

# Food Reserves

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# Public Policies for Enhancing Food Security: The Case of Ethiopia

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**About this working paper**

This working paper is one of the products of a study conducted by DAI at the request of the European Commission as part of the advisory service ASiST managed by the unit in charge of rural development, food security and nutrition (C1) within the Directorate General for International Cooperation and Development (DEVCO).

The study has aimed at clarifying the potential role of food reserves in enhancing food and nutrition security in developing countries, and at making recommendations on how to use food reserves (in complement to other tools), taking into account the specificities on the context and the constraints of World Trade Organisation (WTO) disciplines.

The study was conducted based on i) an extensive review of the existing literature (both theoretical and empirical) and ii) 10 case studies analysing national or regional experiences in Africa, Asia and South America.

All the products of the study (including other working papers, a compilation of case study summaries, and a synthesis report) are available at: <https://europa.eu/capacity4dev/hunger-foodsecurity-nutrition/discussions/how-can-food-reserves-best-enhance-food-and-nutrition-security-developing-countries>.

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## List of Abbreviations and Acronyms

Agricultural Marketing Corporation (AMC)  
Disaster Preparedness and Prevention Commission (DPPC)  
Disaster Risk Management and Food Security Sector (DRMFSS)  
Emergency Food Security Reserve Administration (EFSRA)  
Ethiopian Grain Trading Enterprise (EGTE)  
Ethiopian People’s Revolutionary Democratic Front (EPRDF)  
Food and Agriculture Organisation (FAO)  
Food Security and Employment Creation Sector (FSECS)  
International Food Policy Research Institute (IFPRI)  
Metric tonne (Mt)  
Ministry of Agriculture and Natural Resources (MoANR)  
National Disaster Risk Management Commission (NDRMC)  
National Policy on Disaster Prevention and Management (NPDPM)  
Productive Safety Net Programme (PSNP)  
Relief and Rehabilitation Commission (RRC)  
Strategic Food Reserve Agency (SFRA)  
World Food Programme (WFP)

## 1. Introduction

Ethiopian food policies evolved through difficult tests of time involving human suffering of great magnitude. The country's food insecurity challenges date back to medieval chronicles of the ninth century, when droughts or epidemics caused widespread food insecurity (Pankhurst 1985; von Braun, et al. 1998), including famine in extreme cases. Food security challenges in Ethiopia continue to make headlines today. In 2015, failed rains caused by El Nino resulted in a sharp rise in the vulnerable population. An estimated 10.2 million people, in addition to 8 million people supported by safety nets, needed food aid, with 400,000 children severely malnourished. There were widespread concerns about the possibility of mass starvation and deaths, especially because of the slow response from the international development community.<sup>1</sup> Fortunately, due to a timely response by the national disaster response system and flows of cereals from surplus to deficit areas, there was no spike in food prices in drought-affected regions and no reported deaths. Contrast this scenario with that of 1983 when a drought related famine caused over 300,000 deaths and immeasurable human suffering (Graham, Rashid, and Malek, 2013), even though the severity of the 1983 drought was far less than the 2015 drought.<sup>2</sup>

Ethiopia's success in managing disaster-related food insecurity is the result of adopting a comprehensive set of food policies that go far beyond strategic grain reserves. Expansion of agricultural research and extension, together with promotion of fertiliser use, contributed to a sustained growth in cereal production from 12.6 million metric tonnes (Mt) in 2005 to 27.0 million Mt in 2015. Investments in roads and telecommunications combined with market liberalisation improved grain market efficiency. Better early warning systems combined with an ongoing extensive safety net (the Productive Safety Net Programme) enabled the government and NGO's to directly enhance food security for needy households.

In addition to the above interventions, the government has acted through three separate institutions to address food insecurity in emergency situations and to stabilise prices: (i) the National Disaster Risk Management Commission (NDRMC), the Strategic Food Reserve Agency (SFRA) and the Ethiopian Grain Trading Enterprise (EGTE). Each of these three entities has undergone several reforms over the past four decades. The NDRMC is the more empowered version of the former Disaster Risk Management and Food Security Sector (DRMFSS), which was in turn preceded by the Disaster Preparedness and Prevention Commission (DPPC). Similarly, SFRA and EGTE derived from the Emergency Food Security Reserve Administration (EFSRA) and Agricultural Marketing Corporation (AMC), respectively.

The objective of this paper is three-fold:

1. To better understand the context in which these three entities evolved over time;
2. To identify the challenges of executing recently adopted reform measures; and

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<sup>1</sup> The concerns were evident in almost all popular media reports. For a quick review, see a Washington Post report published in February 2016: <http://www.washingtonpost.com/sf/world/2016/02/22/history-repeats-itself-in-ethiopia/>

<sup>2</sup> For instance, the total population affected by the 1983 drought was 7.75 million, which is less than half the size of the population (18.2 million) needing food assistance following 2015 drought.

3. To explore the options for price stabilisation through international trade.

The rest of the paper is organised as follows. The next section provides an overview of the food security challenges and policy evolution, which is followed by a discussion of the responsibilities and institutional reforms of the three main entities. Section 4 presents an assessment of options for wheat price stabilisation through international trade. The paper concludes with a summary and policy implications.

## 2. Food Security Challenges and Policy Evolution

### 2.1 Setting and context: food security challenges

The list of disaster related famines and food crises in Ethiopia is long (Table 1). Three broad messages emerge from these numbers. First, the scale of food security challenge is large in Ethiopia. Since 1960, Ethiopia has encountered more than 100 disasters—mainly droughts, epidemics, and floods—that affected over 80 million people and caused over 400,000 deaths. Second, the frequency of disasters is increasing over time. There were 48 reported disasters during the first 15 years of the new millennium, almost four times the number of disasters during 1960-80. Finally, while far fewer deaths have been reported, disasters in recent years appear to affect much larger populations than disasters in the past. Since 2001, disasters have affected over 45 million people, which is larger than the size of the population affected from 1960-2000, but human deaths due to these more recent disasters have been only a fraction of the total deaths in the earlier four decades.

