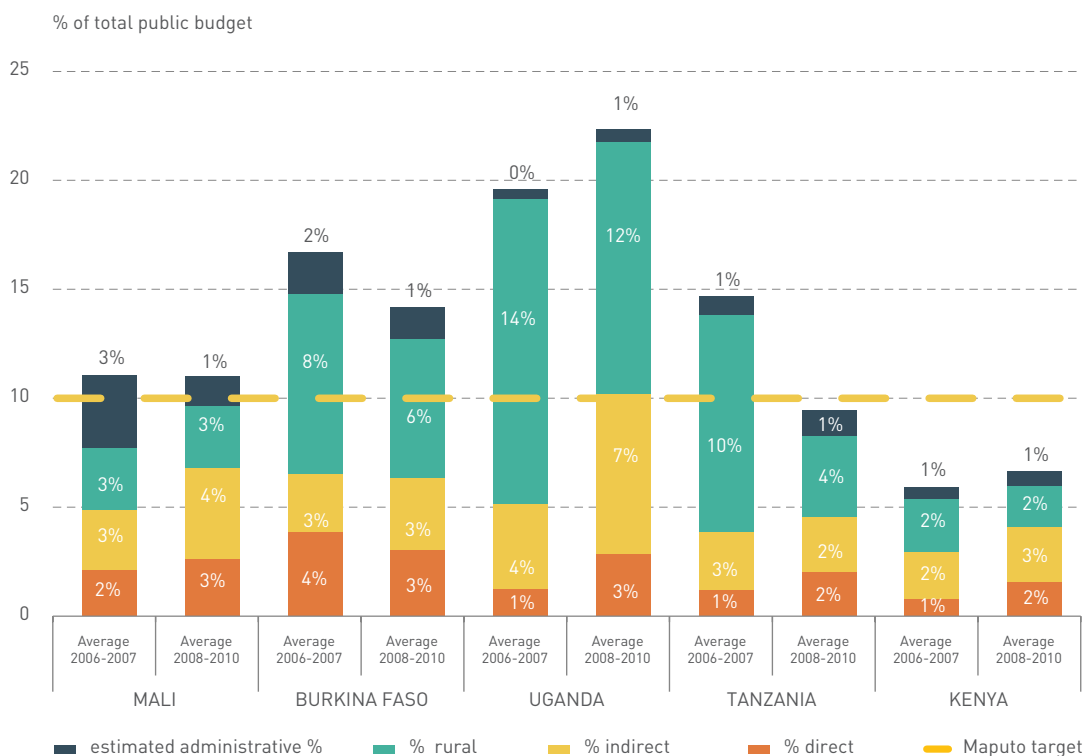
The countries analysed by MAFAP launched various initiatives to boost production in 2008 (Rice Initiative in Mali; seed subsidies in Burkina Faso; strong increase in the budget of extension agencies in Uganda). This had the effect of giving more weight to expenditure on the agriculture sector. The governments clearly focused on production as a response to the food crisis, with the aim of making their countries less dependent on imports.

However, the same countries adopted policy strategies that placed less emphasis on public support to rural infrastructure. In Burkina Faso, the Strategy for Accelerated Growth and Sustainable Development (SCADD) centres on support to specific products or groups of products with growth potential<sup>31</sup>.

In the United Republic of Tanzania, investment in road infrastructure and education in rural areas also witnessed a decline. This partial shift in investment was in line with the Kilimo Kwanza plan, launched in 2008, which focused mainly on trade policies and close collaboration with the private sector to foster infrastructural development.

In Uganda, investment in rural and feeder roads declined in 2008 due to project cuts initiated by the Ministry of Finance, Planning and Economic Development (reconstruction of the Jinja-Bugiri road and Kabale-Kisoro road). In Kenya, the decline in rural development expenditure was also in line with the Strategy for Revitalizing Agriculture (SRA- 2004-2014), which sought to increase the weight of the private sector in agriculture and rural development.

**FIGURE 26. PROPORTION OF DIRECT, INDIRECT, AND RURAL SPENDING, AND AN ESTIMATED PROPORTION OF ADMINISTRATIVE COSTS, WITHIN THE TOTAL PUBLIC BUDGET BY COUNTRY<sup>32</sup> (IN PERCENT), AVERAGES 2006-2007 AND 2008-2010**



Source: MAFAP

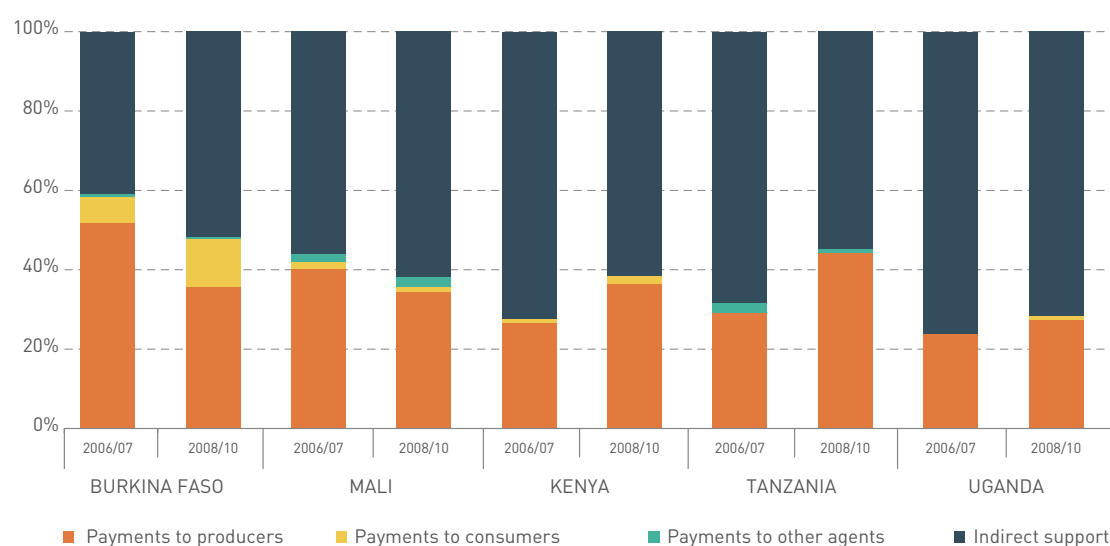
31 See MAFAP (2013), "Review of Food and Agricultural Policies in Burkina Faso 2005-2011 - country report", Draft paper, p. 61, [www.fao.org/mafap](http://www.fao.org/mafap).

32 In Mali, the average for the second period includes only 2008 and 2009. The total public budget for all years were collected by the CPS, 2011

## Direct expenditure on agriculture

Overall, direct expenditure mainly consisted of payments to producers. Payments to consumers and other agents (traders, transporters and processors) remained very limited throughout the study period, except in Burkina Faso where payments to consumers increased (Figure 27). On the whole, the share of payments to producers declined in Burkina Faso and Mali, while that of indirect support increased. Inversely, the share of payments to producers increased in Kenya, Tanzania and Uganda, while indirect support decreased. This could be interpreted as showing that Kenya, Tanzania and Uganda aimed to boost productivity and production through private goods rather than public goods. The higher share of private goods seen in Burkina Faso and Mali was largely due to the specificity of their economies. Both countries face water deficits (aside from the Niger Delta in Mali) on most of their agricultural land, and, as a result, the government and donors have funded on-farm irrigation equipment, so as to support the production of a variety of crops. Off-farm irrigation, provided, for example, through mini-dams, is more costly and less common. Furthermore, both Burkina Faso and Mali are important cattle producers and exporters, as well as consumers of milk and meat. Several projects have sought to develop the cattle value chain by improving breeding, often by supplying on-farm support to producers. The increase seen in the share of payments to producers in the East African countries is explained by the stronger focus on production after 2008. However, the share of payments to producers declined in Burkina Faso and Mali. In the case of Burkina Faso, the fall can be attributed to the very sharp drop in donor funding provided for production support between 2006 and 2008. In Mali, this decline was due to a shift in expenditure, which focused more on training and marketing components to support producers.

FIGURE 27. COMPOSITION OF PUBLIC EXPENDITURE IN SUPPORT OF THE AGRICULTURE SECTOR BY COUNTRY (IN PERCENT), AVERAGES 2006-2007 AND 2008-2010

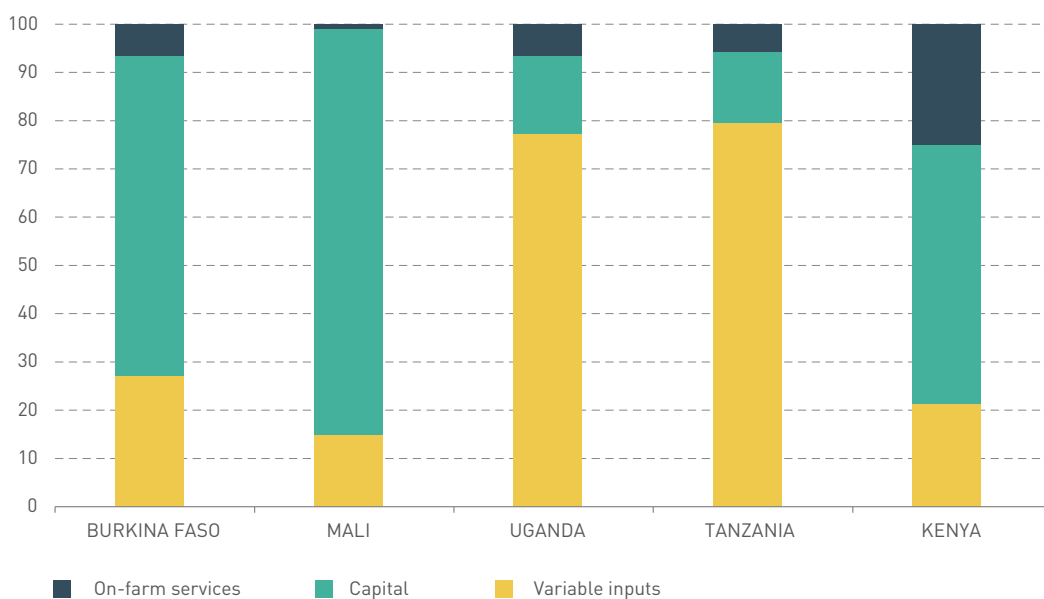


Source: MAFAP

### Input subsidies expenditure in countries analysed by MAFAP

Payments to producers mainly included input subsidies. However, they differed by regional sub-groups. ‘Capital’ input subsidies prevailed in MAFAP Western African countries, while ‘variable inputs’ were the main type of input subsidies given to farmers in MAFAP Eastern African countries (the only exception being Kenya) (Figure 28). This means that payments to producers in Western African Countries were mostly characterized by investments in machinery and equipment, on-farm irrigation or other basic on-farm infrastructure<sup>33</sup>. By contrast, countries in Eastern Africa provided support to farmers primarily in the form of seeds, fertilizer, credit or energy<sup>34</sup>.

FIGURE 28. COMPOSITION OF INPUT SUBSIDIES TO PRODUCERS BY COUNTRY (IN PERCENT), AVERAGE 2006-2010



Source: MAFAP

The composition of input subsidies during the two periods shows that the food crisis of 2007 and 2008 corresponded to a rise in the use of subsidies of the ‘variable inputs’ type in the five countries. This can once again be explained by the tendency of governments to increase national production in order to reduce food imports in a context of high price volatility.

33 The biggest projects in the ‘capital’ category were essentially linked to irrigation in Burkina Faso and funding of agricultural equipment or hydro-agriculture in Mali.

34 See MAFAP (2010), “Monitoring African Food and Agricultural Policies project methodology: concept paper”, Draft paper, [www.fao.org/mafap](http://www.fao.org/mafap), p. 35.

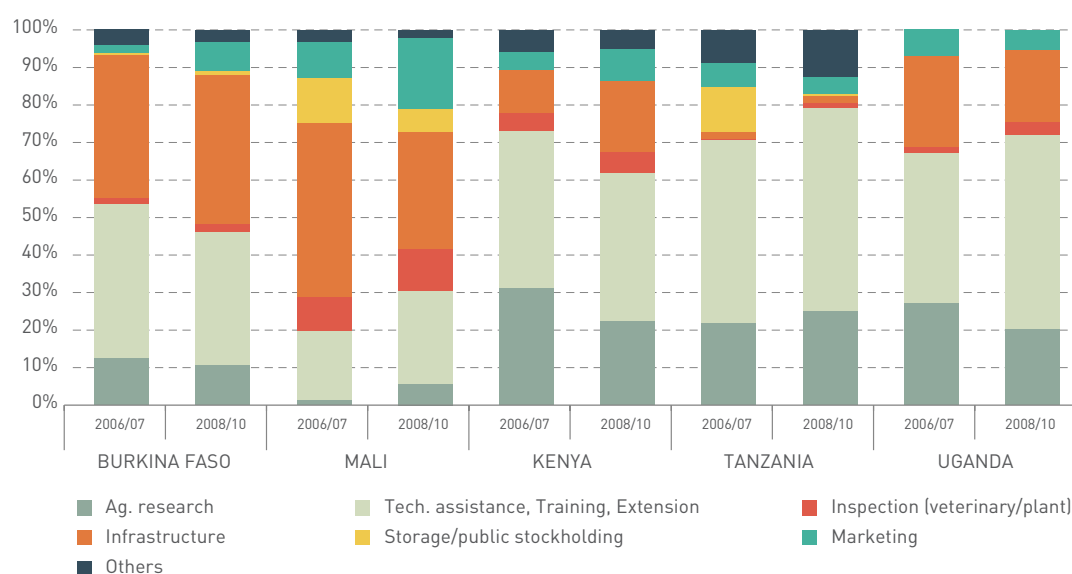
## Indirect expenditure on agriculture

Support to the input aspect of production was strong in the five countries. However, this was not consistently combined with a high level of support to the output aspect; for example, marketing infrastructure received little support during the period studied (Figure 29). Lack of marketing opportunities and infrastructure was identified by the price incentives analysis as a major component of price disincentives to production, suggesting that governments may need to take greater account of both aspects of production in order to boost it in an efficient manner (see Section 2).

### Agricultural infrastructure expenditure in countries analysed by MAFAP

Investment in agricultural infrastructure and marketing declined during the period analysed. From 2008, countries analysed by MAFAP, notably the East African countries, invested significantly in inputs, whereas the share of support to agricultural infrastructure diminished or stayed at similar levels in four countries out of five. Tanzania and Uganda also lowered levels of relative support to marketing (Figure 29). Weak support to marketing and agricultural infrastructure jeopardizes the medium and long-term effect of input subsidies, which may compromise the effectiveness of costly input subsidy programmes supported by national budgets<sup>35</sup>.

FIGURE 29. COMPOSITION OF INDIRECT PUBLIC EXPENDITURE IN SUPPORT OF THE AGRICULTURE SECTOR BY COUNTRY (IN PERCENT), AVERAGES 2006-2007 AND 2008-2010



Source: MAFAP

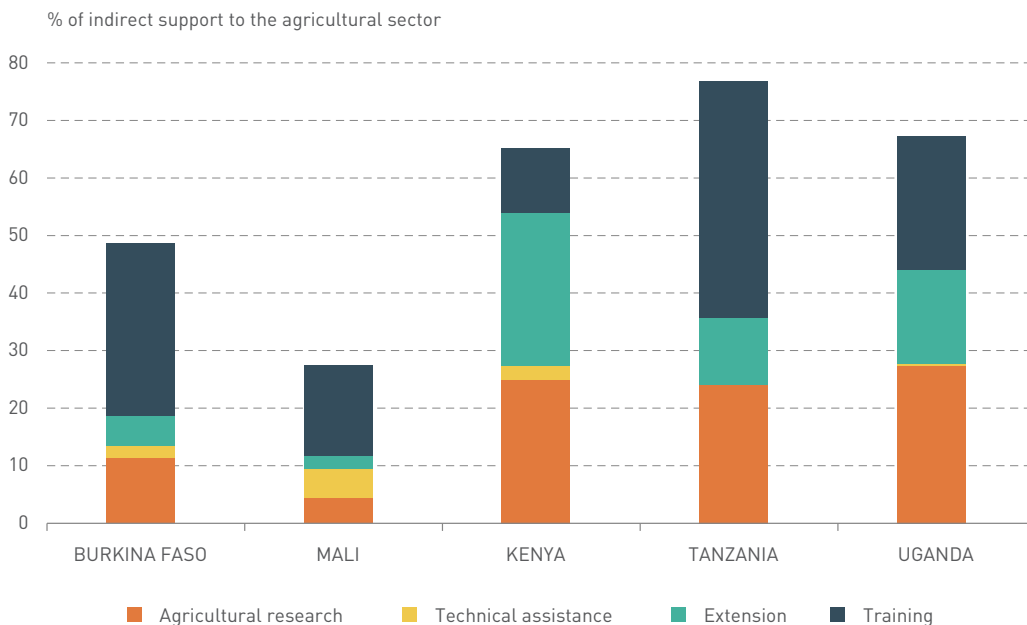
35 See BARREIRO-HURLÉ, J. and DRUILHE, Z. (2012), "Fertilizer subsidies in sub-Saharan Africa", ESA working paper

### Knowledge and research expenditure in countries analysed by MAFAP

The importance of the link between investment in agricultural research and agricultural growth has often been emphasized. It is considered that investment in research and development for agriculture has had the highest impact on revenues over the past 40 years (SOFA, 2012). Fan and Zhang (2008) have estimated that extension and agricultural research are the two investment categories that have the strongest impact on agricultural productivity and reduction of poverty, compared with other public spending categories. Fuglie and Rada (2013) also show that investment in agricultural research is linked to greater productivity in the agriculture sector.

Despite this, support to agricultural research was very low in Burkina Faso and Mali, which, respectively, provided 11 and 4 percent of indirect support to the agriculture sector (Figure 30). This constitutes a critical gap in the composition of these two countries' agriculture and rural development expenditure. The share was far higher in Kenya, Tanzania and Uganda, at 25, 24 and 27 percent respectively. These three East African countries, however, dispose of a budget that is significantly larger, and have more developed economies. This allows authorities to focus on investments that will bear fruit in the medium and long term. Burkina Faso and Mali, on the other hand, face more budget constraints and therefore focus spending on more immediate priorities.

**FIGURE 30. SHARE OF INDIRECT PUBLIC EXPENDITURE IN SUPPORT OF THE AGRICULTURE SECTOR DEVOTED TO AGRICULTURAL RESEARCH, EXTENSION, TRAINING AND TECHNICAL ASSISTANCE BY COUNTRY (IN PERCENT), AVERAGE 2006-2010**

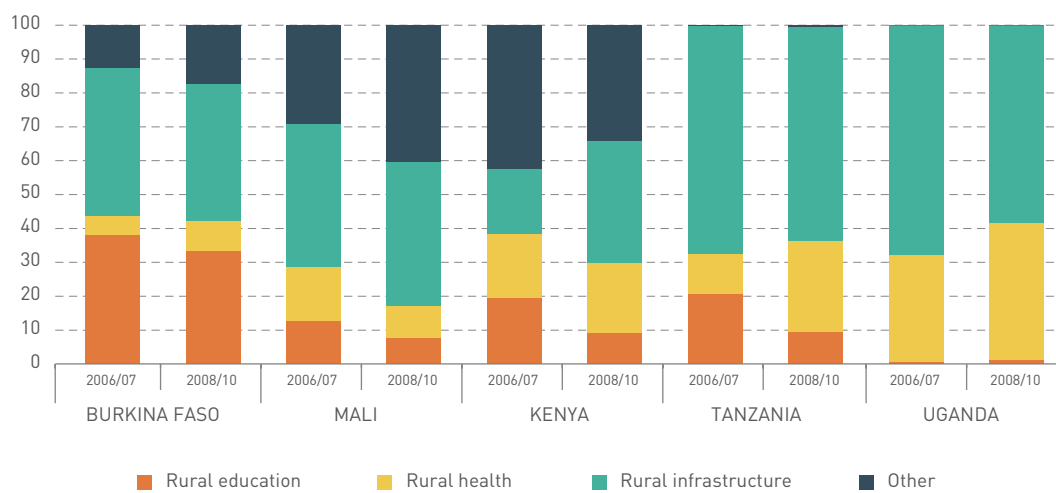


Source: MAFAP

## Rural development expenditure

'Expenditure on rural infrastructure' produced the highest level of spending in the category of expenditure directed towards rural development (Figure 31). In Tanzania and Uganda, this type of expenditure represented more than 60 percent of total expenditure on the rural sector. That is partly explained by the difficulty of tracking expenditure on rural health and education, which may have been underestimated. Furthermore, all countries analysed by MAFAP received significant funding from donors, especially from development banks, to strengthen their rural infrastructure (roads, dams, energy).

FIGURE 31. COMPOSITION OF PUBLIC EXPENDITURE IN SUPPORT OF RURAL DEVELOPMENT BY COUNTRY (IN PERCENT), AVERAGES 2006-2007 AND 2008-2010



Source: MAFAP

The share of expenditure dedicated to rural development and targeting rural infrastructure declined slightly for Burkina Faso, Tanzania and Uganda during the period under review. These are also the countries where expenditure in favour of rural development prevailed, although donor expenditure strongly declined.



### 3.5 Commodity support through public expenditure

#### Key findings

Burkina Faso and Mali offered strong support to single commodities, especially rice and cotton, whereas, Kenya, Tanzania and Uganda distributed support among commodities more evenly. Burkina Faso and Mali have more specialized economies, and were trying to limit import dependency (rice) and boost their exports (cotton). Kenya, Tanzania and Uganda have larger and more diversified economies and their budget support to the agriculture sector has been more balanced.

#### Commodity classification of public expenditure on agriculture and rural development

This section analyses the agricultural expenditure targeting individual commodities and groups of commodities (Figure 32). Expenditure targeting individual commodities is defined as expenditure on projects, programmes or initiatives that focus exclusively on one commodity. Expenditure on groups of commodities targets two or more commodities, while the rest of expenditure captured by MAFAP does not support any specific commodity.

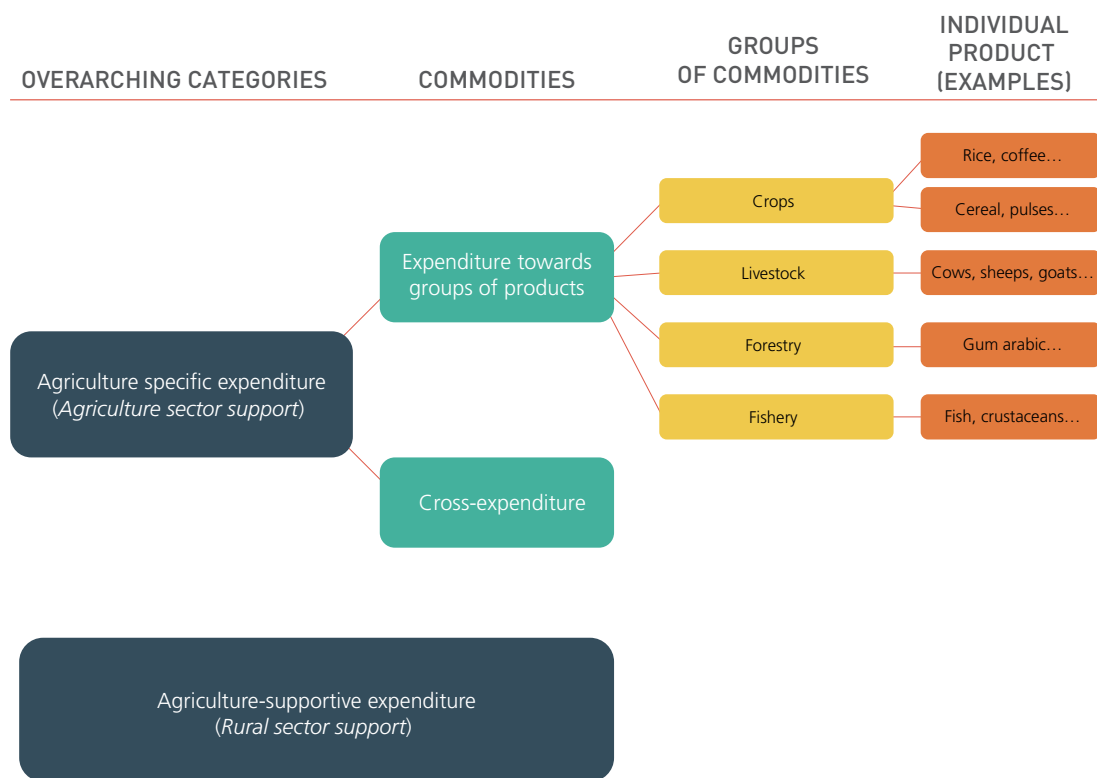
In policy terms, governments supporting individual commodities usually seek to boost exports or self-sufficiency. In Burkina Faso and Mali, individually targeted products were mainly rice (self-sufficiency) and cotton (exports). In Kenya, Tanzania and Uganda, support was more diversified, but mostly targeted coffee and tea (exports), rice and vegetable oil (self-sufficiency) or cotton (exports). When successful, commodity-specific interventions can have a high impact on the market structure of a targeted commodity, as well as on the agricultural market as a whole for small economies (Burkina Faso and Mali). Indeed, a strong increase in the productivity of rice in Mali, for instance, would significantly reduce imports, increase incomes for a large number of producers and change the production pattern of the country, with several producers shifting from other crops to rice. However, such policy interventions are difficult to implement due to the fact that producers may use the benefits of support for one targeted commodity to produce another commodity. This is typically the case for input subsidies or on-farm irrigation.

Furthermore, when it represents a high share of the budget for agriculture and rural development, commodity support is a risky policy option. That is because should it prove unsuccessful in triggering change in the value chain, it will not produce the expected benefits, but will instead compromise crop diversification and resilience to external shocks (price volatility, climate shocks, etc.).

Support to groups of commodities is generally more closely associated with the development of a sub-sector,

and is often linked to integrating projects and programmes. The main sub-groups of commodities targeted in countries analysed by MAFAP were cattle, horticulture and cereals. So as to facilitate a comparison between each country, sub-groups were classified under Forestry, Cattle, Fisheries and Crops. Support for groups of commodities has the same policy implications as support for individual commodities. In contrast with support for the general sector, or with rural support (research, roads, storage infrastructure), support for individual or groups of commodities aims to impact specific segments of the market, at the expense of providing global goods. For example, reducing production costs for horticulture without improving rural roads may not provide the results intended in terms of exports and producer income. Striking the right balance between the various types of policy support through public expenditure is a difficult exercise, for which strong evidence is needed, such as that provided by MAFAP indicators.