**Table 1: Overview of disasters and food security challenges in Ethiopia, 1960-2015**

Year	# of Disasters	Deaths		Affected Populations	
		/ disaster	Total	/ disaster	Total
1960-1980	12	8,564	102,762	527,715	6,332,585
1981-2000	47	6,618	311,055	600,830	28,239,033
2001-2015	48	53	2,541	946,908	45,451,588
<b>1960-2015</b>	<b>107</b>	3,891	<b>416,358</b>	747,880	<b>80,023,206</b>
Source: Centre for Research on the Epidemiology of Disasters (CRED)					

Part of the reason behind the country's success in dealing with disasters is that it has learned from past experiences. Ethiopia had to deal with four major famines within a period of 25 years. The most severe drought-related famines were recorded in Tigray in 1958, in Wollo in 1966 and 1973, and in Hararghe, Tigray, and Wollo in 1983. The estimated deaths from these famines vary, but commonly cited numbers are 100,000 deaths in 1958, an estimated 250,000 deaths in 1966 and 1973, and 300,000 deaths in 1983-4. Since the mid-1980s, there have been several more disasters, some of them affecting much larger populations than the 1983 drought, but there have been no reported deaths. These are remarkable successes and the three key institutions (NDRMC, SFRA, and EGTE) and their

predecessors (Relief and Rehabilitation Commission, DPPC, AMC, and EFSRA) deserve much credit for their accomplishments.<sup>3</sup>

## 2.2 Evolution of the three key public food policy entities

As discussed above, each of the three key food policy entities in Ethiopia went through a series of reforms over the years to adapt to changing realities and waves of ideological thinking. This section presents a synthesised version along with discussions of some recent policy changes.<sup>4</sup>

### ***Ethiopian Grain Trading Enterprise***

In Ethiopia, grain reserve policies date back to the early 1950s when Emperor Haile Selassie instituted the Grain Marketing Board. However, real control over food markets began when the socialist government came to power in 1974. Consistent with its ideology, the socialist government of Ethiopia instituted a wide range of controls over grain production and marketing. These included annual quotas, restrictions on private grain trade and interregional grain movement, setting days on which the local markets had to be held, and rationing of grain to urban consumers.<sup>5</sup> Wholesale prices of cereals were administratively set for many provincial markets and changed little between 1976 and the late 1980s (Webb and von Braun 1994, 48). In other words, the government's marketing board was in control of almost all aspects of markets.

In 1976, the central planning regime reformed the Grain Marketing Board and rename it the Agricultural Marketing Corporation (AMC). The AMC was responsible for almost all aspects of agricultural input and output markets. It was involved in export and imports of agricultural products, buying and selling inputs, as well as processing and marketing of finished products. In addition, the AMC was engaged in the construction of storage facilities, such as silos, and other structures and machinery. By 1987, the AMC had 104 purchase and/or sales centres, (Gutema, 1987), 630 thousand tons of storage capacity in 81 locations in the country, and a fleet of 225 trucks that handled 25 to 30% of its annual transport requirements. In subsequent years, the AMC's resources and the extent of its activities increased. From 1989 to 1990, the AMC had eight regional offices, 27 branch offices, 121 purchase and/or sales centres, and 2,013 grain collection points (Lirenso, 1994).

The AMC imposed significant restrictions on the private trade. Private traders were banned from trading in all regions except the ones where the AMC was unable to handle the surplus. However, traders were required to sell a significant proportion of their purchases to AMC at prices only 15-20% higher than the AMC prices received by farmers for their crops (though open market prices for both purchases from farmers and sales to consumers were typically substantially higher). Individuals were also restricted from transporting more than 100 kg of grain, and this was strongly enforced until the area's quota was fulfilled (Franzel et al., 1989).

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<sup>3</sup> Detailed descriptions of how policies evolved from the experiences of famine are discussed in Graham, Rashid, and Malek, 2013.

<sup>4</sup> A detailed discussion is presented in Rashid and Negassa (2013), including references to policy proclamations and other documents.

<sup>5</sup> For details, see Franzel, Colburn, and Degu (1989), Lirenso (1994), and Lemma (1996).

Within a decade of instituting the AMC, the socialist government realised that it was not achieving the government's objectives. As a result, the AMC was revamped in 1987, giving it a new organisational structure, and taking away its mandate for direct grain exports, agricultural product imports, and purchase and sale of inputs. In March 1990, the government undertook major grain marketing policy reform. The government removed restrictions on private trade and interregional trade, abolished the fixed price and forced quota delivery, and eliminated the monopoly power of AMC.

However, it was too late. The socialist government was overthrown in May 1991, and as part of the new government's liberalisation policies, the AMC was reorganised as a public enterprise and allowed to operate in the open market in competition with the private sector. It was renamed the Ethiopian Grain Trade Enterprise (EGTE) and given mandates to: (a) stabilise prices to encourage production and protect consumers from price shocks, (b) earn foreign exchange by exporting grains and oilseeds to the world market, and (c) maintaining strategic food reserves for disaster response and emergency food security operations.

The EGTE encountered several challenges in the subsequent years. There was constant tension between fulfilling its mandate of price stabilisation and that of competitiveness and profitability. The EGTE was total ineffective in stabilising prices due to limited working capital, and it was often not able to guarantee purchases at pre-announced prices due to logistic and capital constraints, which shook farmers' confidence and decreased the policy's credibility (Rashid and Assefa, 2006).

Therefore, EGTE's mandates were substantially revised through a series of proclamations and regulations from 1999-2000. Despite the change in mandate, EGTE did not completely cease its efforts at price stabilisation, although its role became very limited. The government's share in domestic cereal markets (EGTE and its predecessors) declined from around 40% in the 1980s to 4% by the late 1990s; and less than 2% from 2001-2007 (Rashid et al., 2013). More importantly, the government did not engage in any large scale imports of cereals during this time.

This started changing when domestic prices began to rise sharply, reaching almost US\$ 300 above import parity by the middle of 2008. While this sharp increase in domestic prices coincided with the global food crisis, this problem resulted primarily due to macroeconomic policy challenges, not due to the transmission of the world price hike (European Commission, 2012; Rashid, 2010). However, like many other developing countries, these experiences brought about a fundamental change in policy perception: the country was not ready to fully rely on markets.