FIGURE 32. MAFAP PUBLIC EXPENDITURE CLASSIFICATION PER COMMODITY<sup>36</sup>



Source: MAFAP

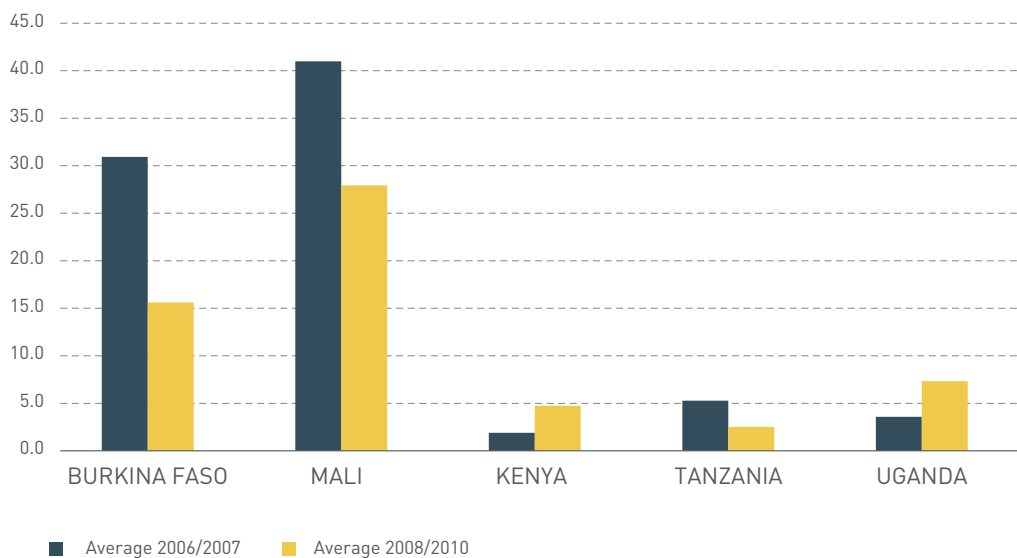
36 By definition, rural development expenditure does not include expenditure that targets commodities

## General support and support to individual commodities through public expenditure on agriculture and rural development

Burkina Faso and Mali dedicated a much larger share of their expenditure to support single commodities, compared with Kenya, Tanzania and Uganda (Figure 33). This is explained by Burkina Faso and Mali's cash crop-based agricultural economies. The two countries have invested a large share of their budgets on supporting rice – which is the most widely consumed food in urban areas – and cotton production, which is their countries' main export, along with gold. The climatic conditions of Burkina Faso and Mali, with a dry Sahelian climate on most of their territory, have also impacted production diversity. However, both countries strongly reduced their expenditure on supporting single commodities between the 2006/2007 and 2008/2010 periods, from 41 to 28 percent (Mali) and 31 to 16 percent (Burkina Faso). This reflects the larger share of expenditure devoted to general sector support during the 2008/2010 period.

For the three Eastern African countries, the share of expenditure dedicated to individual commodities was far lower than in Burkina Faso and Mali, representing less than 5 percent during the period 2006-2010. Kenya, Tanzania and Uganda have a more diversified agricultural portfolio than West African countries, and more developed economies on the whole. The latter means that they have been able to offer broader budgetary support to rural infrastructure and to the agriculture sector.

**FIGURE 33. SHARE OF PUBLIC EXPENDITURE IN SUPPORT OF THE AGRICULTURE SECTOR DEDICATED TO SINGLE COMMODITIES BY COUNTRY (IN PERCENT), AVERAGES 2006-2007 AND 2008-2010**



Source: MAFAP

*This analysis focuses on four important commodities (rice, cotton, coffee and tea) that are either individually targeted or benefiting from non-individual strategies.*

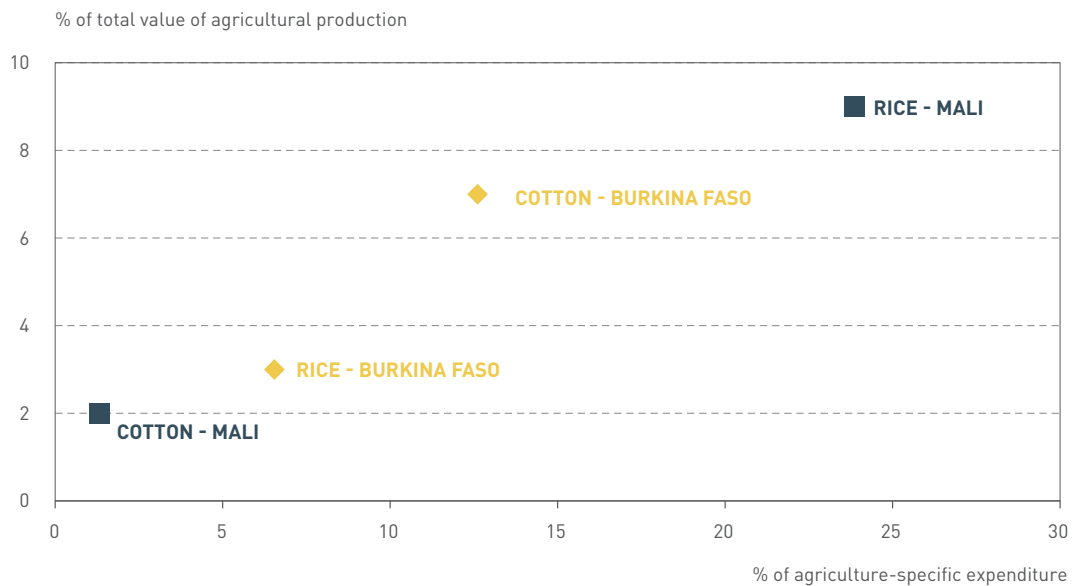
## **Support to rice and cotton in Burkina Faso and Mali through public expenditure on agriculture and rural development**

Rice and cotton were of major importance in terms of expenditure in Burkina Faso and Mali (Figure 34), with 24 percent of agriculture-specific expenditure targeting rice in Mali between 2006 and 2010. This shows an effort by the Malian government to support rice production in order to reduce imports, rice being the main cereal in terms of consumption in urban areas and the country's third main cereal, after millet and sorghum. Support for these latter commodities was limited, as the government has tended to consider them as crops for self-consumption that do not need improvements in productivity or marketing. In Mali, high investment in rice production was consistent with the importance of the commodity in the country, in terms of production value (Figure 34).

Burkina Faso adopted a similar policy strategy to that of Mali, with 6.5 percent of agricultural public expenditure allocated to rice between 2006 and 2010. However, rice absorbed fewer resources compared with Mali due to its lower production value (Figure 34) and lower consumption levels (FAOSTAT, 2012). Cereal consumption, which grew by 5.6 percent per year during the period analysed, could result in increasing public expenditure that targets rice (Guissou, Ilboudo, 2012).

Public expenditure for cotton was higher in Burkina Faso than in Mali, absorbing 12 percent of agriculture-specific expenditure between 2006 and 2010. This was in keeping with the significant share held by cotton in both countries in terms of agricultural production value (Figure 34). Mali also subsidized inputs for cotton production, through the Malian Company for Textile Development, though these figures were not captured in the analysis.

**FIGURE 34. SHARE OF AGRICULTURAL PUBLIC EXPENDITURE (AVERAGE 2006-2010) AND SHARE OF AGRICULTURAL VALUE OF PRODUCTION (AVERAGE 2005-2009) FOR COTTON AND RICE IN MALI AND BURKINA FASO**

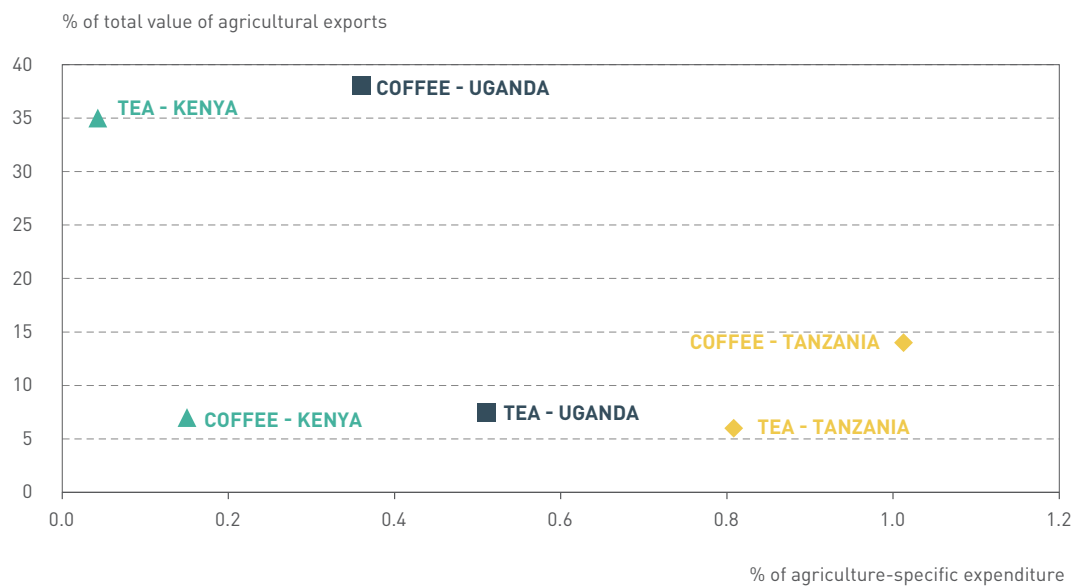


Source: MAFAP

### Support to coffee and tea in Kenya, Tanzania and Uganda through public expenditure on agriculture and rural development

The main targeted commodities in Kenya, Tanzania and Uganda were coffee and tea. However, the share of expenditure allocated to these commodities was limited compared with cotton and rice in Burkina Faso and Mali. Indeed, they received less than 1 percent of agriculture-specific expenditure (Figure 35). Tanzania allocated more resources to tea and coffee than Kenya and Uganda, despite these commodities being less relevant in terms of export value, compared with tea in Kenya or coffee in Uganda.

**FIGURE 35. SHARE OF AGRICULTURAL PUBLIC EXPENDITURE (AVERAGE 2006-2010) AND SHARE OF AGRICULTURAL VALUE OF EXPORTS (AVERAGE 2005-2009) FOR COFFEE AND TEA IN KENYA, TANZANIA AND UGANDA**



Source: MAFAP

From a visual comparison of Figures 34 and 35 it could be concluded that Burkina Faso and Mali allocated more resources to the most important crops (there is a direct relationship between share of agricultural value added and share of agriculture-specific expenditure), something that is not so evident in the case of East Africa. Such a trend is also linked to the fact that Burkina Faso and Mali's expenditure was more targeted towards payments to agents. This type of payment is by nature more crop-specific, in contrast with general sector support, which is often non-targeted (for example, feeder roads). The findings once again suggest that the East African countries analysed have adopted more sector-wide approaches than the West African ones.

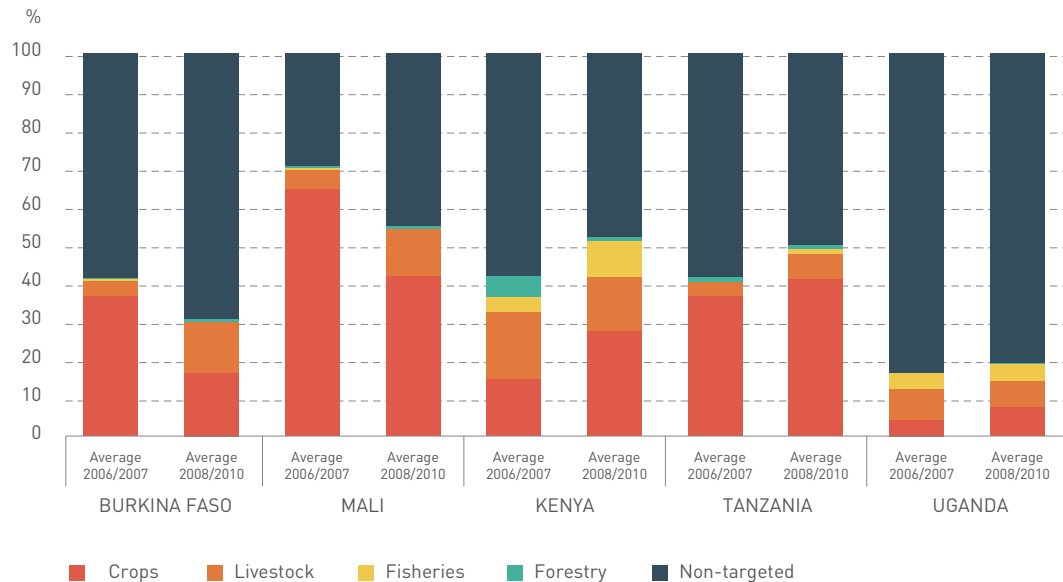
## Support to groups of commodities through public expenditure on agriculture and rural development

*The analysis by groups of commodities includes specific agricultural expenditure targeting a specific commodity or groups of commodities by type (cereal, pulses). Crops, forestry, fishery and cattle are the four main groups.*

Mali and Uganda, respectively, dedicated the largest and smallest share of their agriculture-specific spending to groups of commodities (Figure 36). For Mali, this was due to the large number of integrated projects targeting rice, together with food security cereals; the share of cattle support was also significant compared

with that in most other countries. Uganda, on the other hand, has had a clear policy objective of limiting market interferences over the period, which explains the low level of investment in individual and groups of commodities.

**FIGURE 36. SHARE OF PUBLIC EXPENDITURE IN SUPPORT OF AGRICULTURE DEDICATED TO GROUPS OF COMMODITIES BY COUNTRY, AVERAGES 2006-2007 AND 2008-2010**



Source: MAFAP

In Mali, spending on groups of commodities was mostly concentrated on crops due to the significant amounts spent on the rice sector. Crop expenditure was also significant in Tanzania.

Kenya and Uganda provided strong support to fisheries. This can be explained by the considerable volumes of fish production in the two countries (155 265 tonnes in Kenya and 508 805 tonnes in Uganda in 2010, FAOSTAT 2012). Conversely, levels of support to fisheries in Tanzania were low (1.2 percent of agriculture-specific expenditure), despite annual production of 342 935 tonnes in 2010 (FAOSTAT 2012). This represents a misalignment between the Agricultural Sector Development Strategy (ASDS) targeting fish sector development, and the resources allocated to achieving this goal. Similarly, despite the economic impact of the fish sector in Mali, which represents 4 percent of GDP and employs 8 percent of the workforce (UNEP, 2011), the Malian government allocated 0.5 percent of its agriculture-specific expenditure to fisheries between 2005 and 2010. In Burkina Faso, the limited amount dedicated to the fish sector was coherent with low production levels.

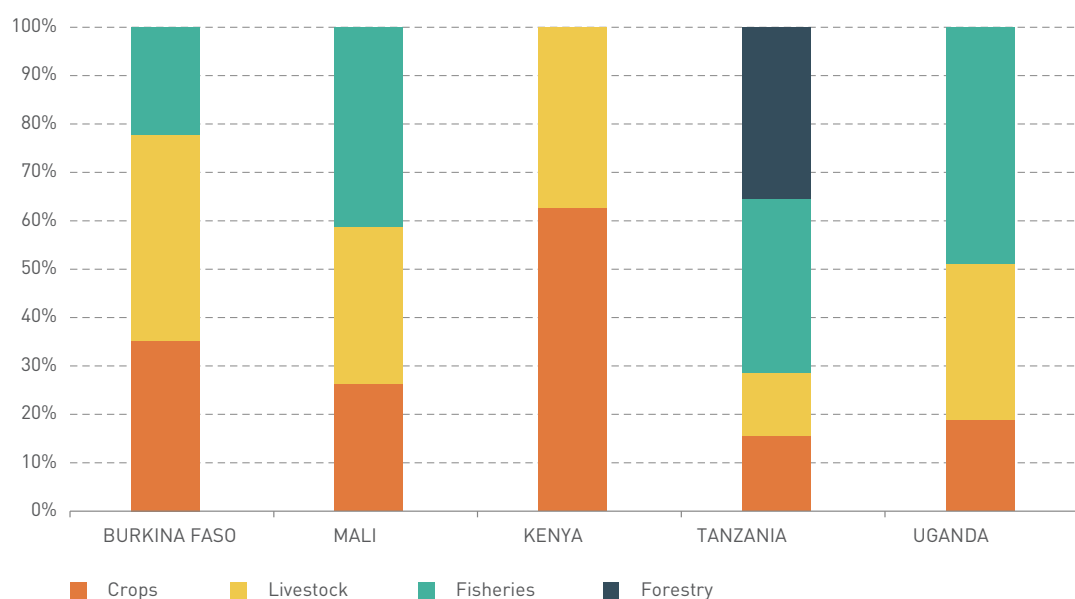
Livestock supportive expenditure varied between 5 percent in Tanzania and 16 percent in Kenya, which is relatively weak compared to the value of production of livestock in both countries. The share of public

expenditure dedicated to this group of commodities rose in Mali and Burkina Faso during the period (+7.1 percent and 8.1 percent of growth respectively), illustrating growing government interest in this sector.

## Support to groups of commodities through donor expenditure on agriculture and rural development

The analysis of external funding per groups of commodities targeted shows that donors did not support forestry crops, except in Tanzania. MAFAP may not have captured all donor expenditure for forestry crops<sup>37</sup>. However, this result seems logical, given that forestry crops are not a focus of attention by donors and government in any of the countries analysed by MAFAP. Overall, Burkina Faso, Mali and Uganda recorded balanced levels of aid across fishery, livestock and crops, whereas Kenya's external funding especially targeted crops and livestock (Figure 37).

FIGURE 37. SHARE OF EXTERNAL FUNDING PER GROUP OF COMMODITY SUPPORTED IN THE FIVE COUNTRIES ANALYSED, AVERAGE 2006-2010



Source: MAFAP

37 MAFAP has had difficulties in tracking off-budget expenditure; several donors have not reported their support to the Ministry of Agriculture and/or Ministry of Finance



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## 4. An assessment of policy coherence across countries

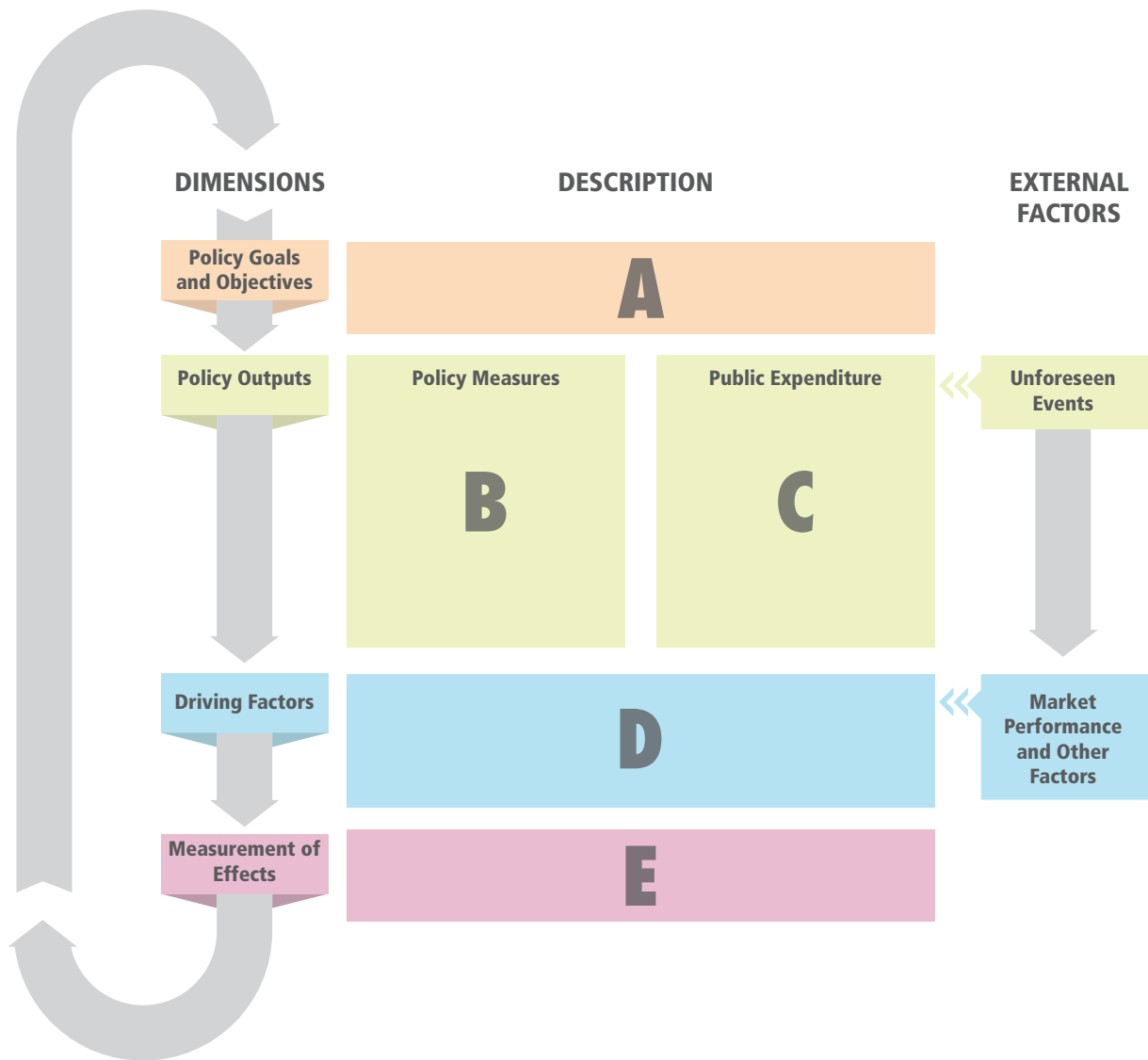
MAFAP monitors food and agricultural policies through a set of indicators that focus on market price incentives and public expenditure. Using these indicators, a preliminary assessment of alignment between policy objectives, policy measures (including public expenditure) and the impact of these measures on price incentives for producers and wholesalers was carried out.

The analysis covered a six-year period from 2005 to 2010, 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 crisis in selected countries and for specific commodities.

### Methodology and approach

This section identifies trends across countries by assessing the degree of alignment between policy objectives, policy instruments (policy measures and public expenditure) and their effect on the factors or issues driving price incentives or disincentives for producers and wholesalers. This approach for policy coherence analysis is defined in the MAFAP Methodology Guidelines (2013) and summarized in Figure 38 (case of cotton in Kenya available in Annexe 5). As illustrated, policy dimension 'A' represents all the policy goals and objectives related to the particular commodity being analysed, while dimensions 'B' and 'C' refer to specific policy measures. As indicated by the external factors shown in the diagram, policy measures are not only determined by long-term goals and government objectives, but also by unforeseen events, such as production shortages due to drought or other natural disasters, which may require temporary policy measures to address immediate needs. Dimension 'D' represents those 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 value chain, and hence if policy measures and public expenditure are achieving stated objectives and goals.

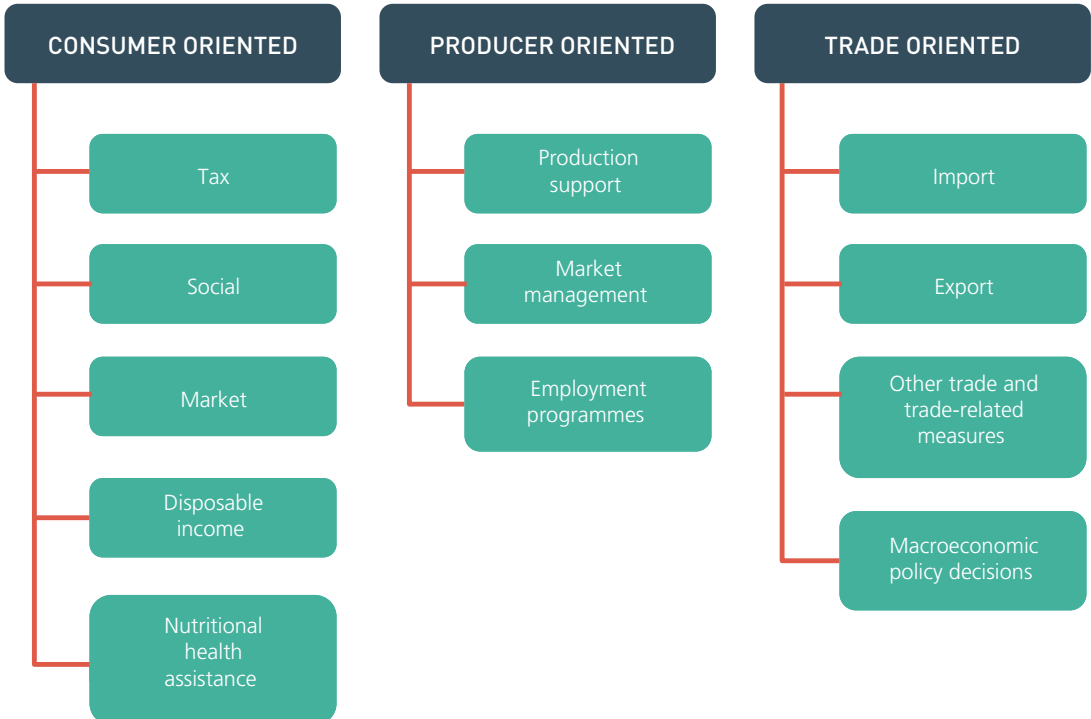
FIGURE 38. ANALYTICAL FRAMEWORK FOR THE MAFAP POLICY COHERENCE ANALYSIS



Source: MAFAP

Policy objectives and measures (dimensions A, B and C) for all ten countries were identified and classified as either consumer-oriented policies, producer-oriented policies or trade-oriented policies, in accordance with Food and Agriculture Policies Decision Analysis (FAPDA) typology (Figure 39).

FIGURE 39. FAPDA CLASSIFICATION OF FOOD AND AGRICULTURAL POLICIES



Source: FAPDA, 2013

## 4.1 Consumer-oriented policies

### Key findings

Most countries implemented protective market and trade policies, such as minimum prices and import tariffs to support producers. These policies often led to higher domestic prices, thereby taxing consumers. However, this situation was reversed during the 2007/08 global food price crisis, when domestic prices increased sharply. In response to these exceptional circumstances, countries relied on short-term market and trade policies, such as price ceilings, export bans and the removal or reduction of import tariffs on food security crops, rather than public expenditure to support consumers. While many of these measures were effective in keeping food affordable for consumers, they often conflicted with long-term development goals for the sector, by reducing price incentives for producers of key agricultural commodities.

Results show that despite the volatile conditions faced by consumers, public expenditure targeting consumers was limited compared with expenditure targeting producers throughout the entire period of analysis. This was despite the fact that food security and affordability are policy objectives for all countries. Of the limited funds allocated directly to consumer programmes, the bulk was spent on maintaining and increasing public food stocks, which existed in six out of the ten MAFAP countries. This suggests that the food price crisis renewed interest in developing national food reserves, which was evidenced by the growing number of commodities included in countries' food stock programmes.

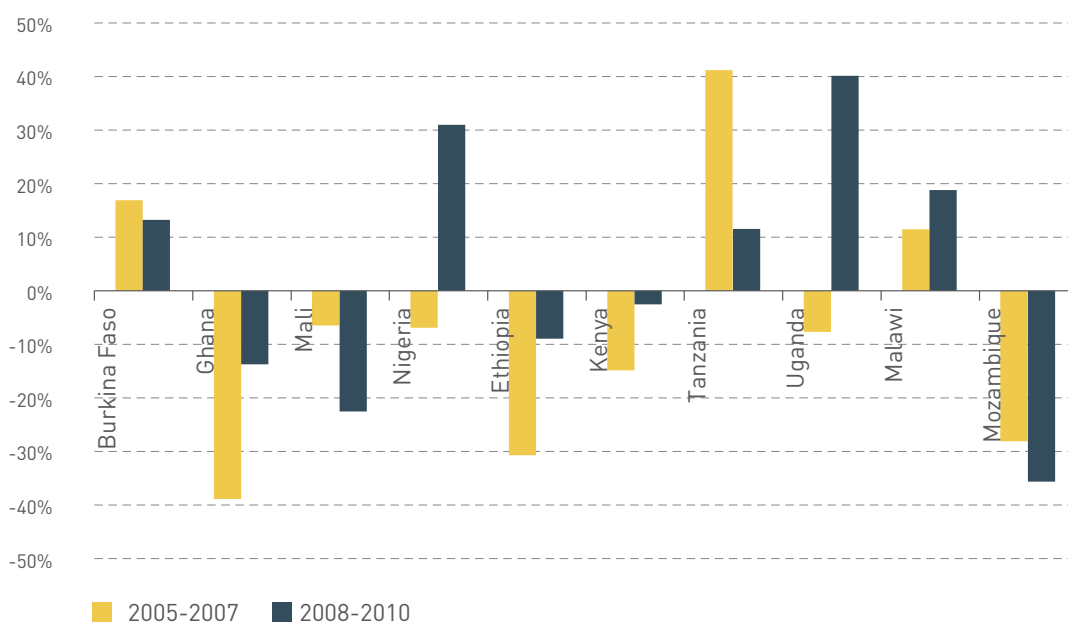
Results for price incentives at wholesale level serve as a proxy for the effects of policy and market distortions on consumers. For instance, price incentives for wholesalers reflected disincentives for consumers, who paid a higher price than they would have if policy and market distortions were removed. On the contrary, if policy and market distortions generated price disincentives for wholesalers, as was the case for most countries in Figure 40, then consumers faced price incentives. However, if domestic wholesale prices aligned with reference prices (showing zero percent deviation), then neither wholesale, nor consumer prices were affected by policy and market distortions. In this scenario, results indicate that domestic commodity markets were functioning efficiently, since both agents received the price they should have received in a distortion-free environment.

Figure 40 shows that during the 2007/08 global food price crisis, five out of the ten countries (Burkina Faso, Ethiopia, Ghana, Kenya and Tanzania) managed to reduce consumer prices for food security crops. This is reflected in the prices received by wholesalers, which tended to align with reference prices during the period 2008-2010. This can also be interpreted as consumers receiving prices closer to reference prices as a result of policies adopted during the food price crisis, specifically the relaxation of import tariffs and other protective trade measures.

For all other countries (Malawi, Mali, Mozambique, Nigeria and Uganda), price incentives results were mixed, with no clear pattern or trend. This is due to the wide variety of policy measures adopted by governments, as well as the distorting effects of high access costs, particularly for thinly-traded commodities.

Uganda is the only country where price incentives (or disincentives) to consumers were primarily influenced by market performance due to the country's liberalized trade policies and lack of price controls. Results for consumers of commodities essential for food security varied significantly between years. Price disincentives (taxes) for consumers existed for those commodities subject to an import tariff (wheat, sugar and rice), whereas consumers of thinly-traded commodities received incentives (support) throughout the period of analysis.

**FIGURE 40. AVERAGE PERCENTAGE DEVIATION OF WHOLESALE PRICES FROM EQUIVALENT WORLD PRICES FOR FOOD SECURITY COMMODITIES BY COUNTRY (OBSERVED NRPS\*), 2005-2007 AND 2008-2010**



\*Observed NRPs measure the effect of distortions from explicit market and trade policies, as well as overall market performance, on domestic prices.

Source: MAFAP

## Public expenditure

Public expenditure aimed at providing direct support to consumers was very limited, which is consistent with the policy frameworks of countries analysed by MAFAP. Indeed, such frameworks often put strong emphasis on the production side, even when referring to food security. Surprisingly, the food price crisis did not result in a major increase in consumer-oriented expenditure; this remained marginal compared with producer-oriented expenditure. The low levels of consumer-oriented expenditure suggest that most food

aid was provided by donor organizations. It is important to note that a large share of consumers are also producers and as such, may also benefit from public expenditure targeting producers.

## Policy measures

Most countries implemented protective market and trade policies, such as minimum prices and import tariffs to support producers and increase food supply (see Box 5). These policies often led to higher domestic prices, thereby taxing consumers. However, this situation was reversed during the 2007/08 global food price crisis, when domestic prices increased sharply. In response to these exceptional circumstances, countries mainly relied on market and trade policies rather than budgetary transfers to consumers, to keep food affordable.

Most policy measures, such as price ceilings in Burkina Faso, Kenya<sup>38</sup> and Mali, as well as subsidized prices in six of the ten countries, were implemented during the period 2007-2009. Price controls, together with trade measures such as the waiving of import duties or banning of staple food exports, reflect the significant amount of short-term, ad hoc policy decisions adopted during the food price crisis. These measures were not accounted for in strategic policy frameworks for most countries. In many cases, they even conflicted with long-term development goals for the sector, by reducing price incentives for producers of key agricultural commodities. Thus, governments would benefit from policies that support consumers without lowering incentives for producers.

### BOX 5. COMMON PRICE POLICIES IN THE TEN COUNTRIES ANALYSED BY MAFAP

**Price ceiling.** In 2008, the Government of Burkina Faso entered into negotiations with wholesalers and importers and agreed on a series of fixed prices to limit the impact of rising international prices on consumers. However, importers have not always respected the agreed prices. In 2009, Kenya established a price capping system at the retail and wholesale level for various commodities: maize, maize flour, wheat, wheat flour, rice, cooking fat, sugar, paraffin, diesel and petrol. However, it became effective in 2012. A similar measure was introduced in Mali, where milk and rice prices were controlled<sup>1</sup>.

**Release of food stocks at subsidized prices.** Subsidized prices were common in the vast majority of countries: Burkina Faso (2008, and 2009), Ethiopia (2008 and 2009), Malawi (2011), Kenya (2008) and Tanzania (2009).

1 FAPDA information, available at: <http://www.fao.org/economic/fapda/tool/Main.html>

38 Parliament passed a price control bill in 2009 for essential goods, but the price regulation was actually implemented in 2012.

Overall, food aid, price ceilings, subsidized prices and the release of food grain stocks were generally effective in controlling grain prices for consumers during the food price crisis. Indeed, in these countries where such policy measures were implemented grain prices at wholesale level (taken as a proxy for consumer prices) tended to align with reference prices.

For instance, Ethiopia and Mali are among those countries where policies aimed at controlling grain prices succeeded in keeping prices low for consumers, although this was largely at the expense of farmers and wholesalers. In these two countries, cereal import subsidies were often implemented in combination with cereal export bans, especially during periods when food prices were higher than usual. Overvalued exchange rates and underdeveloped markets also contributed to lower grain prices. Indeed, prices for rice and maize in Mali were below the prices consumers would have paid in the absence of policies affecting domestic price levels. The same trend was observed for maize in Ethiopia. However, food aid, which accounts for a significant share of cereal consumption in Ethiopia, may also have contributed to lower domestic prices, especially in the case of wheat.

## Food grain stocks

Food price crises in recent years have fuelled renewed interest in food grain stocks as a strategy for stabilizing prices and ensuring food security<sup>39</sup> (see Box 6). This is evidenced by the growing number of commodities included in some countries' food stocks and the use of new buffer stock mechanisms, such as those implemented in Ghana, where the National Buffer Stock Company (NAFCO) was established in 2010<sup>40</sup>.

### BOX 6. PUBLIC FOOD GRAIN STOCKS (BUFFER STOCKS)

Food grain stocks are operational in Burkina Faso (millet, maize, sorghum and rice, added in 2008, plus financial stocks), Ethiopia, Ghana (maize, paddy rice and soybeans), Kenya (maize), Mali (maize, millet, sorghum and rice) and Tanzania (maize and sorghum plus financial stocks).

In addition to price and trade policies, stock building and release measures were common instruments used to support consumers during the food price crisis. However, public expenditure results show that most of the countries analysed dedicated a very small share of their budget to public stock infrastructure (e.g. storage) and maintenance. In fact, with the exception of Mali and Tanzania, stock expenditure between 2006 and 2010 was almost non-existent. These findings seem inconsistent with national policy objectives, especially

39 The objectives of food grain stocks are often unclear, as they are used to stabilize prices and for food aid purposes.

40 For more information, please refer to the FAPDA Global Report (2013)



given the priority often given to public stocks within countries' agricultural development agendas.

Past and ongoing research indicates that public food grain stocks have proved to be unsuccessful in many cases, due to the high transaction costs governments must incur to manage them, which are hardly comparable to the benefits in terms of price stabilization. However, the World Bank (2012) stresses that food stocks, coupled with cash transfers targeting the most vulnerable populations, can be an effective instrument for strengthening food security.

## 4.2 Producer-oriented policies

### Key findings

Despite a large share of national budgets allocated to transport and market infrastructure development, price disincentives attributable to market inefficiencies, such as underdeveloped infrastructure and poorly organized value chains, are increasing.

In response to the food price crisis, governments adopted several input subsidy programmes, although such measures were not systematically included in the policy objectives.

Research and dissemination of knowledge are commonly included in policy objectives, but public expenditure for this purpose was not consistently allocated.

Producer-oriented strategies in all ten countries analysed by MAFAP generally focused on increasing production and productivity through direct support to producers. However, there were significant differences between countries with respect to policy implementation, the level and composition of public expenditure and the impact that these policies had on price incentives for producers.

### Direct assistance and support to agricultural infrastructure

The ten countries analysed by MAFAP consider agricultural production and productivity increase as one of the priorities in their agricultural development agendas. However, this policy objective did not always translate into a comprehensive implementation plan and a holistic approach to development. The only exceptions were Ghana, Tanzania and Uganda, where measures have aimed to support and assist farmers in several areas, from production to storage and marketing, including investment and access to financial services and equipment for day-to-day operations.

In all ten countries, input subsidies were the main policy measures used to provide direct support to

producers. Despite their importance, MAFAP's public expenditure analysis, which covered five of the ten countries (Burkina Faso, Kenya, Mali, Tanzania and Uganda), revealed that the budget share dedicated to indirect support (public goods) was higher than the share dedicated to direct support (private goods) for all countries except Burkina Faso. Payments to producers varied from 26 percent (Uganda) to 44 percent (Burkina Faso) of public expenditure in support of the agriculture sector between 2006 and 2010 (Figure 27). Prioritizing indirect support seems to be consistent with national policy objectives when considering the challenges producers face. Indeed, MAFAP's price analysis shows that one of the main causes of price disincentives for producers have been infrastructural gaps, which have often resulted in high access costs and weak market integration

### **Input programmes**

Policy measures implemented in all the countries analysed indicate that producers were mainly supported through input programmes. Levels of public expenditure allocated to inputs show that Burkina Faso, Kenya and Mali focused more on capital inputs (equipment) than on variable inputs (seed and fertilizer). In Burkina Faso and Mali, capital inputs consisted mainly of on-farm irrigation, which is consistent with national strategies to expand the total area under cultivation. In Tanzania and Uganda, capital input programmes were also well developed, but were not captured in the public expenditure analysis because they were mainly based on tax exemption, to facilitate the acquisition of equipment.

Input support programmes do not appear to be consistent with stated goals/development agendas, as fertilizer and/or seed support programmes became operational between 2008 and 2009 as ad hoc responses to the increased prices of agricultural inputs during the years of soaring food prices. This is particularly evident in countries such as Ethiopia, Ghana and Malawi, since these are dependent on imports for a wide array of production inputs.

Such ad hoc policy decisions challenge policy coherence due to the policy volatility and uncertainty that they generate. Indeed, they account for a large share of the public budget and require important human resources at ministerial level, which compromises the implementation of medium- and long-term policy plans. The positive impact of such responses on production is not guaranteed. For example, in Mali, rice producers received input subsidies, but faced low prices due to the lifting of import taxes to protect consumers. In Burkina Faso, producers also faced price disincentives and were poorly integrated into international markets, due to lack of quality and standardized production.

### **Indirect support to agriculture**

Almost all national agricultural development strategies refer to agricultural infrastructure improvement as well as generation (research) and dissemination of knowledge (education, extension services and technical assistance).

A review of policy decisions in five countries analysed by MAFAP shows that Kenya, Tanzania and Uganda implemented policy measures to support research and dissemination. The analysis indicates that in the three countries, research and dissemination represented close to 70 percent of the budget allocated to indirect support for agriculture. This appears to be consistent with those countries' policy objectives. The same cannot be said for Mali and Burkina Faso, which allocated 23 and 48 percent respectively of their indirect agricultural support budget to research and dissemination. The governments of Burkina Faso and Mali focused most of their indirect expenditure on infrastructure, especially irrigation, so as to boost rice production.

In some cases, low investment in technical assistance, education and extension services constrained the potential of input programmes, since inputs were not systematically provided with corresponding information on proper use. This was clearly evidenced in the case of Malawi, where farmers received input packages for maize production without proper technical assistance on how to use them.

In Kenya, Tanzania and Uganda, infrastructure development received less attention and resources than in Burkina Faso and Mali. This was particularly marked in the case of Tanzania, where expenditure on infrastructure was extremely limited. However, these spending levels were consistent with Tanzania's objectives and strategy, which aimed to develop public-private partnerships so as to promote infrastructure development.

The budget for irrigation was higher than that for road construction in all countries except Uganda. Moreover, Uganda was the only country that implemented specific policy measures targeting road development. MAFAP's price incentives analysis reveals that in the ten countries analysed, producers were mainly penalized by high access costs and weak integration with domestic and international markets.

### 4.3 Marketing, trade and macroeconomic-oriented policies

#### Key findings

Import duties resulted in higher prices for traders and wholesalers, but did not consistently translate into higher prices for producers. The overvaluation of the exchange rate prevented producers from receiving prices that reflected international prices.

#### Import policies

Nine out of the ten countries studied implemented import policies in the form of duties during the period of analysis, except in the case of Ethiopia (see Box 7).

## BOX 7. COMMON IMPORT POLICIES IN THE TEN COUNTRIES ANALYSED BY MAFAP

**Import duties.** Import duties ranged from 10 to 75 percent. They generally included commodities relevant to food security and for which countries showed a significant dependency on imports. These were primarily rice, maize and sugar. Although not always explicitly mentioned in strategic policy documents, import duties and restrictions were often implemented with the objective of developing the local industry and increasing self-sufficiency. Between 2008 and 2009, all ten countries suspended or reduced import tariffs on products relevant to food security, in an attempt to keep food prices low for consumers. In Burkina Faso, import duties were suspended for rice, oil, salt, dairy products, food preparations for children and cottonseed oil. In Mali, they were lifted for rice, milk and oil. In Kenya, import duties were suspended or reduced for wheat, maize and sugar. Malawi suspended its maize import duty, while Tanzania suspended import duties on various cereals. In Ghana, import duties on rice and maize were suspended, but reinstated at the end of 2009.

**Import restrictions.** In Nigeria, imports of poultry and eggs, pork, beef, cassava, some refined vegetable oils and cocoa butter were banned, while import tariffs were subsequently applied on cassava, maize and rice (for which imports were also banned until 2007-2008).

Overall, import duties and restrictions proved to be highly effective in raising wholesale prices in most cases. However, higher wholesale prices did not always translate into higher producer prices at farm gate. In most of the countries studied, price transmission between the wholesale and farm gate was weak, due to poor organization among farmers and their lack of access to market information. This often resulted in a concentration of market power and profits among upstream agents (wholesalers, traders and processors) in the value chain.

## Exchange rate policies

Exchange rate misalignment was one of the key factors contributing to price disincentives for producers in the four countries where currencies were overvalued: Burkina Faso, Ethiopia, Malawi and Mali.

The FCFA currency of Burkina Faso and Mali is pegged to the Euro. The overvaluation of the Euro against the US dollar resulted in an overvaluation of the FCFA from 2007 onwards<sup>41</sup>. This has led to a reduction in prices of imported commodities, such as rice and palm oil, thereby boosting their competitiveness. Overvaluation has also increased the price of exports, which has reduced their competitiveness on the international market. For these reasons, overvaluation poses a serious threat to future agricultural development and increased production.

41 Lançon et Benz 2007

MAFAP's analysis shows that in Burkina Faso and Mali, overvaluation of the FCFA prevented farmers from taking full advantage of rising world prices for rice and cottonseed oil in 2007 and 2008. Similar findings emerged for Malawi<sup>42</sup>, where overvaluation of the Kwacha since 2007 has penalized farmers, and in Ethiopia<sup>43</sup>, where overvaluation of the Birr has made imports unprofitable for traders, but much cheaper for consumers.

### **Local taxation, fees and illicit costs**

In some cases, local taxation and fees limited price incentives for producers. In Tanzania, for example, producers of sugar cane were penalized because of consumer taxes on sugar. Kenyan cattle producers were also heavily penalized by multiple or duplicate local taxes and fees imposed on traders moving cattle from remote pastoral areas to wholesale markets. These additional costs often reduce the price that traders are willing to pay producers for their cattle, resulting in lower price incentives.

Illicit costs from bribes and delays at roadblocks along commodity value chains also limited incentives for producers. In Kenya, it has been well documented that such non-tariff barriers have significantly affected maize producers and traders. The burden of these additional costs is often absent from policy documents and ignored by governments. However, it continues to be a widespread phenomenon, affecting producers in most countries.

### **Marketing policies**

Strategies aimed at improving access to markets and market efficiency were common across all of the countries analysed and referred to both domestic and export markets. All countries allocated a share of their budgets to marketing, ranging from 5 percent (Burkina Faso) to 14 percent (Mali) of the total budget for indirect support to agriculture. However, these budget allocations were quite small compared with other types of indirect support. Moreover, public expenditure targeting traders and transporters was non-existent in all countries.

### **Value chain functioning**

MAFAP results show that a majority of disincentives for farmers were not the result of explicit policies, but were rather the result of inefficiencies in the structure and functioning of commodity value chains. The main inefficiencies which contributed to price disincentives for producers included poor market and road infrastructure, as well as weak organization among producers and information asymmetry, resulting in the concentration of market power and profits among intermediaries (i.e. traders, wholesalers and processors).

42 Randal, 2013 (IMF)

43 Rashid, 2010

An analysis of the composition of public expenditure allocated to rural development (agriculture-supportive expenditure) shows that governments had different strategies for expenditure on road infrastructure. Burkina Faso, Tanzania and Uganda dedicated around half of their rural development budget to rural roads, while Mali dedicated 90 percent of its rural infrastructure budget to road development between 2006 and 2010. The budget for rural infrastructure in Kenya was particularly slim.

Most rural and agricultural development strategies highlight the need to develop and strengthen producer organizations. However, MAFAP's price incentives analysis identifies poor organization among farmers as a key issue contributing to producers' weak bargaining position and poor access to market information. In many cases, these factors have led to market incentives for traders and other intermediaries in the value chain, but disincentives for producers. Thus, policy measures have been insufficient to strengthen producers' access to markets.

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## 5. Summary of MAFAP results by country

This section provides a summary of results for the ten countries analysed, which draws from Country Reports and Technical Notes on price incentives for key agricultural commodities, as well as public expenditure in each country.

As indicated in the previous sections, at the time when this report was drafted, public expenditure analysis was undertaken in five of the ten countries: Burkina Faso, Kenya, Mali, Uganda and Tanzania. As a consequence, summaries for these countries also include key findings and messages emerging from the public expenditure analysis and the policy coherence assessment.

Furthermore, Burkina Faso, Kenya, Mali, Uganda and Tanzania are also the countries where Country Reports were produced in close collaboration with country partner institutions. These reports were officially presented to national government representatives, who provided feedback and comments for finalization. In Ethiopia, Ghana, Malawi, Mozambique and Nigeria, partnerships with national governments were established at a later stage in the MAFAP implementation process. Consequently, summaries for these countries draw on draft Country Reports or Technical Notes, which are now being updated and finalized. Public expenditure analyses are currently ongoing in these five countries, and the findings will be included in the next MAFAP Synthesis Report.

Country summaries are intended to complement and even supplement the price incentives analysis (Section 2), public expenditure analysis (Section 3) and policy coherence analysis (Section 4) presented in this report. This section provides an overview of national policy frameworks in the ten countries, highlights peculiarities in terms of commodities analysed, and presents more detailed results, which could not be captured at the aggregate level.



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## 5.1 Burkina Faso

During the past decade, the economy of Burkina Faso has seen considerable growth, but this remains insufficient to bring about a significant reduction in poverty, given the country's high population increase. The agriculture sector is performing well, with a 9 percent growth rate of agricultural GNP in 2010 (MEF/IAP, 2012) (Table 5). As such, it has made a major contribution to national economic growth, aside from the mining boom. Gold has become one of the country's main exports.

In 2009, agriculture contributed to 35.3 percent of GNP and accounted for more than 37 percent of national exports (MEF/IAP 2012, FAOSTAT 2012). Agricultural activity remains extensive, dominated (72 percent) by small-scale farms of less than 5 ha in 2008 (MEF/IAP, 2012). Cereals and cotton dominate agricultural production, and dry cereals and rice are the main foods consumed (DGPER, 2010). Aside from cotton, to which the government has dedicated special attention for a number of years, commodity sectors are poorly structured. However, agriculture is slowly diversifying, with development of new sectors such as horticulture. In addition, there is good scope offered by, among other features, the availability of agricultural land, potential for irrigation, significant herds of livestock and the young average age of the population. Poor organization of rural areas remains a cause for concern for the government. Farms also face constraints of poor access to inputs, low levels of equipment and problems of finance. In 2008, just 0.2 percent of farms were estimated to use a tractor (DGPER, 2011).

The main policy framework for the period studied was the Strategic Framework for Poverty Reduction (CSLP, 2000-10), which set targets for the agriculture sector to increase agricultural production and productivity, and to establish a favourable business environment. The Rural Development Strategy (SDR, 2003-15) was also developed, in order to translate the CSLP objectives into actions. It aims at achieving sustainable growth for the agriculture sector, ensuring food security and promoting rural development. The main commodities targeted by policies were rice (National Rice Development Strategy, 2009) and cotton (guarantee of minimum price implemented in 2006). Producers also received indirect support with the implementation of rural development programmes focusing mainly on hydraulic infrastructures. The FCFA has a fixed exchange rate against the Euro, which is overvalued by an estimated 20 percent.

TABLE 5. DEVELOPMENT AND PERFORMANCE INDICATORS IN BURKINA FASO

INDICATORS	LAST VALUES
Agriculture, value added (% of GDP)	35% (2009)
Agriculture, value added (annual % growth)	9% (2010)
Share of agricultural/total exports, in value	37% (2010)
Share of agricultural/total imports, in value	20% (2010)
Share of small farms <5 ha	72% (2007)
Poverty headcount ratio at \$1.25 a day (PPP) (% of population)	44% (2010)
Human Development Index-ranking	0.331 (2012)
Prevalence of undernourishment (% of population)	8% (2008)

## Measuring the impact of policy and market performance through prices

Between 2005 and 2010, producers received prices below those that they would have received in the absence of current policies and with more efficient markets (Figure 41). The prices that farmers received were 10 to 15 percent below those that they could have obtained. This has limited both farmers' incomes and their capacity to invest. Lower prices for farmers have not necessarily translated into lower prices for consumers. Even though Burkina Faso does not tax agricultural exports, farmers rarely benefit from higher prices in regional markets due to poorly functioning value chains. For all commodities except cotton, extra expenses are mainly due to excessive transport costs and lengthy border crossing procedures. Farmers would greatly benefit from domestic policies aimed at lowering marketing costs. Burkina Faso's overvalued currency also penalizes farmers. The overvaluation of the CFA franc means that producers of all commodities, except rice, receive lower prices than they would have, if the franc was realigned to the US dollar. However, realigning the franc would cause consumer prices and the cost of imported inputs to increase.

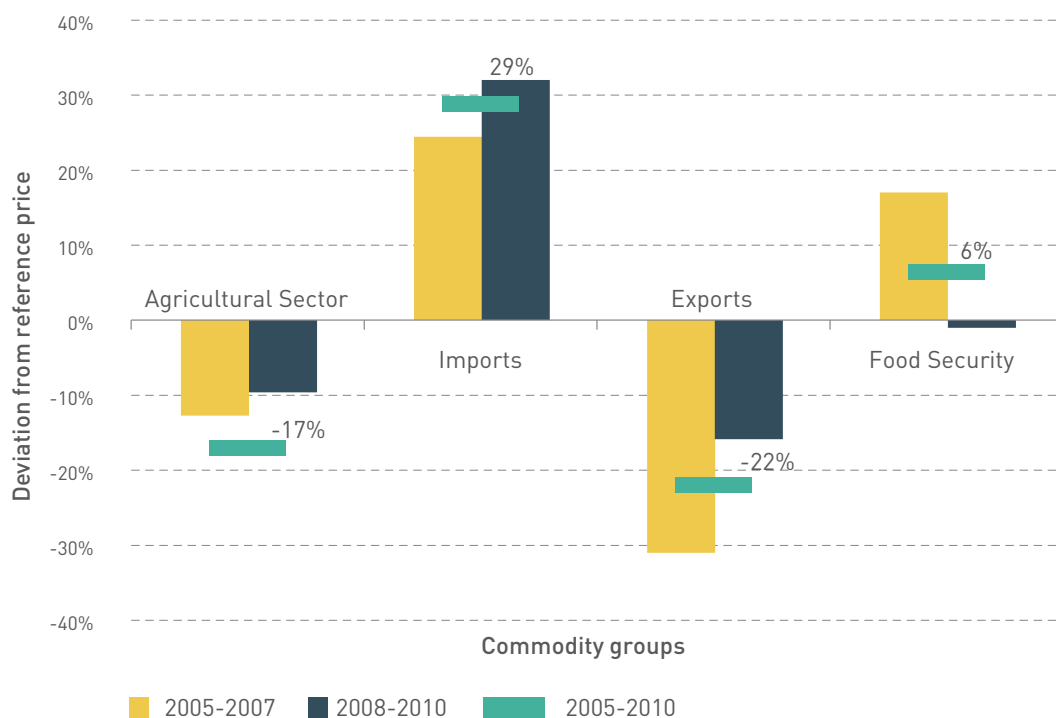
Despite average disincentives, farmers growing specific products, in particular rice, cotton and sorghum, received higher prices than those they would have obtained in a policy-free and efficient market environment. The reasons for this are diverse: import tariffs keep prices high for rice farmers, but lead to higher prices for rice consumers. Cotton farmers receive higher prices from the three domestic cotton boards - the sole buyers for cotton in Burkina Faso. However, cotton is often exported at a loss. Sorghum prices in Burkina Faso are higher than regional benchmark prices, which creates production incentives. Nevertheless most producers export to neighbouring countries instead of marketing sorghum domestically and benefiting from high prices.

In terms of time trends, the 2007 to 2008 food price spikes were marked by an increase in disincentives for farmers. This was because government policies focused on making food more affordable for consumers. Producer prices for some import commodities did not follow the international price spike due to ceiling prices

that were imposed. Prices also remained low for thinly-traded commodities, which were often important for food security but were disconnected from the regional or international market. As a consequence, after 2007 there was a sharp decline in producers' incentives for commodities that are important for food security

Current policies and weak market performance make food more expensive for consumers, while reducing prices for producers of exported commodities.