The policy actions following this realisation included a ban on cereal exports, re-introduction of urban food rationing programmes and open market sales, and suspension of local procurement. Since there was no local procurement, the only way to support the country's urban rationing (wheat and bread distribution at subsidised prices) and safety net programmes was to import large quantities of cereals through the country's food logistic agency, the EGTE.

Thus, the EGTE once again became the dominant actor in Ethiopia's cereal market, especially in wheat. In 2008, EGTE imported more than a million tons of wheat, which was equivalent to about 50% of total domestic production and almost two and a half times the marketed volume of wheat. Large scale imports into the country continued, albeit at smaller scale, but picked up again in 2013.

From a policy standpoint, this level of public intervention gives rise to several questions, especially regarding market distortions and efficiency. In 2014, the Ethiopian Agricultural Transformation Agency requested that the International Food Policy Research Institute (IFPRI) carry out a review of this set of policies. Based on the study, and several stakeholder consultations, the Agricultural Transformation Agency came up with a specific set of recommendations. However, no policy actions have been taken to date following those recommendation. In 2015, EGTE imported 1.26 million tons of wheat for subsidised distribution in the major urban centres.

### **Strategic Food Reserve Agency (SFRA)**

As discussed above, agricultural price control in Ethiopia began in the mid-1970s when the socialist government, in line with its ideology, instituted a wide range of controls over grain production and marketing. However, the drought of 1973-74 and subsequent famine, which claimed about 200,000 lives, made it clear that the grain stocks accumulated as part of agricultural price policies were not enough to address the country's food emergencies.

Therefore, the government requested the Food and Agriculture Organisation (FAO) to analyse feasible alternatives for addressing vulnerability to shocks and food insecurities. The idea of setting up a strategic reserve came out of that study. The underlying logic was that since the country was structurally deficit, production shocks were recurrent, and infrastructure and institutions were weak, the government had to be prepared to protect the poor and vulnerable in times of scarcity. Given the level of infrastructure, institutional, and other constraints, having an emergency stock was considered critical for national food security. This was the rationale for instituting strategic grain reserves in the early 1980s and appears to remain valid today, due to its success in dealing with recent crises.

**Table 2: Production and food aid in Ethiopia, 1996–2015**

<b>Year</b>	<b>Total grain production (In Mill. Mt)</b>	<b>Food Aid Deliveries (In '000 Mt)</b>	<b>Food Aid as % of Production</b>	<b>Per Capita Production (kg/person)</b>
1996	10.3	244	2.4	175.6
1997	10.4	228	2.2	172.3
1998	8.1	444	5.5	129.9
1999	8.9	473	5.3	138.2
2000	9.2	1,231	13.3	139.9
2001	11.0	980	8.9	162.4
2002	10.4	266	2.6	148.3
2003	11.5	1,887	16.4	160.2
2004	10.6	732	6.9	143.5
2005	12.6	1004	8.0	165.1
2006	14.4	662	4.6	184.1
2007	15.6	577.4	3.7	193.6
2008	16.9	932	5.5	204.2
2009	17.1	999	5.8	201.8
2010	18.1	1,270	7.0	207.5

2011	20.3	672	3.3	227.6
2012	21.9	667	3.1	238.3
2013	23.1	662	2.9	245.8
2014	25.2	552	2.2	260.6
2015	27.0	1,070	4.0	273.3
Source: World Food Programme				

From 1996-2008, food aid inflow to the country ranged from roughly a quarter of a million tons in 1996 to about two million tons following drought in 2003 (Table 2). Although, food aid as a percentage of total grain production was small in most years, it was significant during the drought years, reaching as much as 16% in 2003. Much of this food aid is linked to EFSRA, as both the government and NGOs borrowed from the EFSRA to carry out their operations before food aid arrived to the country. In this regard, EFSRA played important roles in managing the aftermath of droughts and emergencies in the country. EFSRA was the only immediate source of food supplies in the 1999-2000 and 2002-3 drought years, and both government and relief agencies heavily relied on the reserves to combat the unusually sharp increase in food prices during 2008-9 (Graham, Rashid, and Malek, 2013; Rashid and Lemma, 2010). In September of 2008, the EFSRA stock declined from more than 200,000 Mt to only about 17,000 Mt. Even though operational modalities have changed, the same holds true in case of the 2015-16 drought related emergencies. Clearly, things would have been worse if the country did not have the emergency reserve.

Although it recommended setting up emergency reserves, the first FAO study did not present an implementation plan. Therefore, a second study was conducted in 1979, which recommended building a stock of 60,000 Mt within one year and 180,000 Mt within four years. Following this recommendation, the government established the EFSRA in 1982 as an additional unit of the Relief and Rehabilitation Commission. Subsequently, a joint study conducted by the World Food Programme (WFP) and the (then) Overseas Development Administration of the United Kingdom recommended increasing stock levels to 204,600 Mt in 1987. The study came to this conclusion based on the assumption that at least 95% of the food-insecure populations need to be protected by providing a ration of 400 grams of cereal per capita per day for a period of four months (the necessary lead time to import and distribute food to beneficiaries). Food or cash aid involve two lead times: one represents the time between flash appeal to actual pledge by the donors, and the other is the time between the pledge and actual imports.

Institutionally, EFSRA went through a significant change in October 1992, when the prime minister, in his capacity as the chairman of the council of ministers, issued a legal directive establishing EFSRA as an autonomous agency with significant changes in its operational procedures. The primary mechanism to respond to emergencies was now the provision of inventory loans to well-established relief and rehabilitation agencies working in the country. The objective was to facilitate relief agencies' operations in case of temporary shortages in their working stocks if there was a guarantee of repayment within an agreed time. However, the new operational manual did not rule out the possibility of free drawdown, as was the case earlier, if the scale of the emergency was larger and the primary mechanism failed. In other words, the new operational guideline kept the provision for other food security programmes, such as safety nets and price stabilisation programmes, to withdraw from the reserve in case of large-scale emergencies.

Following the droughts of 2002-3, the reserve level was re-examined and a new stock level was established at 407,000 Mt in 2004. The increase in stock was largely dictated by the increase in the number of food-insecure people in the country and the old assumption that it would take four months to reach the beneficiaries with a new shipment of food to the country.