**FIGURE 41. AVERAGE PERCENTAGE DEVIATION OF PRODUCER PRICES FROM EQUIVALENT WORLD PRICES BY MAJOR COMMODITY GROUPS IN BURKINA FASO, 2005-2010**



*Note.* The bars measure the average percent deviation of the price producers received from the equivalent world price, which represents the price producers could have received if domestic policy and market distortions were removed. The equivalent world price is the reference price and corresponds to zero percent in the graph. Imports analysed include cottonseed and rice; exports include cattle, cotton, gum arabic, sesame; and commodities important for food security include maize, rice, sesame, sorghum and groundnuts.

Source: MAFAP

## Reviewing agricultural and rural public expenditure

On average over the 2006-2010 period, Burkina Faso allocated more than ten percent of its budget to agriculture and rural development, with a two percent increase for budgeted expenditure from 2006 to 2010, and a 6 percent increase for disbursement (Figure 42). However, the share of the overall budget devoted to agriculture and rural development decreased by four percent during the period analysed.

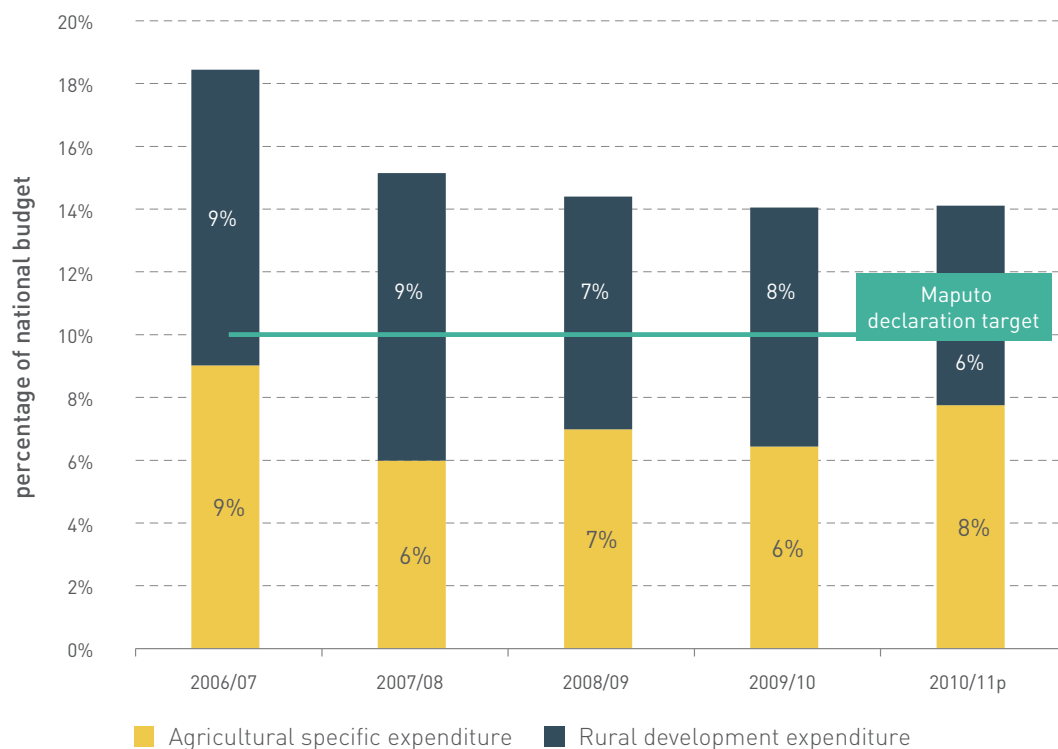
The composition of public expenditure has shifted away from support to rural development towards support to the agriculture sector. Furthermore, expenditure in support of agriculture has moved towards more general support (i.e. training, agricultural research and off-farm infrastructure) and away from direct payments to farmers and other people working in the agriculture sector.

Although underdeveloped markets are the main reason for farmers' disincentives, there is limited support for improving infrastructure that would make markets more efficient. In particular, public expenditure on marketing and storage infrastructure, as well as rural roads, remains limited. Public expenditure on agriculture is dominated by payments to producers through input subsidies (38 percent). By contrast, very small percentages are spent on marketing (3 percent), storage (0 percent), inspection (1 percent), extension (3 percent), technical assistance (1 percent) and agricultural research (6 percent).

Public expenditure on agriculture and rural development brought crosscutting support to all products, representing 73.2 percent of total spending in 2010. The share of spending to support commodity groups saw a regular increase between 2006 (8.7 percent) and 2009 (21.5 percent). Almost 90 percent of commodity specific public expenditure goes to rice and cotton. Commodities that are most important for people's diet are not targeted by specific policies or strategies.

Development aid to the agriculture sector declined from 114 to 101 million FCFA between 2006 and 2010. Over the period 2006-2010, the share of external financing, made up of an average 54.2 percent in loans, accounted for an average of 71 percent of total public expenditure on agriculture and rural development.

FIGURE 42. PUBLIC EXPENDITURE ON AGRICULTURE AND RURAL DEVELOPMENT IN BURKINA FASO, 2006-2010



Source: MAFAP

### Assessment of policy coherence

Over the period studied, the government of Burkina Faso used trade and price policies, rather than public expenditure, to support consumers. The government provided little policy support to staple crops that are key for food security, using export restrictions as an alternative tool. However, during the food price crisis, the government temporarily lifted import taxes and imposed ceiling prices on rice in order to lower prices for urban consumers. This was not considered successful due to a handful of importers controlling import and retail prices. Burkina Faso was, however, the only country analysed by MAFAP in which the government increased public expenditure in favour of consumers (6 to 12 percent increase between 2006 and 2010), through food aid, school feeding programmes, vouchers and cash transfers. Despite this increase, the overall limited direct support to consumers appears to be coherent with the government's policy objectives, which are heavily focused on boosting productivity, with low emphasis on food security.

With regards to producer-oriented policies, the government of Burkina Faso invested in input subsidies (38 percent of agriculture-specific expenditure) more than in general agricultural infrastructure (20 percent). However, most of the input subsidies consisted of on-farm irrigation equipment rather than variable inputs, which is explained by Burkina Faso's climatic conditions and the government's focus on irrigated rice

production. Indeed, rice and cotton accounted for more than 90 percent of expenditure targeting single commodities. Together with training, general agricultural infrastructure, mainly in the form of feeder roads and irrigation canals, also represented an important share of public expenditure on agriculture. Research and development were poorly funded. There is incoherence in the type of support provided to producers, since, in the long term, the low support given to research and agricultural infrastructure will compromise the objective of boosting the country's productivity for several crops. The objective of diversifying production also appears to be contradicted by the focus on rice and cotton. Finally, the trade policies put in place (export restrictions, lifting of import taxes) did not provide incentives to producers, thereby posing yet another challenge to the development and diversification of Burkina Faso's agricultural production.

## 5.2 Ethiopia

Ethiopia is the most populous sub-Saharan country after Nigeria. The country is experiencing one of the fastest levels of economic growth on the continent, with an average estimated at 7 percent in 2011/2012.

Agriculture is a major contributor to the country's growth, accounting for as much as 47 percent of GDP (Table 6). The sector employs 80 percent of the active population, and agricultural exports represent 77 percent of total export earnings. Although remaining strong, the sector growth rate experienced a constant decline from 2004 (16.9 percent) to 2011 (5.2 percent). Agriculture remains largely small-scale, with 95 percent of farms measuring less than 5 hectares. Forty-one percent of the population was undernourished in 2011.

The Ethiopian government has adopted a particularly interventionist policy position on food and agriculture. During the 2005-2010 period, it implemented an array of trade and market policies, as well as budgetary transfers and macroeconomic checks to influence the sector.

First and foremost, the government has taken strong steps to boost agricultural production so as to meet growing demand and increase export revenues and rural incomes. The strategic framework for the sector was defined in the Plan for Accelerated and Sustained Development to End Poverty (PASDEP), which covered the 2005-2010 period. The strategy outlined objectives of increasing production and trade of high value export crops, in particular coffee, and better integration of farmers to domestic and international markets. The development of large-scale commercial agriculture was also an important objective.

The government has also implemented the Productive Safety Net Programme to support consumption. The programme provides food and cash transfers, especially through cash for work projects. Given the strong vulnerability of consumers over the period, due to high food prices and food price volatility resulting from the 2007-2008 crisis, the government adopted additional trade and market measures to protect them. Such measures essentially consisted of removing VAT from imports, distributing subsidized wheat and food aid and imposing export bans and restrictions in order to reduce domestic prices. Although the measures were partly effective in lowering consumer prices for staple crops, they also depressed producer prices and limited export revenues from staple crops.

By contrast, high value exports were promoted. In 2008, the government created a state controlled commodity exchange market to enhance exports of coffee, haricot beans and sesame. Furthermore, the government had strong control over imports of inputs through parastatal agencies. Despite significant earnings from high value exports, the agricultural trade balance of Ethiopia remained negative throughout the period analysed.

The Ethiopian Central Bank, which is not independent from the government, was also used to influence the



sector. The Ethiopian Birr/US dollar exchange rate is considered to have been overvalued, especially following the 2007/08 global food price crisis. This has facilitated imports and made exports less attractive. Foreign currency availability has also been limited, with the policy intention of impeding imports by private traders.

TABLE 6. DEVELOPMENT AND PERFORMANCE INDICATORS IN ETHIOPIA

INDICATORS	LAST VALUES
Agriculture, value added (% of GDP)	47 % (2010)
Agriculture, value added (annual % growth)	5.2% (2010)
Share of agricultural/total exports, in value	76.7% (2010)
Share of agricultural/total imports, in value	14.3% (2010)
Share of small farms <5 ha	95%
Poverty headcount ratio at \$1.25 a day (PPP) (% of population)	30.7 (2011)
Human Development Index-ranking	173
Prevalence of undernourishment (% of population)	41% (2010)

## Measuring the impact of policy and market performance through prices

Between 2005 and 2010, farmers received lower prices compared with international levels (Figure 43). Policies in place, especially for imports, coupled with weak market performance, made food less expensive for consumers, while depressing prices for producers.

Strong government policy interventions, aimed at lowering consumer prices for food staples<sup>44</sup> – especially following the food crisis – resulted, as expected, in price disincentives for maize, wheat, sorghum and teff producers. Exports were restricted for all four commodities during the period, and completely banned after 2008. Producers did not benefit from the high food prices and thus faced price disincentives. Meanwhile, the government subsidized sales (for wheat) and food distribution, which contributed to depressing prices for the locally produced staples. Additionally, the Ethiopian Central Bank adopted an overvalued exchange rate over the period, which increased competition from low-priced imports.

However, explicit government policies are not the only explanation for price disincentives linked to food staples. Market inefficiencies were particularly acute in each of these value chains. Transport costs are considered excessive due to lack of storage infrastructure and shortage of large vehicles, which result in transport of sub-optimal quantities along the value chains, low economies of scale and ultimately, weak prices offered to producers to compensate for marketing costs. Grading and standard procedures are inexistent for the

44 Import commodities are the same as food security commodities, except that they do not include teff, which is considered an exportable product. The food commodity subset is thus not mutually exclusive of the two other subsets (import and export). The agricultural sector NRP is calculated as a weighted average of all commodities' NRP.

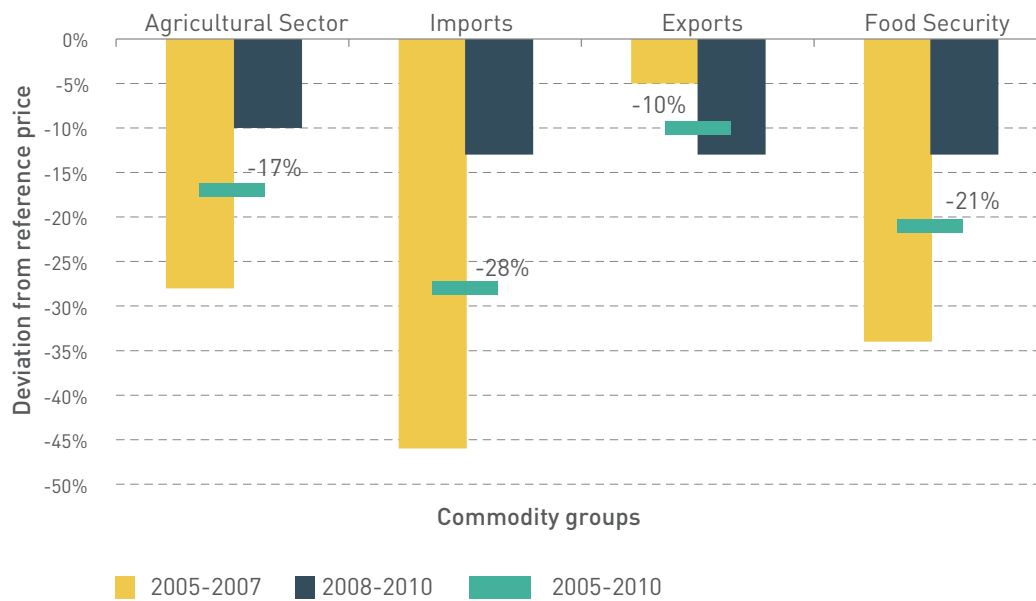
four commodities, which has further undermined opportunities for producers to benefit from higher prices. Lower disincentives for food security commodities in 2008-2010 mainly reflect the incentives experienced by sorghum producers in 2008 and 2009. These were due to an exceptional rise in domestic prices of the commodity, caused by the food crisis. The 2010 lifting of the export ban for most commodities also generally contributed to lower price disincentives.

Over the 2005-2010 period, producers of export products received lower disincentives than producers of staple crops. Indeed, whilst it restricted exports of staple crops, the government promoted exports of high value crops: coffee, sesame and haricot beans. Exports of the two latter commodities saw a boom after 2005 due to a surge in world prices and strong government budgetary support in developing the value chains (notably through research and extension, input subsidies.) However, the three value chains have continued to be dogged by market inefficiencies, especially excessive transport and processing costs, high numbers of intermediaries, various non-optimal fees and high margins from traders.

In order to tackle such market failures, the government created the Ethiopian Commodity Exchange market (ECX) in 2008. This is an auction market system aimed at making export value chains more efficient. The system set up official delivery centres in production areas, offering grading and standard procedures, and established a formal status for traders and exporters, who were obliged to pay for a seat on the ECX trading floor in Addis Ababa. With the exception of a few cases, producers, traders and exporters are required to conduct all transactions using the ECX system. Coffee is the only value chain for which MAFAP indicators can provide an assessment of the impact of ECX, given that haricot beans and sesame were introduced at the end, or after, the period of analysis (2005-2010). It appears that for coffee, the ECX system resulted in increasing access costs from 2008 to 2010. This can be explained by the fact that ECX is in its early stages, setting up additional administrative steps and procedures which are not yet optimal, compared with the long established direct relationships that used to exist between producers, traders and exporters. Incentives for coffee, however, have increased over the period due to the market power of main traders at ECX, who used strategically timed shortages to raise auction prices.

Additional disincentives faced by producers of export commodities in 2008-2010, compared with 2005-2007, were mainly caused by lower rates of protection for teff. Teff's weight in the overall average for export commodities was strong due to its high production volume. The measures adopted by the government to lower prices of staples following the food crisis explains the increasing levels of disincentives seen in the case of teff. It is worth noting that teff, a major food product specific to Ethiopia, is increasingly considered a high potential export product for the large Ethiopian diaspora. Government policies that restrict exports of teff have therefore had the effect of causing significant losses to the country's export earnings and producers' incomes. This policy has not necessarily been successful in supporting food security, since teff is something of a 'luxury' product for the urban and rural poor.

FIGURE 43. AVERAGE PERCENTAGE DEVIATION OF PRODUCER PRICES FROM EQUIVALENT WORLD PRICES BY MAJOR COMMODITY GROUPS IN ETHIOPIA, 2005-2010



Note. The bars measure the average percent deviation of the price producers received from the equivalent world price, which represents the price producers could have received if domestic policy and market distortions were removed. The equivalent world price is the reference price and corresponds to zero percent in the graph. Imports analysed include maize and wheat; exports include coffee, haricot beans, sesame and teff; and commodities important for food security include maize, sorghum, teff and wheat.

Source: MAFAP

## 5.3 Ghana

Ghana is one of the fastest growing countries in Africa. Between 2008 and 2012, its annual average growth rate of nearly eight percent greatly contributed to reducing poverty. Ghana is on track for achieving the MDG goals of reducing by half the proportion of the population living in extreme poverty and achieving universal primary school enrolment. The reduction in poverty can be attributed to strong growth in the cocoa and forestry sub-sectors. Despite these gains, income inequality across regions and among socio-economic groups remains high and has increased during the period of accelerated growth.

Agriculture has been the backbone of Ghana's economy and contributed to 30.2 percent of the country's total GDP in 2010 (Table 7). Ghana's new Food and Agriculture Sector Development Policy (FASDEP II) aims for "a modernised agriculture culminating in a structurally transformed economy." FASDEP sets long-term policy objectives for developing the agriculture sector and enabling stakeholders to take advantage of emerging opportunities. Another policy, the Medium Term Agricultural Sector Investment Plan (METASIP), has established medium-term investment priorities (2011-2015). Finally, the Savannah Accelerated Development Initiative (SADI) was adopted in 2010 to address the development gaps between northern and southern Ghana.

The main consumer-oriented policies have included the establishment of emergency and operational stocks from 2010 through the National Food Buffer Stock Company (NAFCO). Food aid took the form of school feeding programmes (2005-10). Cash transfer programmes were designed (2008-12), as well as measures to increase incomes and create jobs. Producers were supported through a fertilizer subsidy program introduced in 2008 and through the promotion of mechanization. In comparison with other crops, rice has been especially targeted (National Rice Development Strategy, 2008), as have export commodities, including cocoa. As regards trade policies, import taxes on rice, wheat and maize were removed in 2008, in response to the food crisis. They were restored in 2009. Export tariffs have only been applied to cocoa.

The global food price crisis (2007-08) triggered a set of policy interventions such as the temporary suspension of import duties, changes in the level of taxes for exported crops and other forms of agricultural support. These policies sometimes had conflicting effects on the agriculture sector.

TABLE 7. DEVELOPMENT AND PERFORMANCE INDICATORS IN GHANA

INDICATORS	LAST VALUES
Agriculture, value added (% of GDP)	30% (2010)
Agriculture, GDP (annual % growth)	5.3% (2010)
Share of agricultural/total exports, in value	15.5% (2010)
Share of agricultural/total imports, in value	11.1% (2010)
Share of small farms <5 ha	49% (2008)
Poverty headcount ratio at \$1.25 a day (PPP) (% of population)	Total: 28.5% (2006)
	Rural: 39.2% (2006)
Human Development Index-ranking	135
Prevalence of undernourishment (% of population)	5% (2008)

## Measuring the impact of policy and market performance through prices

Between 2005 and 2010, producers received lower prices compared to international prices, though this negative gap decreased over the period of analysis (Figure 44). Policies and weak market performance made food more expensive for consumers, while reducing prices for producers of food security crops and exports.

This trend for diminishing disincentives for the agriculture sector as a whole was the result of various heterogeneous factors: producers of imported commodities received prices which tended to be aligned with international prices during the period 2008-10, while producers of exported commodities still received disincentives, although these were lower than during the period 2005-2007. Producers of exported commodities received lower prices than they might have obtained, as a result of policies, traders' strong market power and inefficiencies in the value chain.

Commodities important for food security that were thinly-traded, such as cassava, sorghum or yam, showed the highest disincentives for Ghanaian producers when compared with international prices. This was due to the absence of policies aimed at boosting production and/or value chain development and the disconnection of producers with regional and international markets.

Most of the incentives for imported commodities were due to trade policies, while disincentives for export commodities related to taxes and inefficient market infrastructure.

For all imported commodities, protection at the farm gate was eroded by high transport and marketing costs due to lack of market integration and inefficiencies in the value chain. This translated into farmers bearing the costs of such inefficiencies and being penalized more heavily than traders/processors. For imported commodities, such as rice and maize, the negative gap between domestic and international prices was attributable to the excessive costs of moving commodities within the country, primarily from main producing

areas to wholesale markets. The costs of port handling and various fees and taxes applied on imported commodities did not protect domestic producers, and at the same time taxed consumers, who paid higher prices than they would have in the absence of import restrictions.

The presence of import restrictions and a wealth of additional taxes and fees show that there is still a long way to go towards regional integration and the creation of a Free Trade Area among ECOWAS states.

Farmers producing export commodities would have obtained higher prices in a policy-free environment and with better market performance. Factors which kept producers' prices low included export taxes on cocoa, an administered producer price system and a monopolistic export market, as well as poorly functioning value chains for yam.

One overarching barrier has been the infrastructural gap between rural and urban areas, together with the difference between the poorer northern region and the more developed Southern part of Ghana. This appears to have been the major source of disincentives for agricultural producers of all commodities analysed. The situation is not the case for traders, who in most cases have had incentives, thanks to their connection with markets and the possibility of transferring the risk of receiving low prices to producers.

**FIGURE 44. AVERAGE PERCENTAGE DEVIATION OF PRODUCER PRICES FROM EQUIVALENT WORLD PRICES BY MAJOR COMMODITY GROUPS IN GHANA, 2005-2010**



*Note.* The bars measure the average percent deviation of the price producers received from the equivalent world price, which represents the price producers could have received if domestic policy and market distortions were removed. The equivalent world price is the reference price and corresponds to zero percent in the graph. Imports analysed include rice and palm oil; exports include cocoa and yam; and commodities important for food security include maize, rice, cassava, yam, palm oil and sorghum.

Source: MAFAP

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## 5.4 Kenya

Agriculture was identified as a key pillar of the economy in Kenya's Economic Recovery Strategy (ERS, 2003-07). Agriculture contributes to 25 percent of total GDP and employs 75 percent of the national labour force (Table 8). To establish a framework for implementing the ERS, the government launched the Strategy for Revitalizing Agriculture (SRA, 2004-14), which aims at wealth and employment creation through commercial, market-oriented and profitable agriculture, which may also improve food security. Under this framework, efforts have been made to reform and consolidate the sector's large number of institutions, and to scale back government intervention by reducing its regulatory functions. In addition, the SRA recognizes the importance of public and private partnerships and focuses on modernizing the sector, improving agricultural infrastructure and services, and increasing farmers' access to markets.

The SRA was later revised, resulting in the Agricultural Sector Development Strategy (ASDS, 2010-20), which seeks to facilitate Kenya's transition from subsistence agriculture to agriculture as a business. The ASDS focuses on six thematic areas: legal, regulatory and institutional reforms; inputs and financial services; research and extension; food and nutrition security; sustainable land and natural resource management; and agribusiness, access to markets and value addition.

This market-oriented approach has led to increased growth within the agriculture sector. However, Kenya's policy in recent years has focused less on long-term development and more on temporary policy measures in response to short-term events, such as natural disasters and political instability, which caused domestic food shortages. Within this context, the government implemented short-term measures such as the removal or reduction of tariffs from 2007 to 2010 (mainly for maize, wheat and sugar), export bans (mainly for maize and nuts), a price control bill to fix maximum wholesale and retail prices for essential goods from 2009 to 2011 (though this policy was never fully implemented), input subsidies to producers (mainly for fertilizer and seeds) and price support through government procurement. Additionally, food assistance was provided through school feeding programmes and emergency stocks increased from 2008, particularly maize and wheat reserves.



TABLE 8. DEVELOPMENT AND PERFORMANCE INDICATORS IN KENYA

INDICATORS	LATEST VALUE
Agriculture, value added (% of GDP)	25% (2010)
Agriculture, value added (annual % growth)	3% (2012)
Share of agricultural/total exports, in value	18.9% (2010); 45.5 % (2011)
Share of agricultural/total imports, in value	14.1% (2011)
Share of small farms <5 ha	75% of total agricultural output
Poverty headcount ratio at \$1.25 a day (PPP) (% of population)	45.9% (2005)
Human Development Index-ranking	.509 (2011)
Prevalence of undernourishment (% of population)	33% (2008)

## Measuring the impact of policy and market performance through prices

Price incentives for producers generally increased between 2005 and 2010 (Figure 45). However, this trend was largely driven by short-term events in 2008 and 2009, which reduced the domestic supply of many crops, resulting in higher prices for producers. Therefore, it is uncertain whether this positive trend will be sustained in the long term. Between 2005 and 2007, producers of imported commodities and food security crops received lower prices than equivalent world prices, indicating that they faced price disincentives. After 2008, price disincentives for these commodities decreased due to markets, the weather and other factors, which led to higher domestic prices. On the other hand, prices obtained by producers of key exports were close to equivalent world prices throughout the study period, indicating that Kenya's main agricultural export markets were functioning efficiently.

Price incentives for the agriculture sector as a whole increased dramatically during the period analysed, which was also mainly due to short-term events that affected both domestic supply and prices. This commodity grouping includes all imports, food security crops and exports analysed, in addition to commodities traded in low volumes.

Staple food crops were least affected by inefficiencies in domestic markets, while milk, cattle, cotton, sugar and smallholder coffee producers were most affected. For staple food crops, inefficiencies were mainly due to government taxes and fees (except fees for services), bribes and delays at roadblocks and weighbridges. However, for milk, cattle, cotton, sugar and smallholder coffee producers, inefficiencies largely stemmed from structural issues such as the concentration of market power and profits among downstream intermediaries, information asymmetry and poor regulation and organization among producers. These market distortions in commodity value chains translated into lower domestic prices and represented significant costs for producers.

Import tariffs were generally effective in keeping prices for wheat, rice and sugar higher for producers, but did not always affect prices for maize and sorghum. Wheat and rice are both routinely imported from world markets, so tariffs are effective in keeping domestic prices higher for producers. Maize and sorghum, on the other hand, are typically imported duty-free from countries within the EAC and COMESA regions, and are only imported from world markets under exceptional circumstances. Consequently, tariffs are not always effective in keeping maize and sorghum prices higher for producers.

With respect to sugar, quota and over-quota tariff policies established to protect producers led to higher domestic prices in most years analysed. However, the level of protection has decreased as these measures have gradually been removed, and they will probably be eliminated entirely by 2014. Indeed, trends suggest that the quota limit on sugar imports is no longer binding.

Consumers have been adversely affected by tariffs on food imports, especially those on wheat and rice. Kenyans in urban areas spend nearly as large a share of their food budget on wheat and wheat products as on maize and maize products. With respect to rice, however, it seems likely that consumers most adversely affected are those in urban areas with moderate to high incomes, since many low-income consumers still cannot afford this product.

Statutory levies on coffee exports resulted in price disincentives for both estate and smallholder producers. Collectively, these levies amount to a four percent export tax, with one percent going to the Coffee Board of Kenya, two percent to the Coffee Research Foundation and another one percent to the Kenya Roads Board and local authorities. At farm level, this has translated into an effective output tax of five to seven percent, which may account for as much as 25-50 percent of some farmers' profits. Furthermore, all these levies are for functions and services normally provided by the government, and such fees are rarely charged in developed countries. However, it is important to note that while these levies result in price disincentives for producers, certain levies may actually provide support to producers (e.g. through research and development), which may offset some of the disincentives.

Low levels of diversification have hindered Kenya's export potential. The country relies on a few agricultural exports and trade partners. Among the exported products, tea accounts for more than 50 percent of the value of Kenyan agrifood exports, and more than 60 percent of tea exports go to just three consumer countries (Egypt, Pakistan and the UK). This makes Kenyan exports highly vulnerable to external pressures.

FIGURE 45. AVERAGE PERCENTAGE DEVIATION OF PRODUCER PRICES FROM EQUIVALENT WORLD PRICES BY MAJOR COMMODITY GROUPS IN KENYA, 2005-2010



Note. The bars measure the average percent deviation of the price producers received from the equivalent world price, which represents the price producers could have received if domestic policy and market distortions were removed. The equivalent world price is the reference price and corresponds to zero percent in the graph. Imports analysed include maize, wheat, rice, sugar and cotton; exports include coffee and tea; and commodities important for food security include maize, wheat, rice and sorghum.

Source: MAFAP

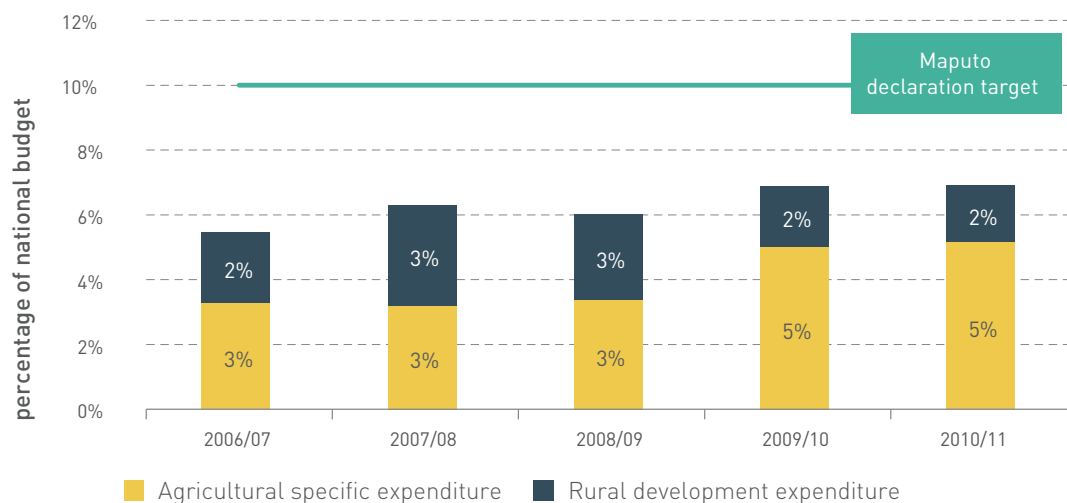
## Reviewing agricultural public expenditure

The percentage of the government budget allocated to agriculture and rural development has increased since 2006, though it is still well below the Maputo target (Figure 46). The approved budget for all expenditure to support agriculture and rural development grew by 122 percent in nominal terms between 2006/07 and 2010/11, reaching 66.1 billion Kenya Shillings. Expenditure allocated directly to the agriculture sector more than doubled over the period analysed, while spending allocated to rural development increased by about half. Extension services, research, infrastructure and input subsidies to producers (mainly for capital investments) made up the largest share of agriculture-specific expenditure. Rural development expenditure was almost equally distributed among rural education, health and infrastructure, with water and sanitation accounting for a much larger share than energy and roads.

Further disaggregation of agriculture-specific expenditure shows that most government funds were allocated to projects and programmes in support of all commodities, while funds allocated to commodity groups constituted about one-third and those to individual commodities only a small proportion. Among expenditure in support of individual commodities, by far the largest share went to fish, followed by maize, dairy, cotton, silk, coconut, coffee and tea. The largest share of expenditure on commodity groups went to livestock and

crops, followed by horticulture, sheep and goats, apiculture and livestock.

FIGURE 46. PUBLIC EXPENDITURE ON AGRICULTURE AND RURAL DEVELOPMENT IN KENYA, 2006-2010



Source: MAFAP

## An assessment of policy coherence

Many short-term policies supporting consumers during domestic food shortages were often inconsistent with long-term food security objectives by reducing price incentives for producers of commonly imported staple foods. This incoherence between agricultural long-term and short-term policies highlights the dilemma of balancing support to both producers and consumers, which becomes even more difficult during food shortages.

Policies to promote commercial, market-oriented and profitable agriculture to raise incomes and increase food security in Kenya are supported through public expenditure, though apparent imbalances across spending categories exist. The government has invested heavily in research and extension, which can bring benefits through improved agricultural productivity, and even contribute significantly to poverty reduction. Recent expenditure on rural infrastructure, both on and off-farm, have been essential for reducing transaction costs and improving farmers' access to markets. However, there has been limited investment in developing markets (namely in marketing and inspection services), building storage facilities and increasing public food stocks.

Despite policy efforts and substantial investments in infrastructure, market inefficiencies are still constraining price incentives for agricultural producers. It can be observed that all products are affected negatively by inefficiencies, whatever their trade status, and regardless of their status from the point of view of incentives and disincentives resulting from the effects of explicit policies (trade policies, pricing policies, etc.). These

distortions represent additional disincentives at producer level, stemming from implicit policies such as taxes and fees, or the absence of policies: lack of infrastructure, rigidities and information asymmetry. Inefficiencies highlight gains and cost savings that could be achieved if the necessary investments were made, notably in transport infrastructure and technology acquisition, and if adequate measures were taken, especially to eliminate bribes and excessive profits of intermediaries due to monopolistic behaviour.

Trade policies to protect sugar producers are not yielding intended results due to market inefficiencies. In most years analysed, Kenya's quota and over-quota tariff applied to sugar imports from COMESA countries provided price incentives to farmers. However, these incentives were often outweighed by price disincentives resulting from market inefficiencies, such as sugar factories' high profit margins. Even as trade restrictions were gradually lifted and domestic sugar prices decreased, factories lowered the price paid to farmers in order to maintain their profit margin. Therefore, it is clear that the concentration of market power and profits among factories in the sugar value chain hinders farmers. Moreover, results suggest that the quota limit was raised to the point where it was no longer binding in 2010, indicating that trade measures may be ineffective in providing price incentives to farmers.

Tariffs on wheat imports have been inconsistent with national objectives to increase food security, as they represented a significant tax to consumers, while providing support to producers. For more than 50 years, Kenya has provided support to wheat producers through protective trade policies, even though many are large-scale, commercial farms. While government protection could have perhaps have been justified in the past, since most wheat was consumed by high-income households, recent trends indicate that low-income households in urban areas are spending nearly as large a share of their food budget on wheat and wheat products as they are on maize and maize products. Thus, a tariff on wheat is a tariff on poor consumers and, as the results show, it affects domestic prices.

Kenya is moving toward policy coherence, but there still are important constraints to be addressed. Policies have been gradually adapting to the country's general policy and political shifts towards market liberalization and commercialization of the agriculture sector. The consensual definition of development objectives and strategies has proved difficult. This is reflected in the weak coherence and continuity between national strategies, sector policies and policies related to other supportive sectors. Although there has been clear progress over the past ten years towards coherence in the agriculture sector, it is still identified as a challenge in Kenya's current national development strategy.

## 5.5 Malawi

Malawi is a landlocked and densely populated country in Southern Africa that is among the poorest and least developed countries in the world. It ranked 170 in the UN Human Development Index, and its GDP per capita (PPP) in 2010 amounted to US\$ 893. Poverty levels have been declining steadily over the last decade, and the percentage of the population living below the US\$ 1.25 a day poverty line was 62 percent in 2011, while 23 percent of the population is considered undernourished.

Representing 30 percent of GDP, agriculture is a major economic sector in Malawi (Table 9). Historically an export-oriented agricultural system based on estates, the sector is now dominated by small-scale producers across all regions of the country. Agriculture plays a major role as a source of employment (85 percent of total employment) and in the generation of foreign exchange (90 percent of total export earnings). Maize is the national staple food and is produced in all regions. Tobacco is the main agricultural export product. Both crops are produced primarily by smallholder farmers.

The Malawi Growth and Development Strategy I and II are the country's overarching development strategy documents for the periods 2006 – 2011 and 2012 – 2016 respectively. Both list agriculture and food security as key focus areas. For the agriculture sector, the Agricultural Sector Wide Approach (ASWAP) sets out the country's investment priorities to increase agricultural productivity, diversify production and raise rural incomes.

Malawi has generally liberalized its agriculture sector. However, given their importance, maize and tobacco are the agricultural sub-sectors that face the highest levels of policy intervention by the government. Malawi's main producer support programme is the Farm Input Subsidy Programme (FISP). In place since 2005/2006, the FISP provides input subsidies to the vast majority of producers of maize – as well as other crops including legumes and cotton. The programme reached 65 percent of farmers in 2008/2009. The global food crisis triggered additional policy interventions in the maize market, such as the installation of maize export bans; exports were only allowed under special licenses. Until the decision of the Government of Malawi in May 2012 to float the Malawi Kwacha against the US dollar, exchange rate policy affected the competitiveness of the country's exports due to significant overvaluation of the local currency.

TABLE 9. DEVELOPMENT AND PERFORMANCE INDICATORS IN MALAWI

INDICATORS	LAST VALUE
Agriculture, value added (% of GDP)	30% (2010)
Agriculture, value added (annual % growth)	2% (2010)
Share of agricultural/total exports, in value	75% (2009)
Share of agricultural/total imports, in value	20.4% (2010)
Share of small farms <5 ha	75% (2006)
Poverty headcount ratio at \$1.25 a day (PPP) (% of population)	62% (2010)
Human Development Index-ranking	170 (2013)
Prevalence of undernourishment (% of population)	23% (2012)

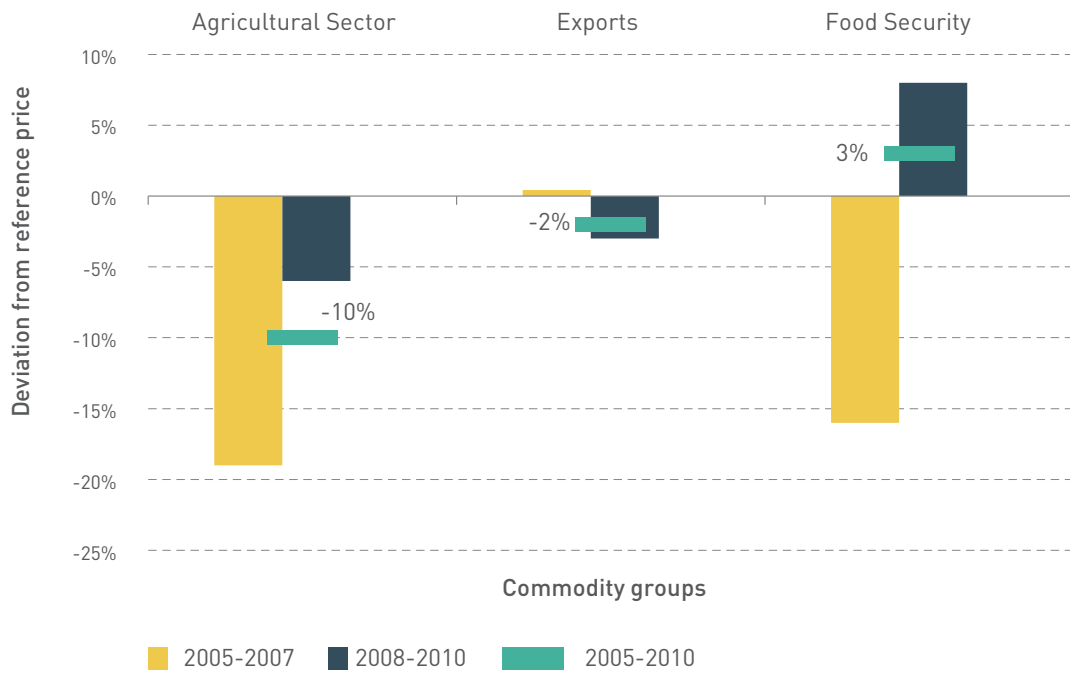
## Measuring the impact of policy and market performance through prices

From 2005 to 2007, Malawi's agriculture sector did not receive adequate support: on average, farmers received prices significantly below international reference prices (Figure 47). While farmers who produced export products (e.g. tobacco, cotton, tea, groundnuts) received prices that were tightly connected to those on the international market, producers of staple foods (maize, cassava) did not receive price support. Between 2008 and 2010, that situation changed. This was particularly true for producers of maize, who benefited from positive price support from 2008 onwards. In addition, maize producers increasingly benefited from lower production costs, through the introduction and expansion of the FISP.

The difference between levels of support for producers of export crops and food security crops is mainly related to market structure. The tobacco, cotton, tea and groundnut value chains are relatively integrated and organized, which explains the high degree of price transmission. Maize and cassava value chains, on the other hand, are dominated by a number of traders and middlemen, who often capture a large share of the profits. This reduces price transparency and can depress the price received by farmers.

From 2005 to 2010, the average Market Development Gap (MDG) for Malawi was minus 25 percent. This means that farmers in Malawi would have been able capture higher prices if the overvaluation of the local currency and value chain inefficiencies had been removed. In May 2012, the Government of Malawi changed its exchange rate policy. Continued policy monitoring is therefore recommended to assess the effects of these changes on agricultural producers in the country's most important value chains.

**FIGURE 47. AVERAGE PERCENTAGE DEVIATION OF PRODUCER PRICES FROM EQUIVALENT WORLD PRICES BY MAJOR COMMODITY GROUPS IN MALAWI, 2005-2010**



*Note. The bars measure the average percent deviation of the price producers received from the equivalent world price, which represents the price producers could have received if domestic policy and market distortions were removed. The equivalent world price is the reference price and corresponds to zero percent in the graph. Exports analysed include cotton, groundnuts, tea and tobacco, and commodities important for food security include maize and cassava.*

Source: MAFAP



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## 5.6 Mali

The good macroeconomic performance of this landlocked country over the past decade has been mainly due to gold and cotton exports. However, Mali is among the poorest countries in the world. The Malian agriculture sector, dominated by small family farms (68 percent) grew by 7.7 percent in 2010, and contributed 37 percent to the country's GDP in 2008 (Table 10). The agricultural trade balance of Mali has been in deficit since 1976, and this period was marked by continual growth in the value of agricultural imports (except in 2003-2004 and 2006-2007). Grains, including rice and wheat, account for 80 to 95 percent of the value of total agricultural imports. Cotton accounts for 92 to 97 percent of total agricultural exports, but its value has declined steadily since 2003.

Other sub-sectors have interesting possibilities, including livestock, which could be better structured to become a huge economic driver in the country. In the vegetable and fruit sub-sectors, crops such as onions/shallots and mango also offer opportunities for diversification. Thanks to the Niger and Senegal rivers, plentiful water availability offers the prospect of more intensive agricultural production. Good progress is already being registered for rice and maize, with yield increases seen in recent years. These are encouraging advances towards agricultural income diversification, since production has been heavily based on the cotton sector until now. Most agricultural value chains, however, encounter significant obstacles to investment, production, processing and marketing. The state has an important role to play, especially in relation to access to inputs that are seldom used (3.04 kg fertilizer/ha cultivated) and often difficult to obtain. The government has been investing heavily in this direction through input subsidies, which have been increasing steadily since 2008, reaching 36 billion FCFA in 2012. Transport infrastructure, with only 24.5 percent of roads paved in the country, still appears insufficient to enable the mainly small-scale producers to improve their incomes.

The main policy framework for the period studied was the Strategic Framework for the Fight against Poverty (CLSP, 2002-06). It was replaced in 2007 by the Strategic Framework for Growth and Poverty Reduction (CSCR, 2007-11), which included agricultural strategies regarding diversification, commercialization, inputs, land and water access. The Master Plan for Rural Development (SDDR, 1992-10) aimed at increasing production, improving access to inputs, land and finance services, developing rural infrastructures, increasing exports, achieving food security, protecting the environment and fostering research and extension services. Furthermore, in 2006, the Agricultural Orientation Law (LOA) was adopted. In addition to the previous objectives, it focuses on modernizing and developing agribusiness, increasing productivity and improving risk management.

TABLE 10. DEVELOPMENT AND PERFORMANCE INDICATORS IN MALI

INDICATORS	LAST VALUE
Agriculture, value added (% of GDP)	37% % (2009)
Agriculture, value added (annual % growth)	7.7% (2010)
Share of agricultural/total exports, in value	17.7% (2010)
Share of agricultural/total imports, in value	14.3% (2010)
Share of small farms <5 ha	68% (2007)
Poverty headcount ratio at \$1.25 a day (PPP) (% of population)	43.6% (2010)
Human Development Index-ranking	0,309 (2012)
Prevalence of undernourishment (% of population)	12% (2008)

## Measuring the impact of policy and market performance through prices

From 2005 to 2010, producers of all the commodities analysed in Mali, with the exception of cotton, received prices that were lower than those that they would have received in a more enabling policy environment (Figure 48). Except in 2005, producers received prices that were 11 to 31 percent below those that they could have obtained. This has limited both farmers' incomes and their capacity to invest. Producers in all commodity value chains, including cotton, would receive higher prices if structural inefficiencies were addressed by long-term policies. These inefficiencies include weak marketing infrastructure, traders' excessive margins due to producers' lack of information and organization, and high illicit taxes along trade routes. Developing better storage systems would allow producers to counter the effects of low seasonal prices and both stabilize and increase prices for most commodities.

Two commodities have received the lion's share of government policy support: cotton and rice. Cotton producers have benefited from strong policy support, and domestic prices have been consistently higher than international reference prices. Support has been provided through a combination of fixed price policies and input subsidies. One-quarter of the government's agriculture-specific budget is spent on rice. Spending has centred on irrigation projects and input subsidies, which appear to have boosted production. However, rice producers have not received adequate price incentives. This is because policies such as import taxes and low retail prices have focused on protecting consumers, especially during the recent food crisis. Furthermore, producers are often not aware of the higher price their products may fetch in international markets due to a lack of market information and other inefficiencies. All these factors may have a dampening effect on rice production, especially in the medium-term.

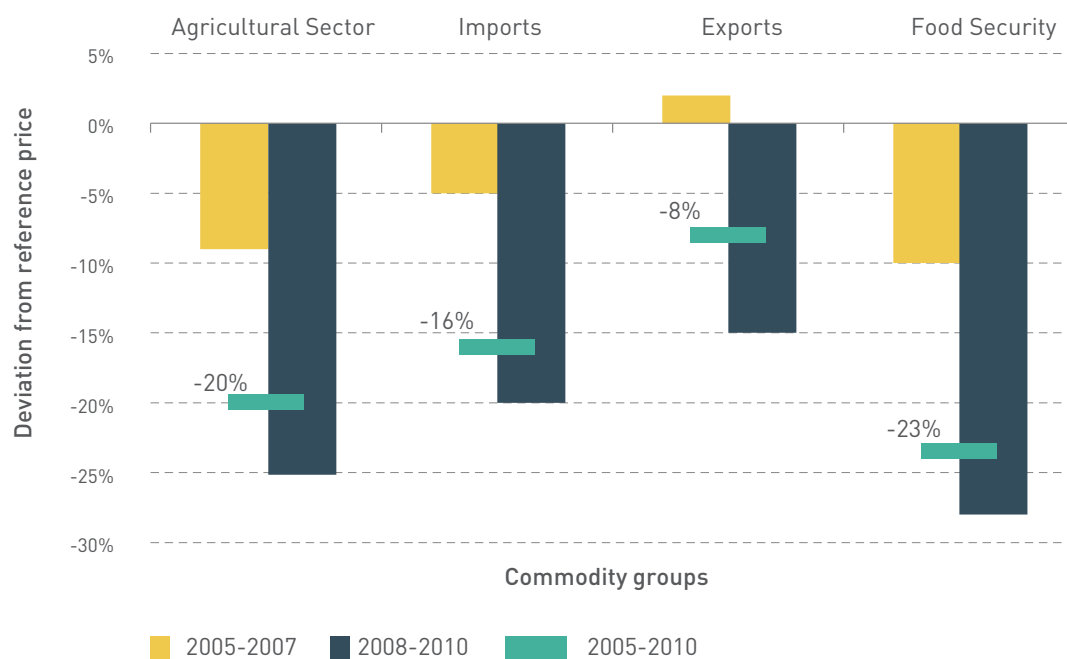
Producers of staple crops, such as sorghum and millet, have received prices that were much lower than those that they could potentially have received using regional prices as a benchmark. Indeed, the Government of Mali has restricted exports of these products, which are grown by small-scale farmers for their own use, in

order to ensure food security. Furthermore, the government has not provided budgetary support to boost production and create marketing opportunities. The government has promoted farmers' own consumption of staple crops, and has consequently devoted a smaller share of its budget to food aid.

Although cattle are Mali's third largest agricultural export, the cattle sector has received less than one-tenth of the agriculture-specific budget. With increasing demand for animal products in the sub-region, cattle production and trade in Mali has a very high potential for growth, though this remains untapped. This is partly due to lack of policy support.

Public expenditure, agricultural policies and overall policy objectives have not been sufficiently aligned. On the one hand, the government has officially sought to increase exports. On the other hand, tariffs on imported rice have been lifted, exports of staples have been restricted and cattle producers have received no support for exporting their products. Despite the stated objective of boosting rice production through input subsidies, the government has not supported producers with price incentives.

**FIGURE 48. AVERAGE PERCENTAGE DEVIATION OF PRODUCER PRICES FROM EQUIVALENT WORLD PRICES BY MAJOR COMMODITY GROUPS IN MALI, 2005-2010**



*Note.* The bars measure the average percent deviation of the price producers received from the equivalent world price, which represents the price producers could have received if domestic policy and market distortions were removed. The equivalent world price is the reference price and corresponds to zero percent in the graph. Imports analysed include milk and rice; exports include cattle, cotton and groundnuts; and commodities important for food security include groundnuts, maize, millet, rice and sorghum.

Source: MAFAP

## Reviewing agricultural public expenditure

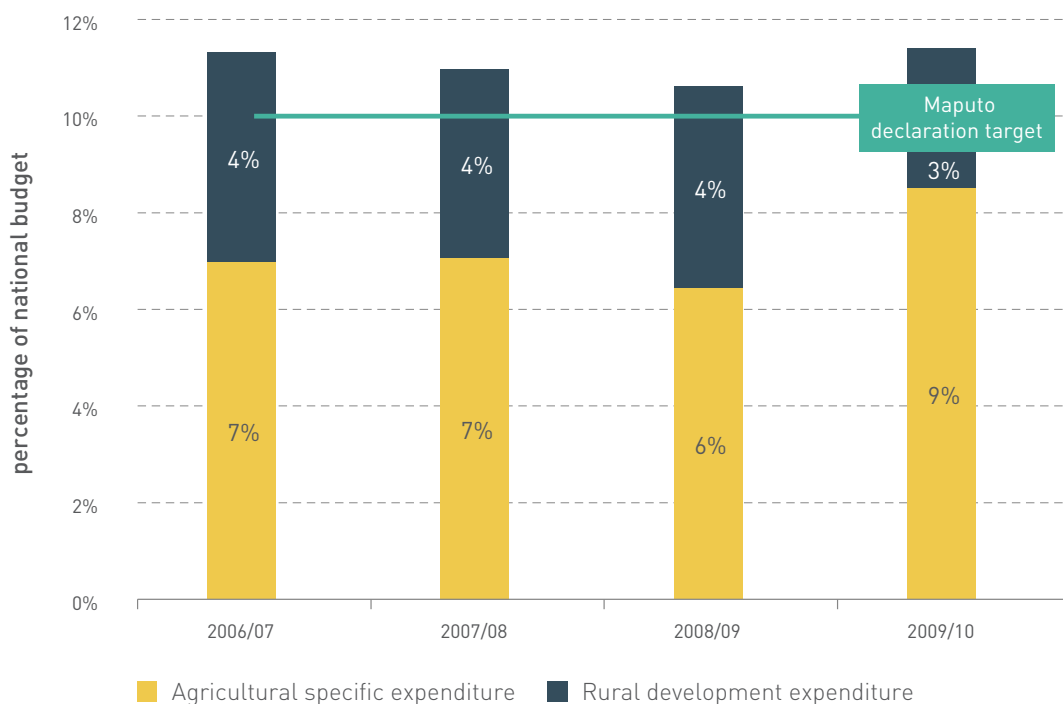
The bulk of public expenditure to support food and agriculture in Mali has been in the form of direct support to the agriculture sector, rather than to rural development. Public expenditure on agriculture is above the Maputo target of ten percent (Figure 49).

The total approved budget for the agriculture sector grew by 62 percent from 2005 to 2010. MAFAP analysis, which does not include all administrative costs, suggests that Mali barely complied with the Maputo target of designating ten percent of the total budget to the agriculture sector.

Agriculture-specific support accounted for 67 percent of the total rural and agricultural development budget, while 33 percent was spent on rural development. Agriculture-specific support was higher due to significant support for commodities, especially rice and cotton.

Agriculture-specific expenditure consisted mainly of input subsidies, especially farm irrigation systems. Variable inputs, mostly seeds and fertilizers, represented only seven percent of input subsidies on average. Public expenditure for off-farm agricultural infrastructure was also high. In the period analysed by MAFAP (2006-2010), the focus was largely on improving feeder roads and off-farm irrigation. At just three percent, support for research has been notably low.

FIGURE 49. PUBLIC EXPENDITURE ON AGRICULTURE AND RURAL DEVELOPMENT IN MALI, 2006-2010



Source: MAFAP

## Assessment of policy coherence

Over the period studied, the Government of Mali has devoted a large share of public expenditure to supporting producers, as opposed to consumers. On the other hand, trade policies have been used as a tool to counterbalance the effects of the food crisis on urban consumers, especially for rice, but also for milk and palm oil. The government lifted import taxes on these commodities after the food crisis, only to restore them intermittently. Another policy tool used to support consumers has been price ceilings and low-priced sales, once again mainly for rice. The policy options adopted by the government to support rice producers have had limited success in lowering prices for consumers, as a monopsony of importers have a strong influence on the price of rice in Mali. One explanation for prices received by producers being lower than those they could have obtained lies in the government's intention of providing support to rice consumers. This reflects inconsistency in the Malian government's policy choices, as the policy frameworks clearly identify producers as a priority.

As a response to the food crisis, the Malian government also restricted exports for staple crops, especially millet and sorghum. This policy choice cut producers off from the regional market, and farmers did not benefit from the price rise. Other policy tools to ensure food security through income increases as opposed to self-consumption, such as expenditure to support storage, training or marketing, were seldom used for millet and sorghum. The low support given to commodities other than cotton and rice also contradicts the objective of diversification, which is stated as a priority in various policy frameworks.

Indeed, in terms of support to production, the Malian authorities have heavily centred their efforts on two commodities: rice and cotton. Together, these crops have accounted for 67 percent of public expenditure in support of single commodities. Cotton has been supported through the *Compagnie Malienne pour le Développement du Textile (CMDT)*, a parastatal company, which provides important subsidies to producers (credit, equipment, seeds). Rice has also benefited from the Rice Initiative, a multi-billion FCFA input subsidy programme. Meanwhile, cattle, which is a key production sector for the country and recognized as such in the policy frameworks, has received only 9 percent of expenditure in support of individual commodities. Although the support to rice and cotton has been consistent with the government's intention of boosting production in both sectors, it has been given at the expense of other objectives, such as development of the livestock sector, or production diversification.