In 2009, IFPRI launched a study of Ethiopia's strategic grain reserve.<sup>6</sup> Before launching this study, IFPRI organised a stakeholders' consultation that was attended by representatives from EFSRA, Disaster Risk Management and Food Security Sector (DRMFSS), NGOs, and national research organisations. At the meeting, it was unofficially mentioned that a policy discussion was underway to increase strategic grain reserves to 1.5 million Mt and to establish an enhanced mandate for EFSRA, which would include greater contribution to price stabilisation activities.

The thinking following the global food crisis was reflected in a government proclamation in 2013. This proclamation proposed substantive reforms to the EFSRA, bringing about substantial changes in its organisation, management, and mandate. The thin and flexible management and operational modalities described in Rashid and Lemma (2010) have changed significantly. Unlike EFSRA, the Strategic Food Reserve Agency (SFRA) is headed by the Director General who reports directly to the Minister of Agriculture. The technical advisory committee, which consisted of representatives from development partners and NGOs, was eliminated and the SFRA is now guided by a board consisting of five key ministries. The other major changes include: re-introduction of price stabilisation mandates, revision of stock targets from 407,000 Mt to 1.5 million Mt (although the proclamation envisioned 3 million Mt), and inclusion of three directorates—marketing and distribution, transportation and logistics, and planning and policies—each led by a director.

### ***National Disaster Risk Management Commission (NDRMC)***

Following the 1973-74 famine, the socialist regime (commonly known as the Derg regime) founded a powerful agency called the Relief and Rehabilitation Commission (RRC). The RRC eventually grew to be arguably the largest and most powerful part of the Ethiopian government during the 1970s and 1980s except for the military. Fuelled by genuine concern over the high number of deaths in the 1973-74 famine, the RRC was initially focused on generating information to help prevent famine. According to many existing studies, the RRC produced some of the finest analyses of poverty and famine in Ethiopia and achieved impressive standards in its implementation of relief measures (De Waal 1997). However, the RRC eventually became overly political, and failed to sufficiently raise the alarm about the next big famine in Ethiopia – the 1984-85 famine—even though it remained a favourite of the government. In the aftermath of the famine, several different policies and programmes were adopted. These included improving the Early Warning System and the logistics of moving food and non-food supplies in response to nutrition, health, and agricultural rehabilitation needs. Although there was some progress in these areas, even in the difficult and war-ridden final years of the Derg, these efforts were overwhelmed by other factors.

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<sup>6</sup> Findings of that study are presented in Rashid and Lemma, 2010. The study was conducted with financial support from the Bill and Melinda Gates Foundation.

When the Ethiopian People’s Revolutionary Democratic Front (EPRDF) government came to power in May 1991, they understood the role that famine played in their victory. Unlike previous governments, the core members of the EPRDF had fought in famine conditions in the northern part of the country. The Tigrayan core of the new government had experienced all three major droughts in the country (1984, 1987, and 1989) when it had received substantial international assistance to help in the famine-affected “liberated zones,” which they held within Ethiopia. These experiences shaped a set of beliefs among the core EPRDF members, which greatly influenced their thinking regarding food security and humanitarian assistance.

The new government concluded that the RRC was a powerful Derg-era institution that needed to be brought down to size and turned to the will of the new government. The expectation was that it would ultimately become unnecessary. They further concluded that humanitarian assistance could be used for subversive purposes (as it had been to support the Tigray People's Liberation Front) or to prop up hostile regimes (as it had been used to support the Derg). On the other hand, the EPRDF government found UN organisations to be weak and oriented to the needs of their client governments, which made them compliant partners.

Thus, the Transitional Government from 1991–95 brought in a variety of new policies and strategies regarding emergency preparedness and response, which included the 1993 National Policy on Disaster Prevention and Management (NPDPM). The NPDPM included an Early Warning System, linking relief to development through community-centred “employment generation schemes,” and a section governing the administrative requirements and activities of NGOs. The newly formed Disaster Preparedness and Prevention Commission (DPPC), which replaced the former RRC, was given the mandate to manage the NPDPM with direct responsibility for food aid and coordination of non-food responses through other government ministries.

In August 2008, the DPPC was closed and replaced by the Disaster Risk Management and Food Security Sector (DRMFSS), led by a state minister of the Ministry of Agriculture and Rural Development. At the same time, the federal level staff was reduced to 300 from over 1,000 during the RRC and 700 during the DPPC tenures (Lautze et al. 2009). The official position was that the DRMFSS would rely more on de-centralised disaster risk reduction and response.

In 2013, the government passed another proclamation that changed the DRMFSS to the National Disaster Risk Management Commission (NDRMC), and empowered it with much more authority and broader mandates. The authority of the NDRMC is evident from the fact that the commissioner of the NDRMC has the rank of a cabinet minister, instead of state minister, and reports directly to the prime minister. In addition, the NDRMC has much broader mandates now. In fact, the commission is the central body for the coordination and implementation of all of the government’s disaster risk management efforts. All humanitarian assistance, both local and international, is channelled through the commission.

### 3. Recent Institutional Reforms and their Implications

#### 3.1 Implications of reforming the Emergency Food Security Reserve Administration (EFSRA)

The EFSRA was a unique institution that received widespread recognitions for its effectiveness in facilitating disaster response. It was unique in terms of three key features. First, unlike many other developing countries, EFSRA did not engage in setting floor and ceiling prices; instead it served as the custodian of grains. Second, it had a clearly defined rule of engagement with active participation of both national and international stakeholders. Finally, it had a thin, flexible, and responsive organisational and management structure.<sup>7</sup> It was guided a board, which used to be chaired by the head of the then DRMFSS. Members included the general manager of EFSRA and the Ministry of Finance and Economic Development, Ministry of Agriculture, and Ministry of Trade. There was also a technical committee composed of the general manager of EFRSA, representatives from the Ethiopian Grain Trading Enterprise (EGTE), the WFP, and a representative on behalf of the NGOs engaged in emergency operations.

To be responsive to emergencies, the general manager of EFSRA was given the authority to release up to 5,000 Mt of grain at a time, with a total of up to 25,000 Mt if requested by any recognised relief agency. For larger amounts, the general manager had to receive approval from a technical committee. The technical committee had the authority to approve 5,000–25,000 Mt, provided that the total outstanding grain loan approved by the committee does not exceed 100,000 Mt. If reserve levels dropped to or below 25% of the targeted total stock of 407,000 Mt, neither the EFSRA manager nor the technical committee could make any decision regarding stock release. At that point, stock release can only be approved by the EFSRA board. If emergencies are acute, the relief agencies can call for an emergency meeting with the board for faster action; the board can then decide on the size of stock release. Although this has been rare, the board made such interventions during the acute crisis of 2008.

A key distinction between the EFSRA of Ethiopia and the reserves of many other countries was that it did not buy, sell, transport, or distribute grain. Instead, the agency served as the custodian of the stock, built through donor and government contributions. More specifically, when the target stock level of 407,000 Mt was determined, government and donors made pledges to build up that stock, mainly through food aid and imports. This is a one-time procurement exercise. Once the stock level is reached, the national and international agencies can borrow from the EFSRA with a guarantee that they will replenish the stock within a pre-agreed timeframe. The main responsibility of EFSRA is to manage the lending and replenishment of stock according to its operational guideline. All transactions must follow strict procedures set by the EFSRA executive board. To that end, the operation manual of the EFSRA states, “The organisation requesting the loan should be legally recognised, engaged in relief activates, and enter into obligations to cover all transactions costs (e.g., loading, unloading, and weighing) both at the time of procurement and at the time of repayments.” In addition, borrowing from EFSRA requires that (1) the relief agency does not have a previous record of default in repaying

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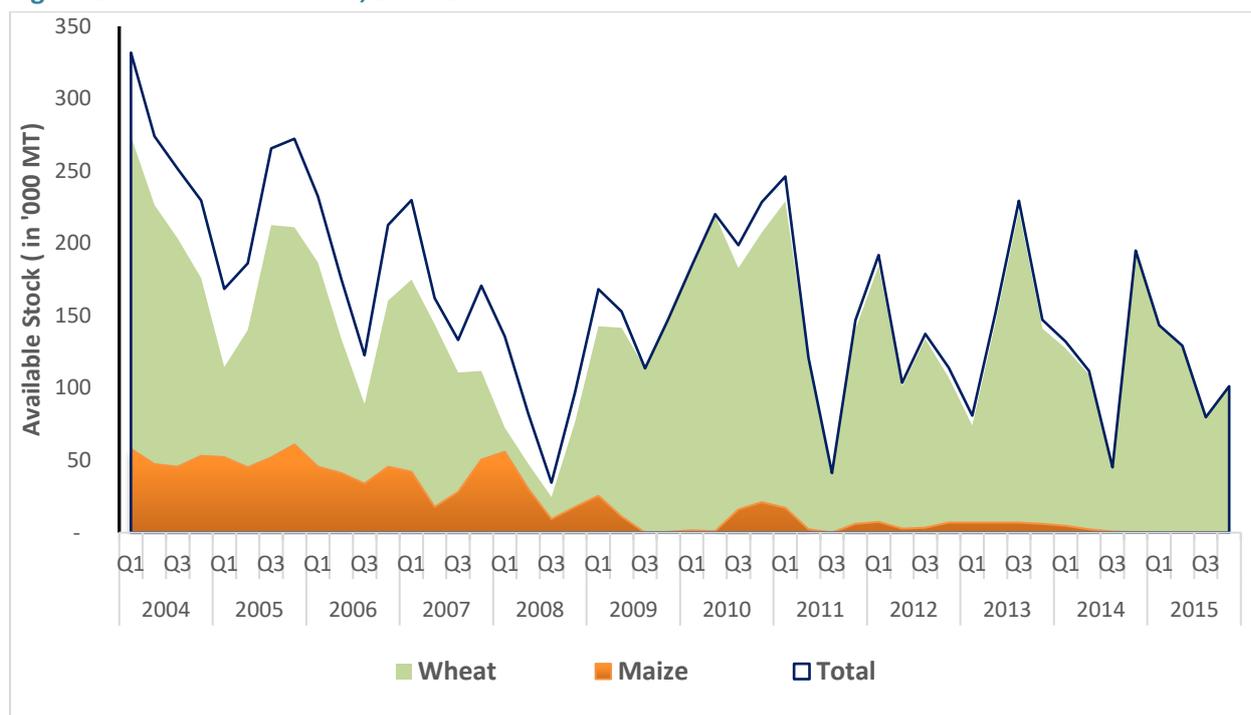
<sup>7</sup> Detail discussions of all these aspects is presented in Rashid and Lemma (2010).

the grain and (2) any request for borrowing must come from the heads of the respective agency and needs to be backed by a letter of guarantee from an additional donor or government agency.

The newly instituted Strategic Food Reserve Agency (SFRA), established in May 2013 under regulation No. 284/2013 to replace the EFSRA, is very different in terms of both mandates and operational modalities. The difference is clear from the four key SFRA objectives outlined in the proclamation, which are: (i) to establish national preparedness capacity to address food gaps arising from disasters in a timely manner; (ii) to stimulate grain production and protect farmers' income by providing them with a floor price in case of market collapse; (iii) to distribute grain in periods of market volatility and high inflation in order to help consumers access food in local markets at affordable prices; and (iv) to export grain to generate foreign currency. However, SFRA will engage in export only if stock is higher than local demand and rotation becomes necessary.

These four objectives essentially imply that the SFRA is mandated to undertake price stabilisation, build grain stocks (original proposal of 3.0 million Mt, which was later revised down to 1.5 million Mt), and conduct food planning and policy analysis. As part of this study, the authors consulted with SFRA and Food Security Bureau officials in order to better understand SFRA's plan and current operational modalities. Three broad facts come out of those consultations. First, even though SFRA is trying to mobilise resources to deliver on its mandates, so far it has been operating *largely the same as the EFSRA*. The only difference is that the stocks are now channelled through the Productive Safety Net Programme (PSNP) and the government's emergency operations through NDRMC. The NGOs and the WFP now operate under an arrangement called the Joint Emergency Operations Partnership. Second, the government is supporting SFRA to build six additional warehouses, so that the stock levels can be raised to 1.5 million Mt over time. Finally, SFRA is also seeking to strengthen its capacity for planning and policy analysis, including developing methods for establishing floor and ceiling prices for major grain.