The main cause of disincentive to production identified in Mali has been the weakness of market and transport infrastructure, together with poor organization of value chains. The government has partly addressed the problem through significant investment in irrigation infrastructure and rural roads (the latter with important donor funding), though feeder roads, as well as rural markets, have received a small share of public expenditure. Addressing these gaps will be crucial, so as to ensure that the benefits of input subsidies on production costs are not lost, and that production increases – identified as a key objective by the Malian authorities – are sustained.

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## 5.7 Mozambique

After two decades of civil war, which lasted from 1977 to 1992, Mozambique has undergone social and economic recovery. National GDP experienced a boom in 2011, with a growth rate of 7.1 percent. Poverty has been steadily declining; the number of people living with less than US\$1.25 per day (PPP) fell from 75 percent in 2003 to 60 percent in 2008 (WBI, 2011). Moreover, non-monetary indicators of social development, such as education and health, have registered significant progress. However, many challenges remain. Almost 40 percent of Mozambicans remained undernourished in 2010.

Agriculture employs 80 percent of the economically active population in Mozambique (EIU, 2008) and small-scale farms account for 95 percent of national agricultural production (Table 11). This segment of the population has remained vulnerable due to slow productivity growth, the negative impact of climate shocks and seasonal income shortfalls. Despite an increase in cultivated area, outputs have not grown proportionally due to extremely low productivity, which is well below both African and regional averages. The sector has also been affected by restricted access to inputs and complementary services, variation in weather conditions, poor infrastructure and market fragmentation. Mozambique relies heavily on imports, especially for fuel and food (rice and wheat).

The second phase of the Action Plan for Absolute Poverty Reduction (PARPA II 2006-2009) placed greater emphasis on food security and a more intersectoral approach. The specific objective was to reduce the incidence of poverty to less than 50 percent by the end of the decade. The National Food Security and Nutrition Strategy II (ESAN 2009-2019) has a multi-sector approach, focusing on food availability, economic access and optimum utilization. The central goal is to coordinate government policies and to assess food security in Mozambique.

With regards to consumer-oriented measures, since 2007/8, the government has highlighted the need to increase domestic food production through the Action Plan for Food Production (PAPA), launched in 2008. Its objective was to reduce the grain deficit and import reliance in order to mitigate rising food prices. Food aid, creation of food stocks, release of subsidized produce and school feeding programmes have also been implemented under the plan.

Maize and rice producers were targeted under the two-year Agricultural Input Subsidy Programme, introduced in 2009, whereby farmers received either a rice input pack or maize input pack. Cotton producers have also received free inputs (seed and fertilizer) during each cropping season, as well as technical support during the two critical periods in the cotton growing cycle. Prices have been liberalized, with a few exceptions - the government fixes the minimum prices for rice, sugar, cotton and petroleum products.



TABLE 11. DEVELOPMENT AND PERFORMANCE INDICATORS IN MOZAMBIQUE

INDICATORS	LAST VALUES
Agriculture, value added (% of GDP)	30% (2010)
Agriculture, value added (annual % growth)	7% (2010)
Share of agricultural/total exports, in value	4.36% (2010)
Share of agricultural/total imports, in value	1.01% (2010)
Share of small farms <5 ha	95% (2010)
Poverty headcount ratio at \$1.25 a day (PPP) (% of population)	60% (2008)
Human Development Index-ranking	185 (2012)
Prevalence of undernourishment (% of population)	40% (2010)

## Measuring the impact of policy and market performance through prices

Overall, Mozambique's indicators show that although producers and wholesalers were supported in some years, they faced market price disincentives in most of the years analysed (Figure 50). This suggests that government policies in support of the agriculture sector have not been fully translated into incentives for producers and wholesalers – which may be the result of an inefficient market structure and lack of competition, asymmetrical distribution of market power between traders and farmers, excessive transport costs and weak infrastructure.

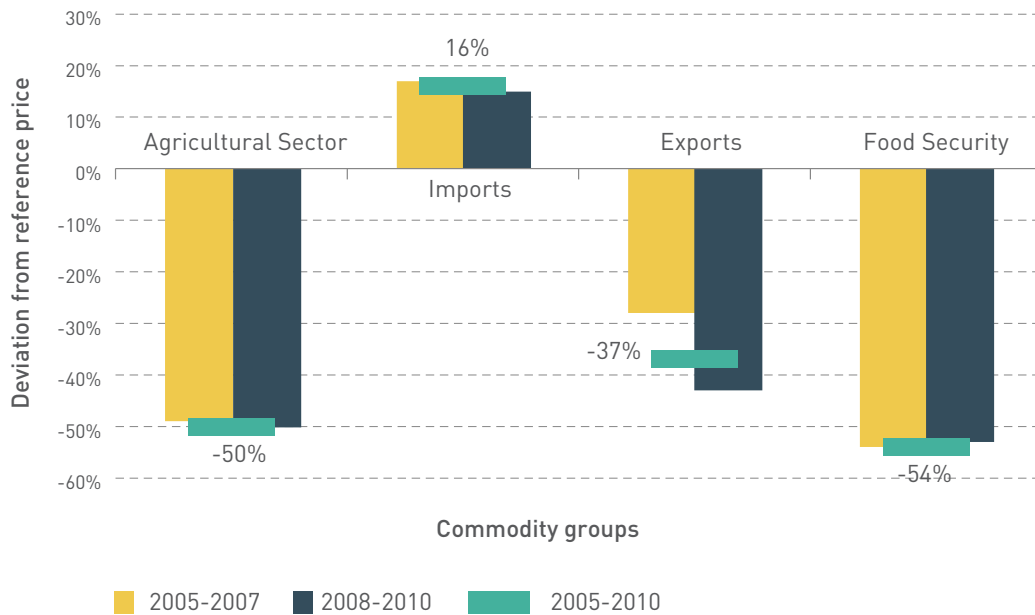
For export crops (cotton, sugar cane and tobacco), the indicators show that farmers were not supported in all years under analysis. This suggests that most of the benefits from export promotion policies were captured at the wholesale and export levels of the value chain, with limited support at producer level, except during the years of high world prices (e.g. 2008). Price disincentives worsened in the second triennium for the three export commodities analysed. A problem specific to the cotton sector has been lack of competition among processors due to the concession system. This, coupled with the fixing of producer prices, has penalized cotton producers.

For the import commodities analysed (maize and rice), producers have faced market price incentives due to the import tariff in place for these products, which ensured protection for producers. In addition, the government has supported the production of both commodities through input subsidies. However, the incentives were lower during the period 2008-10.

Producers of cassava, the non-traded commodity analysed in this study and by far the main staple crop in the country, faced high market price disincentives in all years under analysis. This was mainly due to lack of measures to boost the sector, as well as high market segmentation. Due to the importance of cassava production in Mozambique, the level of disincentives faced by cassava producers outweighed the level of

protection received by maize and rice producers. This resulted in overall market price disincentives for the commodities that are more important for the country's food security.

**FIGURE 50. AVERAGE PERCENTAGE DEVIATION OF PRODUCER PRICES FROM EQUIVALENT WORLD PRICES BY MAJOR COMMODITY GROUPS IN MOZAMBIQUE, 2005-2010**



*Note.* The bars measure the average percent deviation of the price producers received from the equivalent world price, which represents the price producers could have received if domestic policy and market distortions were removed. The equivalent world price is the reference price and corresponds to zero percent in the graph. Imports analysed include maize and rice; exports include cotton, sugar cane and tobacco; and commodities important for food security include cassava, maize and rice.

Source: MAFAP

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## 5.8 Nigeria

Despite large reserves of human resources (it is the most populous country in Africa) and natural resources (Africa's biggest oil exporter, with the largest gas reserves), Nigeria's economic growth has been hampered by political instability, corruption and inadequate infrastructure (WB, 2013). Moreover, the economic growth has not translated into job creation and poverty reduction due to overdependence on the capital-intensive oil sector.

The agriculture sector accounted for 32 percent of GDP (WB, 2013) in 2007 and employed 60 percent of the working population (Inter-réseaux, 2011) (Table 12). Agricultural production lacks modernization and suffers from infrastructural deficit, as well as poor linkages to the manufacturing sector. Small farms produce 80 percent of total food (Oxfam, 2013). There are two types of agricultural production in Nigeria: food crops and export crops. The most important food crops are yams and cassava in the Northern regions, and millet and sorghum in the Southern regions. Cocoa is the leading agricultural export.

Nigeria aims to achieve food security and food self-sufficiency while becoming a major exporter of agricultural products (National Food Security Programme-NFSP, 2008). Although food production has steadily increased, attaining food security remains a major challenge, Nigeria being a net importer of food, with an annual import bill of US\$ 3 billion. The NFSP designates priority crops (cassava, rice, millet, wheat) and between 1999 and 2007, a series of Presidential Initiatives on cocoa, cassava, rice, livestock, fisheries and vegetables was launched in an effort to improve food production. The National Investment Plan (NIP, 2011-2014) also focuses on selected commodities. Recently, the Presidential Transformation Agenda (2011) was designed, promoting private sector investment and the development of private sector marketing organizations.

In response to the food price crisis, the Guaranteed Minimum Price (GMP, 2008) policy was launched to stabilize food prices. The National Food Reserve Agency (NFRA) was created in 2007. Import bans on maize, sorghum and wheat flour were abolished and the tariff on rice was removed. Producers have been mainly supported by general input subsidies and free agricultural extension. The existing agricultural-oriented financial instrument for risk management was improved through the Nigerian Agricultural Insurance Corporation (NAIC) and access to banking services targeting production and post-production activities was facilitated.

TABLE 12. DEVELOPMENT AND PERFORMANCE INDICATORS IN NIGERIA

INDICATORS	LATEST VALUE
Agriculture, value added (% of GDP)	32% (2007)
Agriculture, value added (annual % growth)	7% (2007)
Share of agricultural/total exports, in value	13% (2010)
Share of agricultural/total imports, in value	1.4% (2010)
Share of small farms <5 ha	-
Poverty headcount ratio at \$1.25 a day (PPP) (% of population)	68% (2010)
Human Development Index-ranking	153 (2012)
Prevalence of undernourishment (% of population)	7% (2008)

## Measuring the impact of policy and market performance through prices

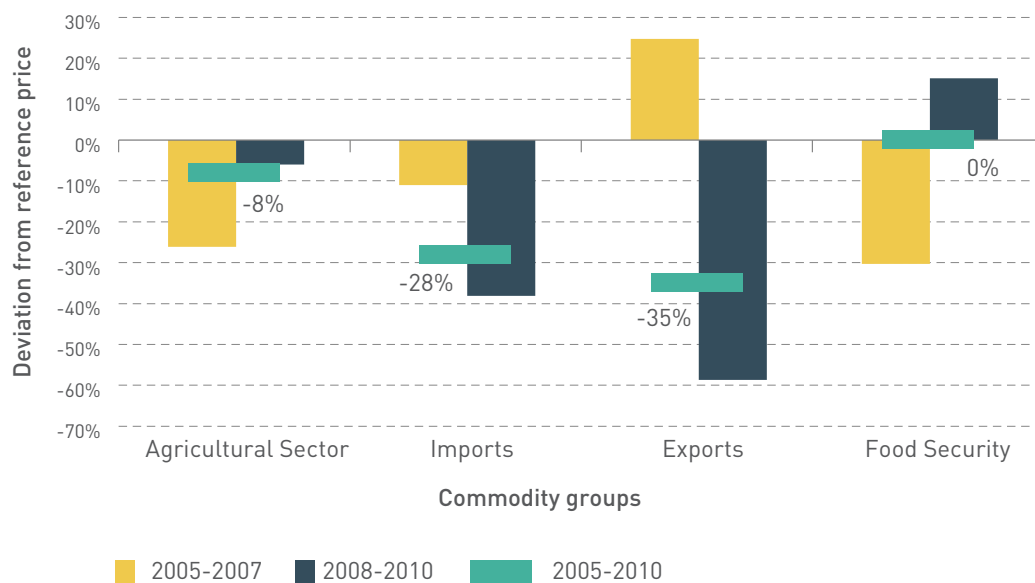
On the whole, between 2005 and 2008, producers of import commodities and products important for food security received lower prices than those prevailing on international markets (Figure 51). From 2008 onwards, the situation deteriorated for producers of imported and exported commodities. This was because domestic prices, especially for cocoa beans, remained stable or decreased, whereas international prices increased sharply. The poor price transmission and high concentration of the export market penalized cocoa producers. Another factor was the large number of intermediaries involved in the value chain, leading to inefficiencies.

Import results have been influenced by the palm oil sector, which was partially cushioned by the protective policy measures in force (import tariff). Without this protection, producers would have certainly received lower prices, since the value chain is characterized by lack of organization (numerous intermediaries) and market inefficiencies (lack of storage and transport facilities and lack of development of the information channel).

Reducing both import and export tariffs during this period did not bridge the gap between international and domestic prices. For example, the reduction of the import tariff for rice resulted in more pronounced disincentives for producers.

The trend for commodities important for food security changed significantly after 2008, when cassava producers received incentives. The level of incentives and disincentives for products important for food security has been strongly influenced by cassava. Such incentives are coherent with the producer-oriented policies targeting this commodity. By contrast, disincentives for maize, rice and sorghum increased. MAFAP findings show that producers would have received higher prices if they had improved rural market infrastructure, storage facilities and market information. Reducing the number of intermediaries and transportation costs would also help producers.

**FIGURE 51. AVERAGE PERCENTAGE DEVIATION OF PRODUCER PRICES FROM EQUIVALENT WORLD PRICES BY MAJOR COMMODITY GROUPS IN NIGERIA, 2005-2010**



*Note.* The bars measure the average percent deviation of the price producers received from the equivalent world price, which represents the price producers could have received if domestic policy and market distortions were removed. The equivalent world price is the reference price and corresponds to zero percent in the graph. Imports analysed include rice, sugar and palm oil; exports include cocoa beans; and commodities important for food security include cassava, maize, sorghum and rice.

Source: MAFAP

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## 5.9 Uganda

Uganda has substantial natural resources, including fertile soils, regular rainfall, small deposits of copper, gold and other minerals, and recently discovered oil. Agriculture is the most important sector of the economy, employing more than 66 percent of the workforce (UBoS, 2012) (Table 13). In recent years, the quality of life of Ugandans has been improving through government provision of basic services, leading to a noticeable growth in the human development index (HDI). The third Progress Report on Millennium Development Goals (MDGs) revealed that the first MDG (to halve the proportion of people living in poverty) has been achieved (MFPED, 2010). However, undernourishment appeared to be persistent in the country, with 34 percent of the population reportedly undernourished.

Uganda is unique in having liberalized its economy to a large extent. The government focuses on providing public goods and creating an enabling environment for economic growth. The private sector exclusively handles all domestic and international trade for all agricultural products. The government does not control prices, and therefore the market determines all prices. The structure of market incentives to producers and traders is the product of this liberalized policy environment.

The Poverty Eradication Action Plan (PEAP, 1997-07), followed by the National Development Plan (NDP, 2010-15), include the development of rural area and agriculture as main objectives. In particular, the Rural Development Strategy (SDR, 2005-10) was adopted to increase productivity and the value added of production and ensure market stability. In addition, the Agricultural Sector Development Strategy and Investment Plan (ASDSIP, 2005-08 and 2010-15) was implemented. It has similar objectives but also promotes private sector investments and strengthening of the institutional framework. The National Agricultural Advisory Services (NAADS I, 2000-07 and II, 2010-15) is the operational framework of this strategy.

Policies targeting consumers are limited and mostly include measures to increase consumers' incomes, create employment and implement cash transfer programmes. By contrast, policies that directly and indirectly support producers are much more developed. These measures include inputs distribution, as well as mechanization and financial services programmes. The agribusiness sector is especially targeted. Priority commodities are maize, rice, beans, fish and cattle. The government also provides indirect support to producers by developing hydraulic and road infrastructure and implementing extension and technical assistance programmes. Regarding trade policies, a 75 percent import tariff is applied to countries outside EAC and cereal exports were restricted only in 2009. However, non-tariff barriers are in place, such as quality standards and phytosanitary measures.



TABLE 13. DEVELOPMENT AND PERFORMANCE INDICATORS IN UGANDA

INDICATORS	LAST VALUE
Agriculture, value added (% of GDP)	24.24
Agriculture, value added (annual % growth)	0.33
Share of agricultural/total exports, in value	51.90%
Share of agricultural/total imports, in value	12.50%
Share of small farms <5 ha	-
Poverty headcount ratio at \$1.25 a day (PPP) (% of population)	24.50%
Human Development Index (value)	0.45
Prevalence of undernourishment (% of population)	34.6

### Measuring the impact of policy and market performance through prices

The agriculture sector as a whole received highly variable incentives over most of the years, with high disincentives in 2007 and 2010 (Figure 52). However, there appear to have been substantial inefficiencies in the existing marketing systems, leading to excessive profit margins for traders, processors and exporters, and high marketing costs for producers. These distortions represented net disincentives in the agriculture sector in most years (with the exception of 2009–2010). Specifically, these distortions were the direct causes of a significant market development gap within the agriculture sector in Uganda, estimated at 16 percent of the reference price at the farm gate.

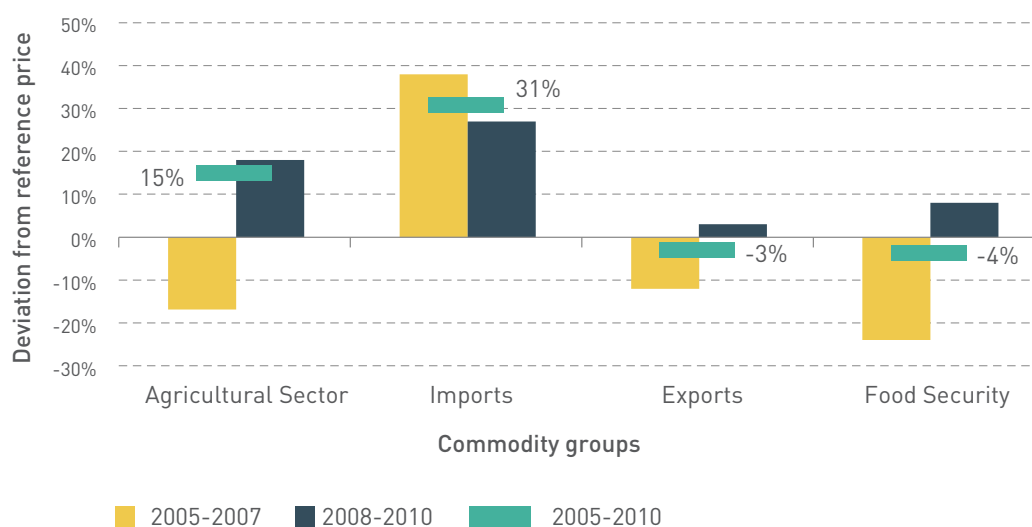
Within the agriculture sector, the pattern and nature of producers' incentives varied between commodity groups, depending on the level of development of the value chain and existing policies. Producers of imports, specifically rice and wheat, were generally well protected due to the import tariffs imposed on these two commodities. Unlike wheat and rice producers, who received minimal processing, sugar producers were taxed heavily, with noticeable levels of disincentives, as indicated by the negative adjusted Nominal Rates of Protection, despite the relatively high level of tariffs for sugar.

Although export promotion and liberalization policies were expected to benefit producers of major exported commodities (cotton, tea and coffee), producers' prices were often lower than expected due to exporters' high profit margins, resulting in disincentives. However, the situation has improved in recent years, leading to slight incentives for producers. Within the export group of commodities, producers' incentives were driven by the high level of incentives in the fish market, which was stimulated by the high and progressively rising prices of fish on the domestic market. This was the result of increased competition between processing factories for high quality fish at landing sites, as well as competition between domestic consumers and processing factories, and low supply levels in recent years.

There was substantial variation in incentive levels within the commodities considered important for food

security over time, with no clear trend. For instance, producers received significant incentives in 2006, 2008 and 2009, but the patterns of incentives within the commodities important for food security also varied significantly between commodities, depending on their tradability.

FIGURE 52. AVERAGE PERCENTAGE DEVIATION OF PRODUCER PRICES FROM EQUIVALENT WORLD PRICES BY MAJOR COMMODITY GROUPS IN UGANDA, 2005-2010



Note. The bars measure the average percent deviation of the price producers received from the equivalent world price, which represents the price producers could have received if domestic policy and market distortions were removed. The equivalent world price is the reference price and corresponds to zero percent in the graph. Imports analysed include rice, sugar and wheat; exports include coffee, fish, cotton and tea; and commodities important for food security include beef, cassava, fish and maize.

Source: MAFAP

## Reviewing agricultural and rural public expenditure

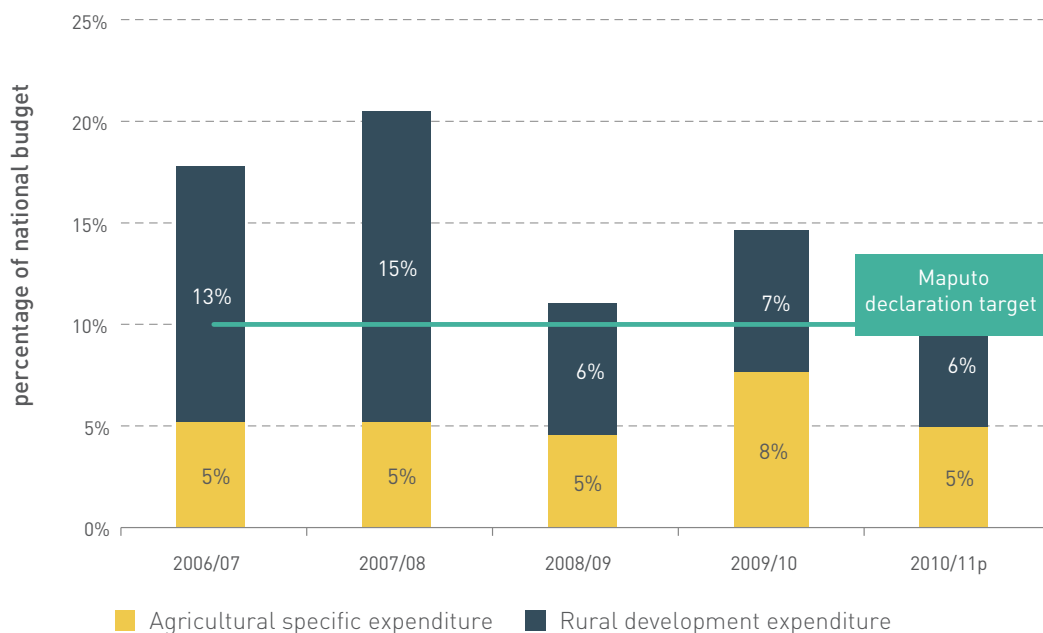
Public expenditure in support of the agricultural sector and rural development is an important policy instrument in Uganda's agricultural sector development. Total expenditure on agriculture and rural development has exceeded the Maputo declaration target since 2006 (Figure 53). Indeed, spending grew by 34 percent in nominal terms between 2006 and 2010, reaching 1045.3 billion Uganda Shillings in 2010. Growth has been mainly due to spending on rural development, while direct support to the agriculture sector has stagnated at between 5.2 and 7.0 percent of the national budget. Input subsidies, extension services and agricultural research have made up the largest share of agriculture-specific expenditure. Rural infrastructure (roads, water, sanitation and energy) and rural health have made up the largest share of rural development expenditure.

Expenditure in support of the agriculture sector has accounted for, on average, almost 39 percent of expenditure in support of the agriculture sector and rural development. In terms of spending levels, expenditure on the agriculture sector almost doubled over the period analysed, while expenditure on rural development

increased only slightly. This indicates that policies specific to the agriculture sector were given more attention than those specific to rural development. In terms of distribution of individual commodities, the government has focused more on promoting fish production, followed by vegetable oil and banana production.

However, there is a high discrepancy in growth of the national budget allocation (96 percent) vis-à-vis the growth in budget allocation to agricultural and rural development (17 percent), when growth in budget allocation or actual expenditure on agricultural and rural development is compared with growth of the national budget allocation. The low growth in budget allocation to agricultural and rural development, compared with other sectors, may partly explain the weak performance of the agriculture sector, relative to the services and industrial sectors.

FIGURE 53. PUBLIC EXPENDITURE ON AGRICULTURE AND RURAL DEVELOPMENT IN UGANDA, 2006-2010



Source: MAFAP

## Assessment of policy coherence

The ultimate objective of government policy is economic development and social transformation. To achieve this objective, the Government of Uganda formulated and implemented successive strategies (Ssewanyana, Matovu and Twimukye, 2010). These strategies included the Economic Recovery Programme, introduced in 1987, the Poverty Eradication Action Plan (PEAP, 1997), the Plan for the Modernization of Agriculture (PMA) and the latest National Development Plan.

The allocation and actual spending in support of agriculture and rural development was generally consistent with government priorities and strategies. Government funding was allocated to support strategic sectors, such as fish, banana, vegetable oil and livestock, as part of the national strategy to diversify Uganda's export base. There was also significant public expenditure for projects supporting the development of rural infrastructure, especially roads, including rural feeder roads, off-farm water schemes/irrigation and energy for production. Furthermore, there was significant government effort to develop market infrastructure.

Through these strategies, the Government of Uganda has been successful in providing an enabling environment for the private sector to produce and trade competitively through the successive policy measures taken. Despite this success, growth rates of the agriculture sector have lagged behind other sectors of the economy in recent years and fallen significantly below the population growth rate of 3.2 percent, implying that per capita agricultural GDP has been declining. The country has also fallen way short of the 6 percent growth target for the agriculture sector set by African Governments under CAADP.

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## 5.10 United Republic of Tanzania

During the period 2001–2012, growth of the economy averaged 6.6 percent. The service and industry sectors showed stronger growth rates than the agriculture sector, whose annual growth averaged 4.2 percent. The URT continued to consolidate gains from rigorous trade reforms that began in the 1990s and resulted in a more liberalized trade regime. The economy of the URT is predominantly rural-based, with relatively low levels of manufacturing and value addition of the commodities produced.

The share of the agriculture sector in total GDP decreased from 50 percent in 2000 to 28 per cent in 2010, mainly due to a drop in clove export earnings and an increasing focus on tourism (Table 14). However, the sector's role in providing employment is forecast to remain close to 50 percent until 2025. The agriculture sector is mostly characterized by subsistence farming and smallholder cash cropping. The main subsistence crops are maize, sorghum, millet, cassava, rice, plantains, wheat and pulses. The country exports some foodstuffs to neighbouring countries, in particular Kenya. Of the major cash crops, coffee, cotton, tobacco and cashew nuts are grown mainly by smallholders, whereas sisal and tea are grown mainly on large estates.

Despite progress made in adopting a more coordinated sectoral approach, with initiatives such as Kilimo Kwanza and the Agricultural Sector Development Strategy (ASDS), agricultural policies in Tanzania have continued to be implemented through a myriad of programmes and projects. Government decisions on trade, especially those relating to tariffs, are numerous and sometimes contradict other policy objectives. While markets have been liberalized to a great extent, indicative prices persist for several commodities. Indeed, the government intervenes directly through the National Food Reserve Authority. Furthermore, commodity boards play a significant role for specific commodities (mainly export products, but also sugar). The agriculture sector is still subject to export taxes and high levels of local taxation; ad hoc interventions such as tariff waivers and export bans are frequent. Moreover, the lack of transport and storage infrastructure impedes market integration and processing plants are largely obsolete.