**Figure 1: Public cereal stocks, 2004-15**



Source: EFSRA data

It is not clear how the SFRA’s big vision is going to play out in the future. However, some simple analysis of the existing data suggests that increasing the stock level and engaging in price setting might not be a very good idea. For illustration, consider EFSRA’s quarterly stock position since 2004, as presented in Figure 1. Even though EFSRA was mandated to hold 407,000 Mt of grain, actual stock in its warehouses never exceeded 350,000 Mt in any quarter since 2004; and in some quarter stocks were well below 100,000 Mt. Yet, the country successfully managed major food security crises in 2007/8, the 2011 drought, as well as the unprecedented droughts of 2015/16. Therefore, it is unclear what rationale the government had in mind in setting up these ambitious targets for the SFRA.

The rationale behind the SFRA’s price stabilisation mandate is also unclear. Since Ethiopia began grain markets liberalisation in the mid-1990s, both the size of and number of actors in grain markets have grown, leading to major changes in the market structure at both the production and marketing levels. At the production level, there are at least three changes. First, total grain production, and hence the market size, has almost tripled since 2004, creating jobs along the entire value chain. Second, there has been an emergence of commercial farmers. While they are less than 1% of the total holding, this group accounts for 5% of the production and even a larger share of marketed supplies. Finally, although coverage is not yet extensive, cooperatives are playing an increasingly important role in providing inputs and extension services to boost smallholders’ production. Therefore, the argument that the government needs to set floor prices to incentivise farmers appears rather weak—grain markets could not possibly have grown if there was a serious lack of incentives for the farmers.

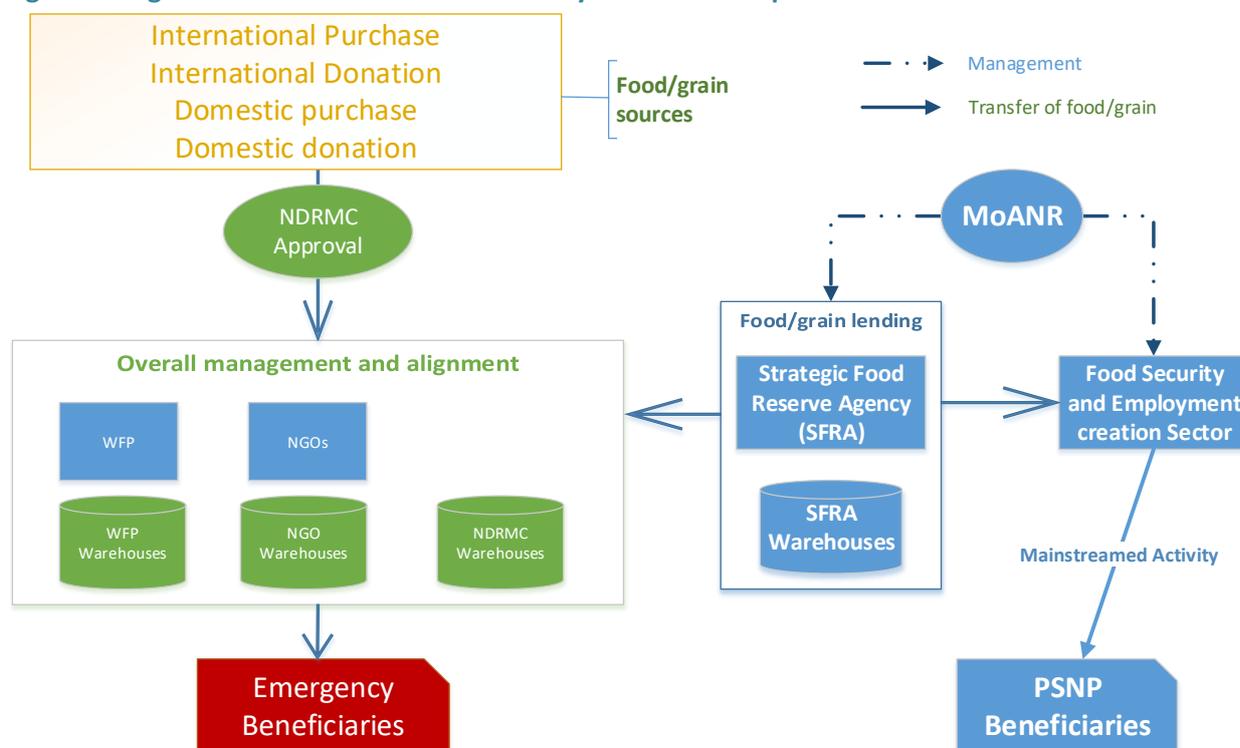
Finally, it is also unclear whether the SFRA is mandated to conduct planning and policy research. The authors’ consultation with the SFRA found that it needs to conduct research to determine optimal stocks, minimum support prices, ceiling prices, and market intelligence. In the Asian context, this

would mean putting together two agencies, such as the Food Corporation of India and the Indian Agricultural Prices Commission. This will be a tall order for the agency and, perhaps more importantly, it might not be worthwhile investing in building such capacity, as NDRMC with its Early Warning System and market intelligence performs many of these tasks.

### 3.2 The reformed National Disaster Risk Management Commission (NDRMC)

As stated earlier, DRMFSS is the successor to the DPPC and was set up in 2008. However, during the reshuffling of the cabinet after the election, the council of ministers decided to reform DRMFSS into NDRMC with a much broader mandate and authority. The central justification for these reforms, based on the authors’ discussions with NDRMC, is to (a) enhance coordination, (b) strengthen government ownership, and (c) ensure rapid response to disasters and emergencies (figure 2).

Figure 2: Organisation of the main food security actors in Ethiopia



Source: Authors

Coordination is obvious in figure 2, as all public grain (purchased or donations and domestic or international) must now come through the NDRMC. However, there is both direct and indirect coordination. The NDRMC performs overall management and alignment of emergency operations by the government, NGOs, and the WFP—all of which have their own warehouses. Coordination with the Ministry of Agriculture and Natural Resources (MoANR) is indirect. There are two entities that reports directly to the MoANR—the Food Security Bureau (renamed as the Food Security and Employment Creation Sector (FSECS)) and the SFRA. A key activity of the FSECS is to supply food (and cash) through the country’s flagship social protection programme – the Productive Safety Net Programme (PSNP). The FSECS generally borrows from the SFRA to carry out its operations, with little direct connection with the NDRMC. On the other hand, the SFRA maintains strong linkages with both the MoANR and the NDRMC.

Figure 2 also clearly suggest that the government is moving towards taking ownership and making disaster response more efficient. To improve efficiency, NDRMC now undertakes a needs and vulnerability assessment during the two cropping seasons--belg and meher. A national technical committee (Joint Emergency Partners' Assessment Committee), comprised of experts from NDRMC, relevant sectoral ministries, donors, and NGOs, travels to each region to undertake the assessment. This exercise is linked with the experts from the Regional Disaster Risk Management Bureau and regional bureaus of the relevant ministries. In each region, the draft assessment is presented to the regional Disaster Risk Management Council (normally called Regional Debriefing) chaired by the regional president.

Once approved, the regional assessments are then compiled by the NDRMC and presented to the National Disaster Risk Management Council (National Debriefing), chaired by the prime minister. The approved assessment is then officially announced to relevant stakeholders, including international donors, and used for the appeal. Based on this appeal, relevant measures are taken by respective agencies.

As an illustration, consider the case of 2015-16 drought. The needs assessment concluded that, in addition to PSNP beneficiaries, a total of 10.2 million people needed food assistance and were supported by the three main groups as follows: the WFP supported 1.5 million, NGOs supported 2.3 million, and the government supported the remaining 6.4 million. In other words, about 63% of the food insecure populations were supported by the government. This is again a remarkable achievement and clear reflection of the government's commitment to taking ownership of disaster response and doing so efficiently.

## **4. Exploring Alternatives: Price Stabilisation and International Trade of Wheat**

### **4.1 Background**

It is well documented that trade can play an important role in price stabilisation. However, this is true only when cereals are tradable. In Ethiopia, almost all cereals, except wheat, are non-tradable—that is, domestic prices lie between the import and export parity prices. Furthermore, government interventions in cereal markets have been minimal since the early 1990s, and apart from a few brief periods, domestic prices have been relatively stable. In part, this reflects low overall macro-inflation in most years, although injections of food aid and government commercial imports into the domestic economy have also played a role.

From 2004-2008, however, expansion of the money supply contributed to overall macro-inflation, as well as a steady rise in cereal prices. Cereal prices also rose substantially in nominal terms, though in real terms (nominal prices adjusted for overall inflation), prices of the four major cereals (teff, maize, wheat, and sorghum) were relatively stable. Overall, from 2000-2013, domestic prices of wheat in Ethiopia (measured in US dollars) were more stable than domestic prices of maize in Ethiopia, Kenya, and Uganda (Table 3 and Figure 3), due in large part to Ethiopian government interventions in wheat

markets (through food aid and the PSNP). Ethiopia's maize prices were less stable than Kenya's, though more stable than Uganda's in both nominal and real terms.<sup>8</sup>

**Table 3: Cereal Price Variability in Selected East African Countries, 2000-2013**

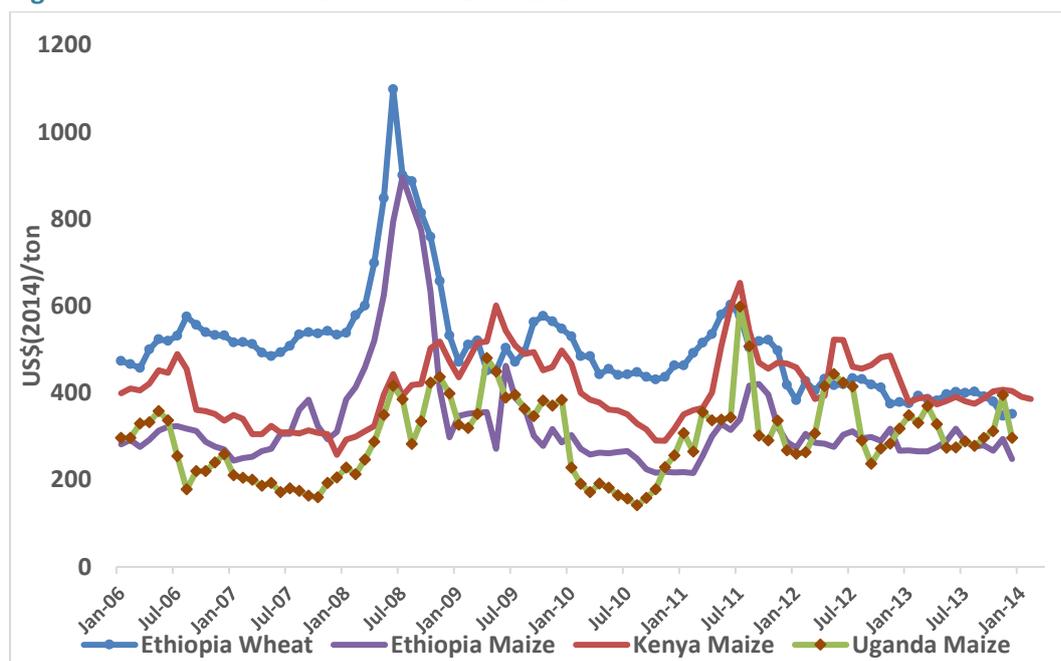
	Pworld(\$) \$/ton	Ex rate lcu/\$	Pborder lcu/kg	Pdom lcu/kg	Pdom(\$) \$/Mt	Pborder/CPI Lcu (2000)/kg	Pdom/CPI Lcu (2000)/kg
<u>Ethiopia wheat</u>							
Mean	291.14	15.89	5.21	6.25	395.03	1.42	1.75
S. Deviation	50.29	2.62	1.55	1.22	50.29	0.26	0.24
CV	0.173	0.165	0.298	0.195	0.127	0.182	0.139
<u>Ethiopia maize</u>							
Mean	240.01	15.89	4.34	4.13	259.82	1.17	1.13
S. Deviation	62.86	2.62	1.54	1.18	39.91	0.26	0.20
CV	0.262	0.165	0.354	0.285	0.154	0.226	0.174
<u>Kenya maize</u>							
Mean	240.01	83.21	22.69	29.69	371.20	25.28	34.92
S. Deviation	62.86	5.28	6.24	7.04	66.11	5.30	6.16
CV	0.262	0.063	0.275	0.237	0.178	0.152	0.176
<u>Uganda maize</u>							
Mean	240.01	2364.45	650.85	639.26	268.35	322.35	283.90
S. Deviation	62.86	250.29	202.92	213.68	79.58	53.22	82.64
CV	0.262	0.106	0.312	0.334	0.297	0.165	0.291