TABLE 14. DEVELOPMENT AND PERFORMANCE INDICATORS IN TANZANIA

INDICATORS	LAST VALUE
Agriculture, value added (% of GDP)	28% (2011)
Agriculture, value added (annual % growth)	7% (2010)
Share of agricultural/total exports, in value	9% (2009)
Share of agricultural/total imports, in value	34% (2009)
Share of small farms <5 ha	90% (2010)
Poverty headcount ratio at \$1.25 a day (PPP) (% of population)	68% (2007)
Human Development Index-ranking	152 (2012)
Prevalence of undernourishment (% of population)	38.8% (2010-2012)

## Measuring the impact of policy and market performance through prices

Between 2005 and 2010, producers received higher prices compared with international prices, though this positive gap has been decreasing (Figure 54). Current policies and weak market performance have made food more expensive for consumers, while reducing prices for producers of exported commodities.

This trend for declining incentives masks a contradictory situation: producers of imported commodities received price incentives, while producers of exported commodities received disincentives. Producers of exported commodities received lower prices than they might have obtained due to policies, traders' high market power and inefficient processing facilities. Moreover, some commodities were protected at wholesale (processed) level, but penalized at farm gate (raw) level. This has had a negative impact on food security by making food less affordable and available.

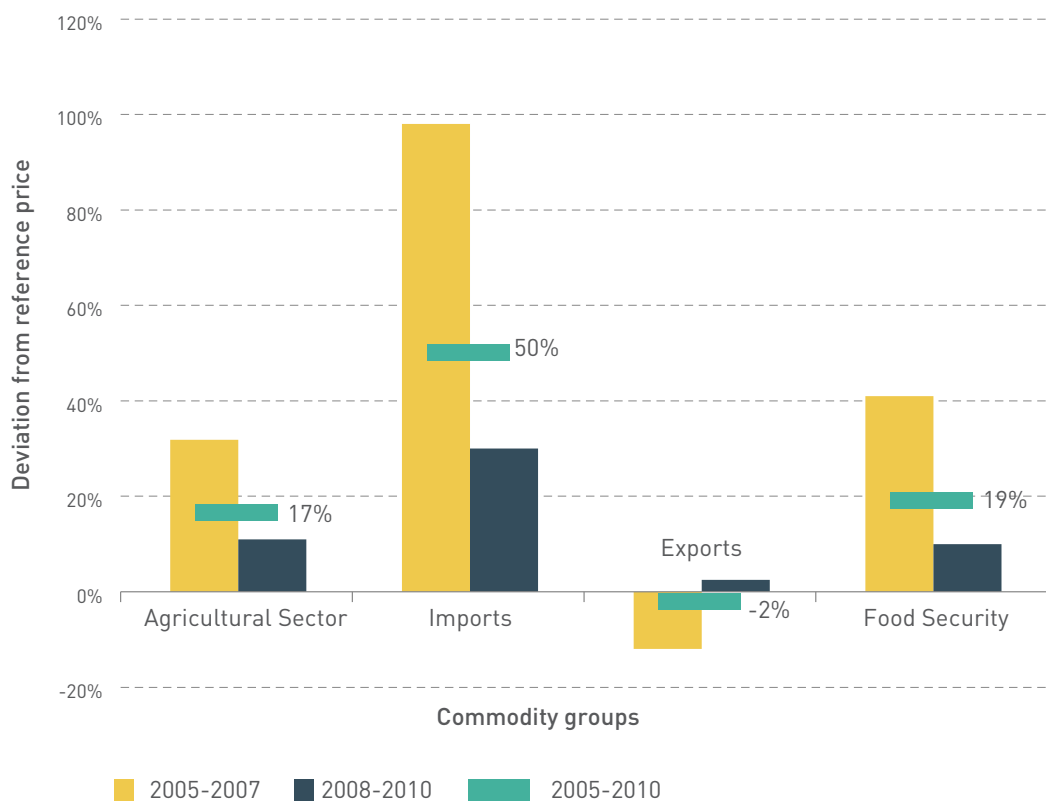
Most of the incentives for imported commodities were due to trade policies, while disincentives for export commodities related to taxes and inefficient processing industries. In addition, some of the protection for imported goods offered by trade policies was eroded by excessive marketing costs along the value chain.

Farmers producing commodities that the URT also imports to cover domestic consumption received incentives. The common external tariff, which the URT applies to imports from outside the EAC, has helped to keep prices higher for producers. The only exception has been sugar, whose producers have faced strong disincentives. For all imported commodities, protection at the farm gate was eroded by high transport and marketing costs due to a lack of market integration and inefficiencies in the value chain.

Farmers producing export commodities would have obtained higher prices in a policy-free environment and with better market performance. Factors that kept producers' prices low included taxes on cotton and cashew nuts, poorly functioning value chains for coffee and cashew nuts, and inefficiencies in the cotton processing sector.

Excessive marketing costs reduced the benefits of protection and kept producers' prices for all commodities lower than the levels that could have been obtained. However, in general, policies and the lack of functioning markets created more disincentives than did excessive marketing costs.

**FIGURE 54. AVERAGE PERCENTAGE DEVIATION OF PRODUCER PRICES FROM EQUIVALENT WORLD PRICES BY MAJOR COMMODITY GROUPS IN TANZANIA, 2005-2010**



*Note.* The bars measure the average percent deviation of the price producers received from the equivalent world price, which represents the price producers could have received if domestic policy and market distortions were removed. The equivalent world price is the reference price and corresponds to zero percent in the graph. Imports analysed include milk, rice, sugar and wheat; exports include beans, cashew nuts, coffee and cotton; and commodities important for food security include beans, maize, rice, sugar and wheat.

Source: MAFAP

## Reviewing agricultural public expenditure

Public expenditure to support agriculture and rural development has been declining (Figure 55). While the total approved budget for the agriculture and rural development sector grew by 53 percent in nominal terms from 2007 to 2011, in relative terms it declined from almost 13 percent of total government spending in 2007 to about 9 percent in 2011. Actual spending grew at a slower pace and, in relative terms, decreased significantly during this period. Although public spending was above the Maputo Declaration target from 2007 to 2009, it has since remained below the target.

The composition of public spending has shifted from rural development expenditure to expenditure in support of agriculture. In the first half of the period studied, rural development accounted for 72 percent of total expenditure. During the second half of the period, it declined to 45 percent.

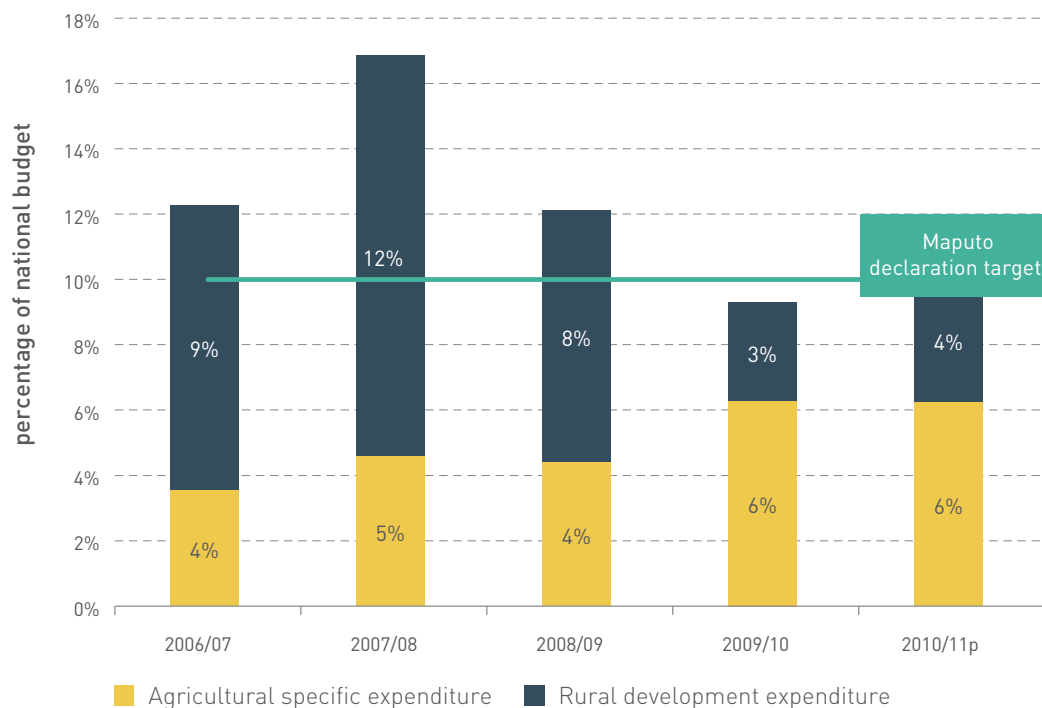


Expenditure in support of the agriculture sector has shifted from general sector support to payments to farmers and other agents. General sector support (training, extension and research and development) accounted for over 60 percent of expenditure in the first half of the period analysed. However, from 2009 onwards, there was an increased focus on payments to producers via input subsidies. General sector support declined to less than 50 percent. This increased use of direct transfers to producers has resulted in fewer extension services and less support for storage facilities, marketing and infrastructure.

Expenditure on rural development accounted for about 55 percent of overall support to the rural development and agriculture sector. Most of this was spent on rural infrastructure, including rural roads, water infrastructure, sanitation and energy. Considerably less was spent on rural health and education.

At least 50 percent of public expenditure on the rural development and agriculture sector in the URT came from donor contributions. However, there was a diminishing trend in the role of foreign aid during the period analysed. External aid made up 44 percent of expenditure in support of agriculture and 64 percent of the rural development budget. Donor and government priorities in allocating public funds have been closely aligned.

FIGURE 55. PUBLIC EXPENDITURE ON AGRICULTURE AND RURAL DEVELOPMENT IN TANZANIA, 2006-2010



Source: MAFAP

## Assessment of policy coherence

The URT has had a relatively volatile trade policy environment, which has resulted in mixed signals for farmers. To assure a stable policy environment, the URT should adopt less volatile trade policies. This could include deciding whether import tariffs are needed or not and moving definitively away from export bans. Public expenditure should focus more on infrastructure aimed at improving markets (roads, storage, market information systems, etc.). Initiatives such as the Southern Agricultural Growth Corridor of Tanzania (SAGCOT) appear to be a step in the right direction. The draft of the Agricultural Sector Development Strategy (ASDP II) is a unique opportunity for aligning public investment with policies aimed at increasing agricultural output and productivity, while reducing hunger and poverty.

The impact of policies and poor market performance kept the URT from adequately meeting its food security objectives. Except for rice and wheat, farmers received lower prices than those they would have obtained without domestic policies and with better performing value chains. Producers of all other commodities received disincentives, thus limiting farmers' potential for increasing investments and production volume.

While lower producers' prices might imply that food is more affordable for consumers, most of the price disincentives have been related to classic export crops, which are not part of the normal Tanzanian diet. At wholesale level (i.e. the level closest to purchase by consumers), most commodities important for food security, except for maize, had positive price gaps. Thus, the cost of the average Tanzanian diet is higher than it would be in the absence of policies and with better performing markets.

Contradictory trade policy actions (such as tariffs versus waivers) have generated uncertainty for producers and penalized export-oriented commodities. Poor market performance and inefficient processing plants have reduced the farm gate prices of food crops, without reducing consumer prices. Public expenditure should focus on marketing, storage and processing. Disincentives can be minimized or eliminated in all of these crucial areas. Finally, there appears to be significant room for improving policy coherence in the URT.

The government of the URT has delineated policy measures aimed at reducing investment and access costs. Measures aimed at reducing the level of disincentives for farmers include the declared commitment to abandon export bans, the move towards eliminating district taxes for agricultural products and the SAGCOT approach.

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# Conclusion

FAO's MAFAP initiative and its country partners have made an unprecedented effort to establish a system to review food and agricultural policies and monitor their effects in ten African countries. This report and related products for each country analysed provide evidence to policy-makers and other national and international stakeholders on three mutually reinforcing pillars: price incentives, public expenditure (including aid) and policy coherence. More importantly for FAO, these products are the result of a unique effort to institutionalize policy measurement, monitoring and analysis capacity in countries and to embed them in on-going regional and national policy processes.

A number of key messages emerged from which policy recommendations have been derived:

- Overall, policy and market performance in the ten studied countries caused producers to face price disincentives. The main driver of price disincentives for agricultural producers is the lack of consistent policies to address the high costs of marketing and transport, particularly those incurred from farm gate to wholesale markets or processing factories.
- Price disincentives have declined over the period of analysis. This trend was mainly driven by sharp increases in prices for several commodities in the international market during the 2007/08 food price crisis as well as food shortages, which affected some of the countries analysed. From 2009-2010, domestic prices showed a progressive alignment with their international equivalents. However, further analysis of price incentives covering years after 2010 will tell more about the long-term sustainability of this trend. It will also reveal whether this reduction in disincentives was due to systematic improvements in policies and market performance or to short-term fluctuations in global and domestic prices.
- When examining price incentives results for specific commodity groups, further insights emerged. For import competing commodities, once the food price crisis was over, the general pattern of price disincentives to producers was restored. For export commodities, taxes continued to generate price disincentives for producers throughout the period analysed. Marketing and transport infrastructure gaps and value chain malfunctioning are the main causes of price disincentives for producers of commodities important for food security. The highly segmented markets for thinly-traded commodities and the lack of policies targeting market inefficiencies were the main determinants of the price disincentives recorded at the producer level.

- By measuring the Market Development Gaps (MDG) over time, MAFAP results highlight the increasing role that market inefficiencies have in generating price disincentives compared to trade, price or other market policies in all countries analysed. Such inefficiencies were mainly due to overvalued exchange rates, government taxes and fees, bribes, high transport and processing costs and the concentration of profits among intermediaries (i.e. non-competitive behaviour) as well as a large and growing number of intermediaries in domestic markets.
- All countries, except Kenya, have allocated more than ten percent of their budgetary resources to agriculture and rural development. However, public expenditure for agriculture and rural development has declined, in absolute and relative terms, from 2006 to 2010 for all countries analysed, with the exception of Kenya. The main cause for the decline of public expenditure on agriculture and rural development was a fall in donor contributions in 2008. This may be attributed to a high share of emergency agriculture and rural development expenditures not being recorded in the budgets in 2008 and 2009.
- The composition of public expenditures has shifted over the 2006-2010 period from rural development to the agriculture sector. The share of public expenditure in support of rural development declined in 2008. This was mainly due to the steep reduction in international aid, which was more targeted towards rural projects and programmes. As donor funds decreased, national authorities increased expenditure on agriculture to boost production during the food price crisis in 2007/08, and the private sector started to play an increasing role in funding rural infrastructure, partly replacing national expenditure. This is an additional element, which contributed to the shift in public expenditure towards the agriculture sector.
- Overall, policy coherence within countries remains questionable. For example, MAFAP analysis shows that despite a large share of national budgets allocated to transport and market infrastructure development, price disincentives attributable to market inefficiencies, such as underdeveloped infrastructure and poorly organized value chains, are increasing. Moreover, in response to the 2007/08 global food price crisis, governments implemented several ad hoc market and trade measures, as well as input subsidy programmes, which were often not accounted for in national policy frameworks. In many cases, such measures had cancelling effects on price incentives for producers and consumers, and therefore did not always reflect the most efficient use of resources. In addition, research and extension are commonly prioritized in policy and programmatic documents, but public funds for this purpose were not consistently allocated.
- Most countries implemented protective market and trade policies such as minimum prices and import tariffs to support producers. These policies often lead to higher domestic prices, thereby taxing consumers. However, this situation reversed during the 2007/08 global food price crisis, when domestic prices increased sharply. In response to these exceptional circumstances, countries relied on short-term market and trade policies, such as price ceilings, export bans and the removal or reduction of import tariffs on food security crops, rather than public expenditure to support consumers. While many of these measures were effective in keeping food affordable for consumers, they often conflicted with long-term development goals for the sector by reducing price incentives for producers of key agricultural commodities.

- Policies have also not always been effective. Import duties, for example, often resulted in higher prices for traders and wholesalers, but did not consistently translate into higher prices for producers. This was largely due to the excessive market power of downstream agents in the value chain, who capture the rent of such protective policies. Furthermore, overvaluation of the exchange rate in some countries prevented producers of export crops from receiving prices reflecting those in the international market.
- MAFAP results show that despite the volatile conditions faced by consumers, public expenditure targeting consumers was limited compared to expenditure targeting producers throughout the entire period of analysis, even though food security and affordability are policy objectives for all countries. Of the limited funds allocated directly to consumer programs, most was spent on maintaining and increasing public food stocks, which existed in six out of the ten MAFAP countries. This suggests that the food price crisis renewed interest in developing national food reserves, which was evidenced by the growing number of commodities included in countries' food stock programs.

The next MAFAP synthesis report is planned for end of the next biennium (2014-2015) and will provide further insights on the policy changes triggered by the 2007/08 global food price crisis and the ensuing worldwide financial and economic crisis throughout the period 2009-2012. It will also shed light on the effects of policy and investment decisions adopted by participating countries in response to their commitments under the CAADP framework.

Getting policies right may not be the solution to all problems or challenges developing countries face. However, policy-makers recognize that poorly designed and ineffective policies are an obstacle to all other efforts to foster growth in the agricultural sector. This is why policies are considered an important, if not the main, element of the so-called enabling environment. Therefore, accumulating additional and specific evidence on the effects of policies through a sustainable and systematic policy monitoring system is useful and represents an absolute necessity, requiring country buy-in, commitment, and ownership.

While this task is already enormous, there is a need to ensure that the evidence generated does not remain on the shelves, but is actually used to implement policy reforms that achieve greater impact not only in terms of sector growth, efficiency and inclusiveness, but also in terms of food security and poverty reduction. However, policy measurement and monitoring efforts require commitment from national authorities, which have the ability and legitimacy to change or reform policies when and where suitable. This may be a difficult step forward, as it may involve tackling sensitive issues. Indeed, MAFAP results show that while the policy environment is not optimal in most developing countries, the main challenges faced by governments often relate to the structure and functioning of commodity value chains. For a majority of commodities analysed, disincentives to production, marketing and trade stem from exchange rate overvaluation and/or excessive market access costs caused by factors such as lack of investment in infrastructure, inappropriate regulatory frameworks, government taxes and bribes.

To effectively address and propose credible options to overcome these challenges, there is a need to gain knowledge and in-depth understanding of the decision-making process. It is therefore important to add a layer to the analytical framework proposed to promote multi-stakeholder engagement in the policy reform agenda. To do so, there will be a need to technically identify the main problems, deepen the analysis of policy options to overcome them and establish or, ideally, use an existing country-lead process to select those problems that are likely to attract consensus in order to undertake a reform process. This type of outcome-oriented approach to policy reform requires FAO and its partners to further develop the capacity to better understand the political economy of policy-making and decision-making in a given country. This includes being aware of the power relationships, underlying interests and negotiation agenda among key actors concerned with the issues at stake because they may be affected by the proposed policy change and are potential losers or winners in the process. Such an approach goes beyond sound and robust economic analysis skills required to measure and assess the magnitude of the problems. There is indeed a need to borrow from the wealth of knowledge and experience on political economy analysis. Moreover, it is recognized that most change process and pathways are country-specific. The emergence of windows of opportunity, allowing for the policy change to happen is the result of a combination of country driven factors. In the future, through MAFAP, it is envisioned to explore what is seen as the next frontier to policy assistance effectiveness: developing capacity on policy intelligence and preparedness. Through MAFAP, FAO is committed to supporting countries' efforts to not only acquire and establish in-country capacity to measure, analyze, monitor and evaluate policies, but also to develop the capacity to identify and seize the windows of opportunity, which allow policy change to happen.

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# Annex 1: Glossary

## Incentives/disincentives

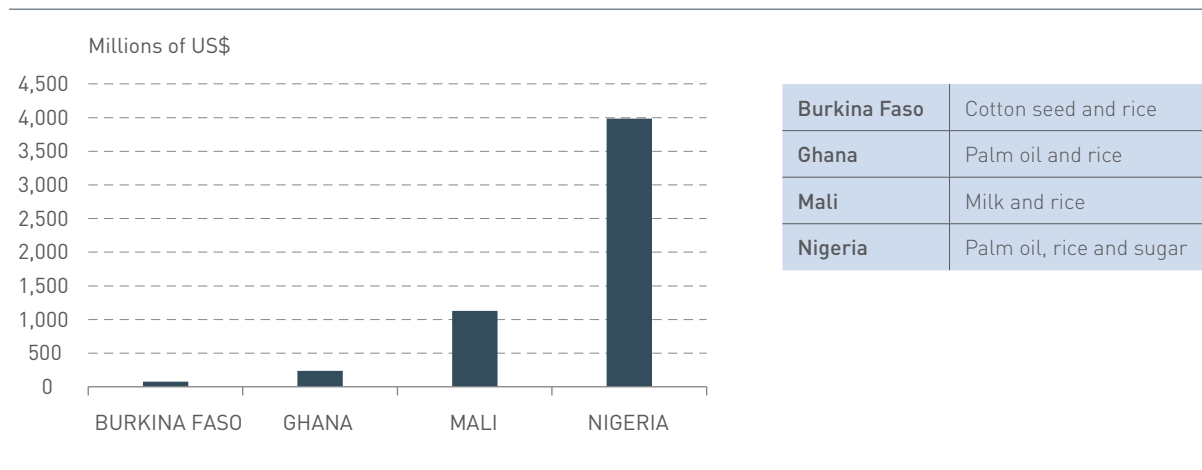
Commodity Trade Status	A commodity is classified as an export (x) if the exported volume exceeds the imported volume. It is classified as an imported commodity (m) if the imported volume exceeds the exported volume.
Commodity MAFAP Status	A commodity is classified as a "Thinly traded" if the trade intensity is less than 2.5% or as a "Food security" commodity if it represents a significant share of the country's daily calorie intake.
Price at Point of Competition	Domestic price at the point of competition refers to the price of a commodity in the market in which the domestically produced commodity competes with the internationally traded commodity.
Price at Farm Gate	Farm gate prices, sometimes referred to as producer prices, are defined as the amount received by the producer from the purchaser for a unit of a good or service produced as output minus any VAT, or similar deductible tax, invoiced to the purchaser; it excludes any transport charges invoiced separately by the producer.
Observed Nominal Rate of Protection at Point of Competition	Ratio of the observed price gap at point of competition in relation to the observed reference price at the same level.
Adjusted Nominal Rate of Protection at Point of Competition	Ratio of the adjusted price gap at point of competition in relation to the adjusted reference price at the same level.
Observed Nominal Rate of Protection at Farm Gate	Ratio of the observed price gap at farm gate in relation to the observed reference price at the same level.
Adjusted Nominal Rate of Protection at Farm Gate	Ratio of the adjusted price gap at farm gate in relation to the adjusted reference price at the same level.
Market Development Gap	The market development gap is the aggregated impact on incentives or disincentives of the effect of market or policy distortions in the international markets; exchange rate policies; and excessive access costs in the domestic value chain between the border and the point of competition and between the point of competition and the farm gate.

## Public expenditure

Donor	External aid, provided either through local governments or specific projects conducted by international organization or NGOs
National	Includes expenditures from the national budget, either central or regional government, regardless of the ministry that implements the policy
Direct agriculture specific expenditure (payments to the agents in the agro-food sector)	Monetary transfers to the agents of agro-food sector individually
Payments to producers	Monetary transfers to individual agricultural producers (farmers)
Indirect agricultural specific expenditure (agricultural sector support)	Public expenditures generating monetary transfers to the agro-food sector agents collectively
Input subsidies	Monetary transfers to agricultural producers that are based on on-farm use of inputs
Variable inputs	Monetary transfers reducing the on-farm cost of a specific variable input or a mix of variable inputs (seeds, fertilizer, energy, credit, other)
Capital	Monetary transfers reducing the on-farm investment cost of farm buildings, equipment, plantations, irrigation, drainage and soil improvements (machinery and equipment, on-farm irrigation, other basic on-farm infrastructure)
Payments to consumers	Monetary transfers to final consumers of agricultural commodities individually in form of food aid, cash transfers and school feeding programmes.
Agricultural infrastructure	Public expenditures financing off-farm collective infrastructure (roads, non-farm irrigation infrastructure, other)
Rural development support	Public expenditures that are not specific to agriculture, but which have a strong influence on agricultural sector development
Total expenditures in support of food and agriculture sector (policy transfers)	Sum of agricultural-specific and agricultural-supportive expenditures
Total public budget	Total public budget as published by the authorities

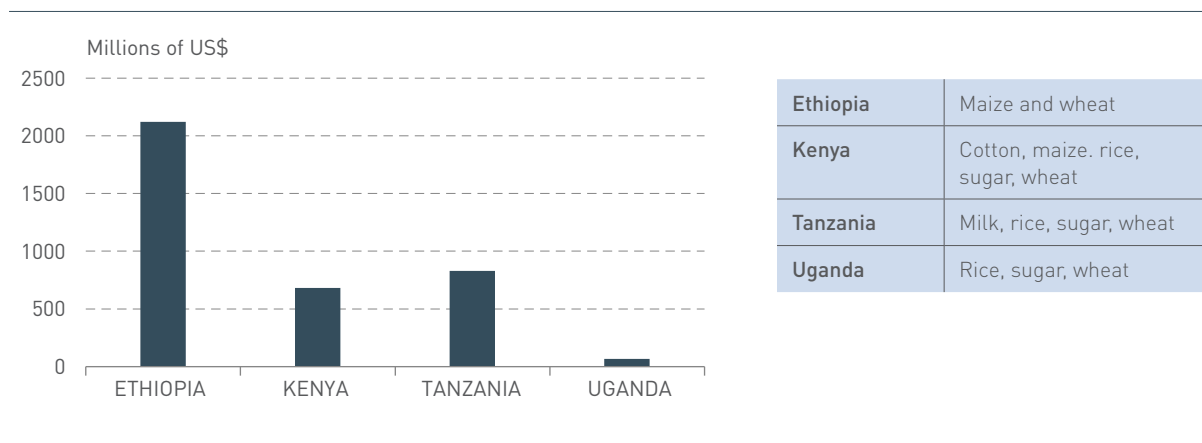
## Annex 2: Value of production per commodity group by region

FIGURE 56. IMPORT COMMODITIES ANALYSED BY MAFAP IN WEST AFRICAN COUNTRIES (AVERAGE VALUE OF PRODUCTION), 2005-2010



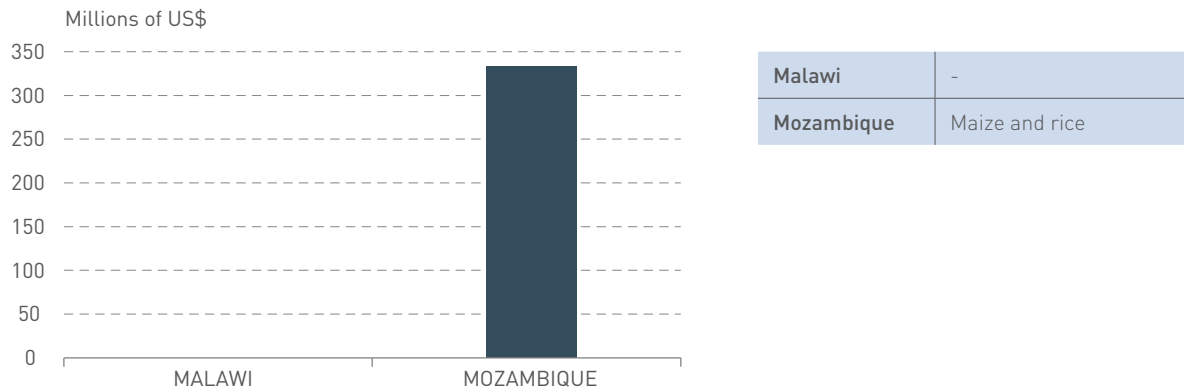
Source: MAFAP

FIGURE 57. IMPORT COMMODITIES ANALYSED BY MAFAP IN EAST AFRICAN COUNTRIES (AVERAGE VALUE OF PRODUCTION), 2005-2010



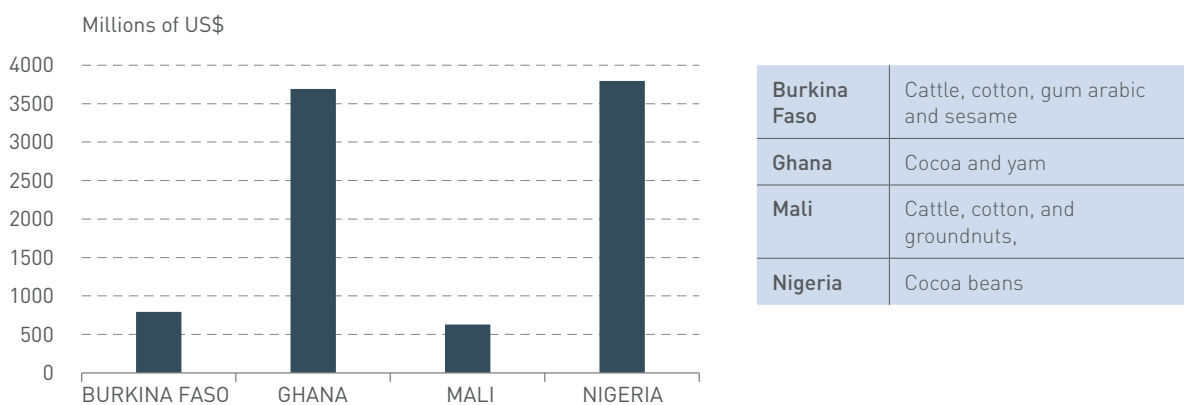
Source: MAFAP

**FIGURE 58. IMPORT COMMODITIES ANALYSED BY MAFAP IN SOUTH AFRICAN COUNTRIES (AVERAGE VALUE OF PRODUCTION), 2005-2010**



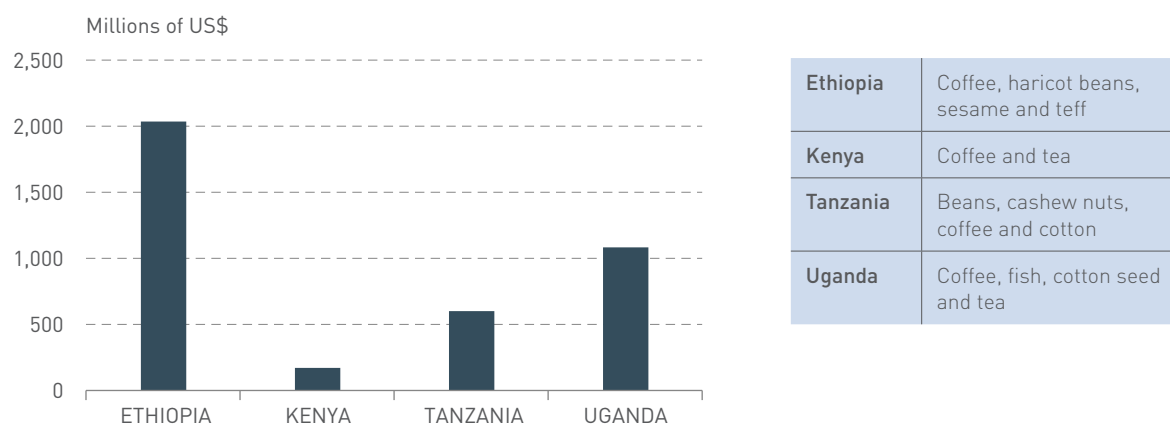
Source: MAFAP

**FIGURE 59. EXPORT COMMODITIES ANALYSED BY MAFAP IN WEST AFRICAN COUNTRIES (AVERAGE VALUE OF PRODUCTION) 2005-2010**



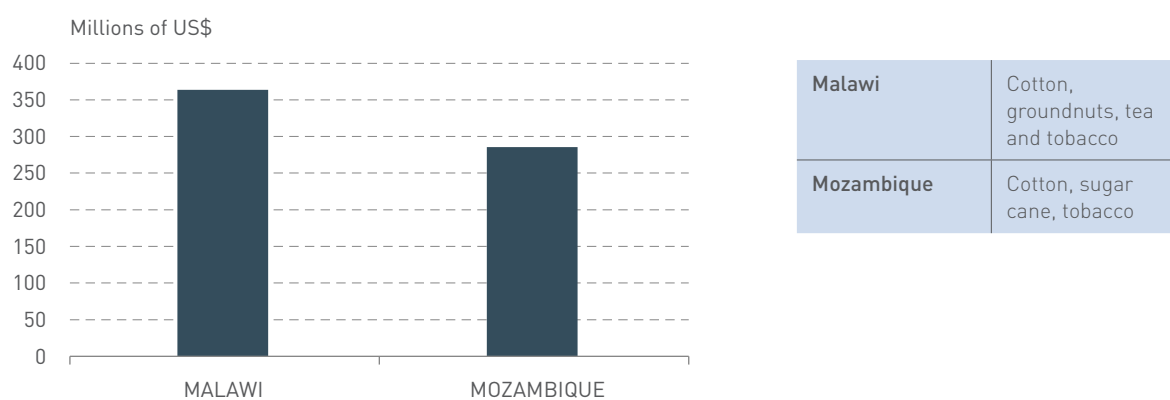
Source: MAFAP

**FIGURE 60. EXPORT COMMODITIES ANALYSED BY MAFAP IN EAST AFRICAN COUNTRIES (AVERAGE VALUE OF PRODUCTION) 2005-2010**



Source: MAFAP

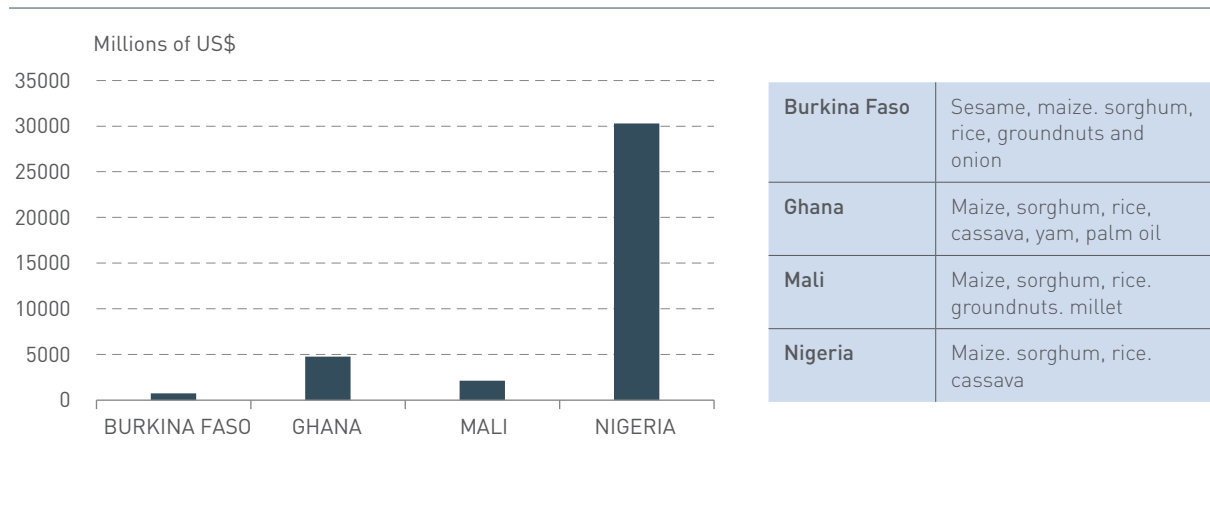
**FIGURE 61. EXPORT COMMODITIES ANALYSED BY MAFAP IN SOUTH AFRICAN COUNTRIES (AVERAGE VALUE OF PRODUCTION) 2005-2010**



Source: MAFAP

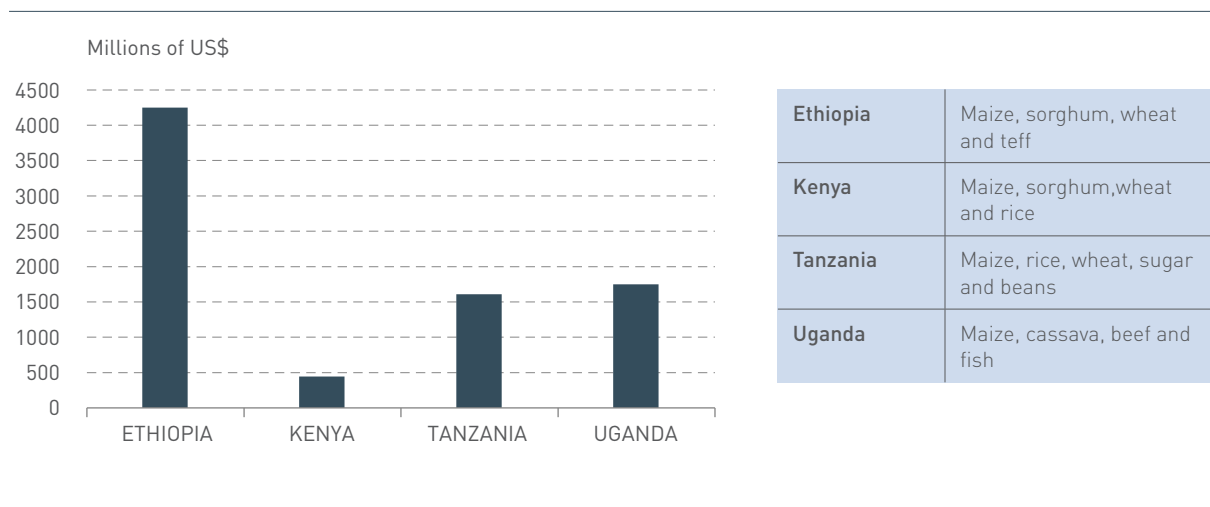


**FIGURE 62. FOOD SECURITY COMMODITIES ANALYSED BY MAFAP IN WEST AFRICAN COUNTRIES (AVERAGE VALUE OF PRODUCTION) 2005-2010**



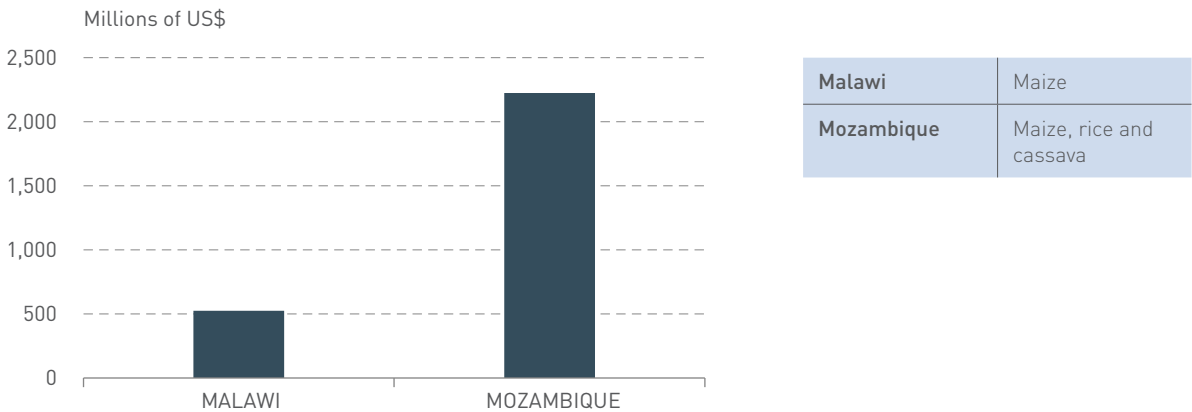
Source: MAFAP

**FIGURE 63. FOOD SECURITY COMMODITIES ANALYSED BY MAFAP IN EAST AFRICAN COUNTRIES (AVERAGE VALUE OF PRODUCTION) 2005-2010**



Source: MAFAP

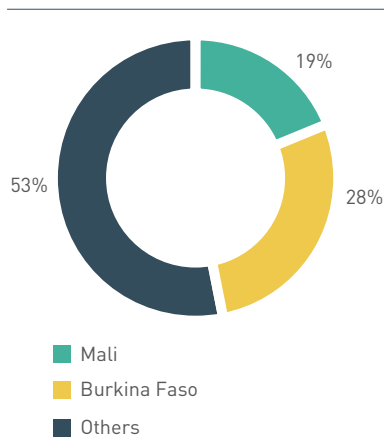
**FIGURE 64. FOOD SECURITY COMMODITIES ANALYSED BY MAFAP IN SOUTH AFRICAN COUNTRIES (AVERAGE VALUE OF PRODUCTION) 2005-2010**



Source: MAFAP

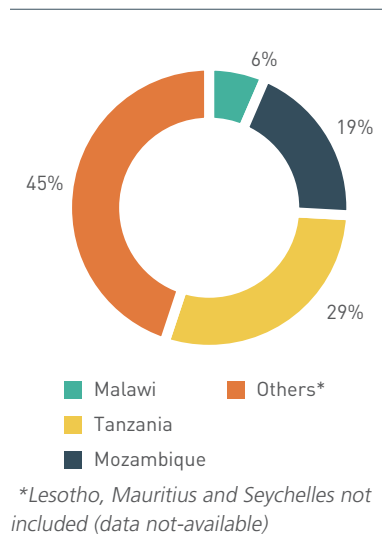
## Annex 3: Value of production per commodity by regional economic communities

FIGURE 65. SHARE OF COTTON SEED PRODUCTION IN ECOWAS<sup>45</sup> COUNTRIES, 2005-2010



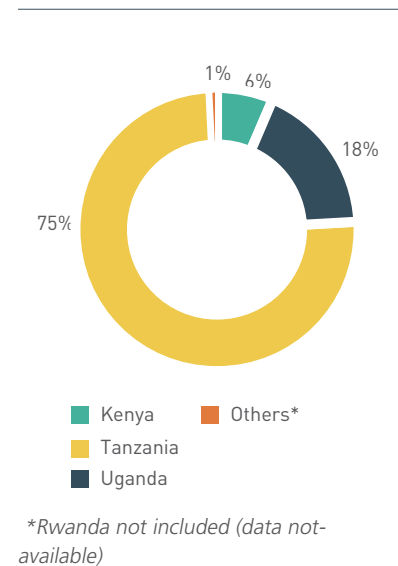
Source: FAOSTAT, 2013

FIGURE 66. SHARE OF COTTON SEED PRODUCTION IN SADC<sup>46</sup> COUNTRIES, 2005-2010



Source: FAOSTAT, 2013

FIGURE 67. SHARE OF COTTON SEED PRODUCTION IN EAC<sup>47</sup> COUNTRIES, 2005-2010



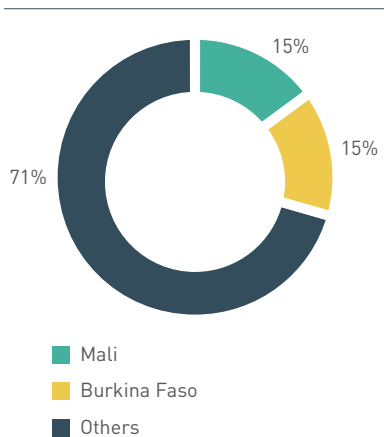
Source: FAOSTAT, 2013

45 Economic Community of West African States (Benin, Burkina Faso, Cape Verde, Gambia, Ghana, Guinea, Guinea-Bissau, Ivory Coast, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone, Togo)

46 Southern African Development Community (Angola, Botswana, Democratic Republic of the Congo, Lesotho, Malawi, Mauritius, Mozambique, Namibia, Swaziland, Tanzania, Zambia, South Africa, Seychelles)

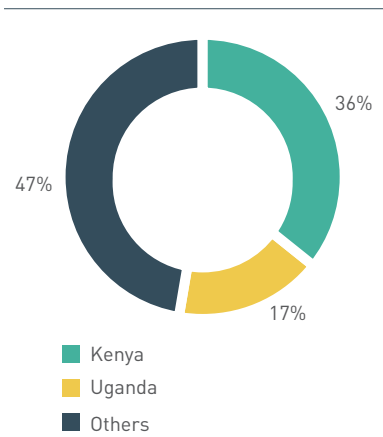
47 East African Community (Republic of Burundi, Kenya, Rwanda, the United Republic of Tanzania, the Republic of Uganda)

**FIGURE 68. SHARE OF LIVE CATTLE STOCKS IN ECOWAS COUNTRIES, 2005-2010**



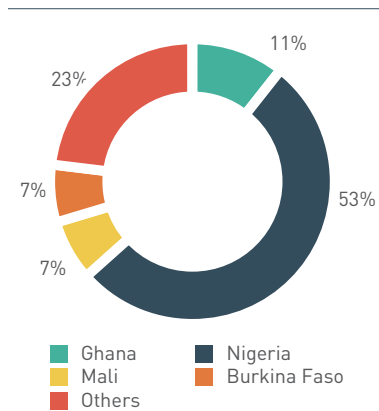
Source: FAOSTAT, 2013

**FIGURE 69. SHARE OF LIVE CATTLE STOCKS IN EAC COUNTRIES, 2005-2010**



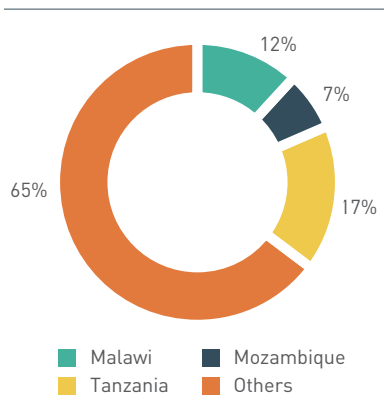
Source: FAOSTAT, 2013

**FIGURE 70. SHARE OF MAIZE PRODUCTION IN ECOWAS COUNTRIES, 2005-2010**



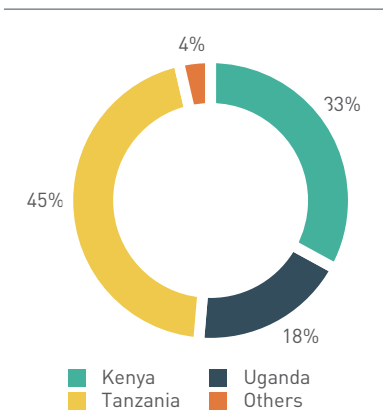
Source: FAOSTAT, 2013

**FIGURE 71. SHARE OF MAIZE PRODUCTION IN SADC COUNTRIES, 2005-2010**



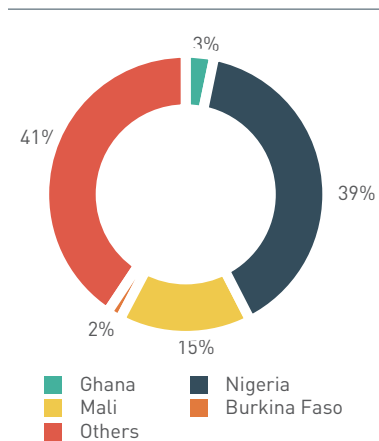
Source: FAOSTAT, 2013

**FIGURE 72. SHARE OF MAIZE PRODUCTION IN EAC COUNTRIES, 2005-2010**



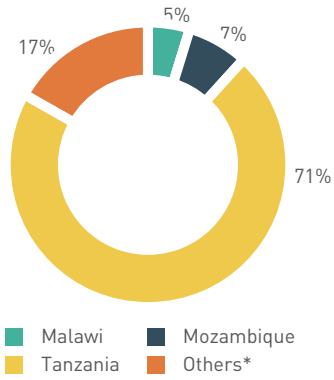
Source: FAOSTAT, 2013

**FIGURE 73. SHARE OF RICE PRODUCTION IN ECOWAS COUNTRIES, 2005-2010**



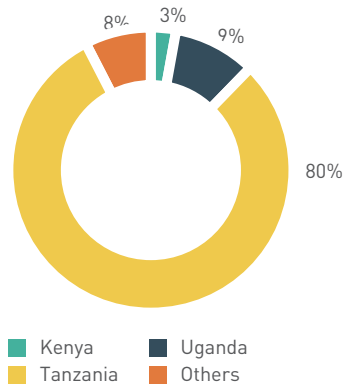
Source: FAOSTAT, 2013

**FIGURE 74. SHARE OF RICE PRODUCTION IN SADC COUNTRIES, 2005-2010**



Source: FAOSTAT, 2013 \*Botswana, Lesotho, Namibia and Seychelles not included (data not-available)

**FIGURE 75. SHARE OF RICE PRODUCTION IN EAC COUNTRIES, 2005-2010**



Source: FAOSTAT, 2013

## Annex 4: World Development Indicators for the five African countries where a MAFAP public expenditure analysis was completed, 2006-2010

GDP current US\$	2006	2007	2008	2009	2010
Mali	5,866,095,675	7,146,284,975	8,738,080,883	8,964,687,644	9,422,377,319
Burkina Faso	5,844,670,800	6,755,806,772	8,350,621,916	8,348,161,530	8,825,364,008
Kenya	22,504,136,042	27,236,739,896	30,465,489,796	30,580,367,979	32,198,151,217
Uganda	9,977,209,199	11,916,019,463	14,440,830,267	15,803,499,657	17,197,398,887
Tanzania	14,331,231,239	16,825,547,176	20,715,086,119	21,368,165,400	22,915,004,297

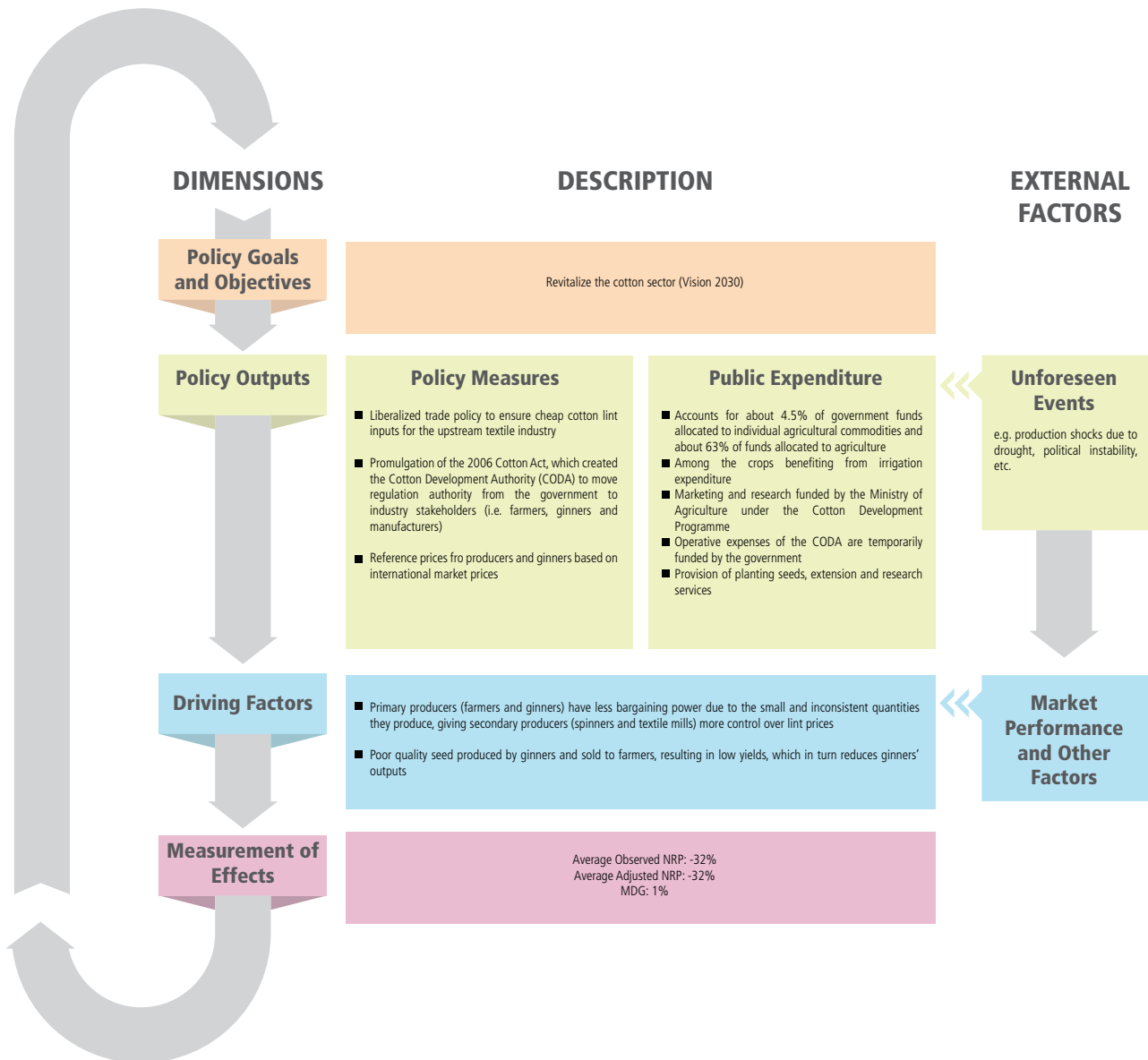
GDP growth (annual %)	2006	2007	2008	2009	2010
Mali	5.3	4.3	5.0	4.5	5.8
Burkina Faso	6.8	3.6	5.8	3.0	7.9
Kenya	6.3	7.0	1.5	2.7	5.8
Uganda	10.8	8.4	8.7	7.2	5.9
Tanzania	6.7	7.1	7.4	6.0	7.0

Population, total	2006	2007	2008	2009	2010
Mali	13,592,796	14,020,786	14,459,990	14,909,813	15,369,809
Burkina Faso	14,622,202	15,061,127	15,515,258	15,984,479	16,468,714
Kenya	36,540,948	37,485,246	38,455,418	39,462,188	40,512,682
Uganda	29,370,251	30,339,895	31,339,392	32,367,909	33,424,683
Tanzania	39,923,609	41,068,185	42,267,667	43,524,738	44,841,226

Surface area (sq. km)	2006	2007	2008	2009	2010
Mali	1,240,190	1,240,190	1,240,190	1,240,190	1,240,190
Burkina Faso	274,220	274,220	274,220	274,220	274,220
Kenya	580,370	580,370	580,370	580,370	580,370
Uganda	241,550	241,550	241,550	241,550	241,550
Tanzania	947,300	947,300	947,300	947,300	947,300

Source: <http://data.worldbank.org/data-catalog/world-development-indicators>

# Annex 5: Analytical framework for the MAFAP policy coherence analysis: the case of cotton in Kenya



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