**Source:** Dorosh, Minten and Stifel (2015).

Of Ethiopia's four major cereals, only maize and wheat are traded internationally. The international trade of maize is negligible, however. The lack of trade in maize reflects the high marketing costs relative to the value of grain for maize. As a result, there is a wide spread between import and export parity prices for maize. In most years domestic maize prices have been far above export parity and below import parity. Only in the early 2000s, following bumper harvests, did domestic prices fall to near export parity levels.

<sup>8</sup> Note that Kenya has relatively easy access to international markets for maize, while Uganda is land-locked with very high transportation costs from domestic markets to seaports.

**Figure 3: Cereal Prices in East Africa: 2006-2013**



**Source:** Dorosh, Minten and Stifel (2015).

Wheat prices, in contrast, have often approached (and even exceeded) import parity levels, indicating that private sector imports could have been profitable in many years. Trade and foreign exchange restrictions have prevented this trade in most years, however. Nonetheless, public sector imports (food aid and government commercial imports) and other government interventions (through commercial sales) have been substantial.

## 4.2 Wheat trade opportunities and restrictions

In the early 2000s, domestic prices of wheat were well within the import-export parity band; thus, there was no incentive for private sector trade in ordinary quality wheat. Domestic prices were on average 24% below import parity levels in this period, in part because food aid inflows helped to depress prices to the benefit of net wheat consumers and the detriment of net wheat producers.<sup>9</sup>

Subsequently, from early 2005 to early 2007, private sector wheat imports helped stabilise domestic prices at import parity prices (from 2004/05 through 2006/07, domestic prices of wheat were on average only 0.8% higher than import parity prices). When world wheat prices rose sharply in mid-2007 (a year of normal levels of domestic cereal production), domestic cereal prices remained relatively low and private sector imports were no longer profitable.

However, poor rains in early 2008 led to a failure of the minor season (belg) harvest and domestic prices rose sharply.<sup>10</sup> Although private imports of wheat were apparently again profitable, restrictions

<sup>9</sup> See Rashid, Assefa and Ayele (2008) for estimates of price distortions in Ethiopian agriculture.

<sup>10</sup> The belg harvest accounts for about 15% of annual maize production, but less than 2% of annual teff, wheat and sorghum production.

on foreign exchange for imports of wheat (and other goods) heavily constrained private sector imports.<sup>11</sup> As a result, domestic wheat prices rose above import parity prices.

Instead of facilitating private sector imports, the government arranged for public sector imports of wheat and then sold the wheat at fixed prices in the domestic market (generally 300 Birr/quintal, only about half of the wholesale price of wheat in the Addis Ababa market). Most of the 283,000 Mt of wheat (55%) sold from August-October 2008 was sold to flour mills; 23% of the subsidised wheat was sold to consumers and 18% of the wheat was sold to cooperatives. Overall, less than 2% of the wheat (8,100 Mt) was sold to traders, and none after September 2008, due to concerns that traders did not pass on the huge implicit subsidy to consumers.

Model simulations indicate that sales of government imported wheat reduced real wheat prices in domestic markets from July-October 2008. Average wheat consumption per month was estimated at about 192,000 Mt per month, equal to about 770,000 Mt total from July-October 2008. The announcement of planned imports of 157,500 Mt of wheat and disbursements to millers and wholesale traders contributed to a 12% decrease in wholesale wheat prices in Addis in July 2008 relative to the June 2008 price (24% in real terms). Wheat prices rose slightly in real terms in August 2008, but nonetheless averaged about 20% below June 2008 real price levels from August-October 2008. October 2008 real prices were 26% below the projected real price without the import intervention (the June price plus an estimated 2% per month real seasonal price rise), somewhat less than a simulated 34% decrease using an elasticity of wheat demand with respect to wheat price of -0.8 (a level approximately equal to econometric estimates using cross-sectional household level data).

Two factors likely accounted for the smaller than expected real price decline. First, wheat millers may not have milled all the wheat received or sold all the wheat flour produced by October 2008. Second, imported wheat is not a perfect substitute for locally produced wheat, so increases in imported wheat quantities would likely have smaller effects on prices of locally produced wheat than on prices of domestic sales of imported wheat.

These sales at the low official price also implied huge rents (excess profits) for traders and millers who were able to purchase wheat at 300 Birr/quintal, and sizeable income transfer to poor households who were able to purchase government wheat directly. The total value of these rents and subsidies (which accrued to various actors according to their share in total subsidised wheat distribution) reached about 900 million Birr, equivalent to about US\$ 90 million (Table 4).

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<sup>11</sup> Policy uncertainty regarding future levels of government imports and domestic sales, and concerns over possible seizure of private stocks, may also have contributed to this lack of private sector import supply response.

**Table 4: Subsidy on Government Wheat Sales, Ethiopia, August-October 2008**

	Quantity Sold (‘000 tons)	Sales Price (Birr/ton)	Market Price (Birr/ton)	Subsidy (Birr/ton)	Total Subsidy mn Birr	Total Subsidy mn \$
<b>August</b>	94.8	3,000	6,600	3,600	341	34.3
<b>September</b>	121.5	3,000	6,375	3,375	410	40.5
<b>October</b>	66.4	3,000	5,375	2,375	158	15.5
<b>Total (Average)</b>	282.7	3,000	6,215	3,215	909	90.4

Source: Dorosh and Ahmed, 2010.

Although government imports and sales reduced market prices from extremely high June 2008 levels, market prices still averaged 36% above import parity prices from July-October 2008. Inhibiting private sector imports through foreign exchange rationing thus resulted in lower wheat imports, higher wheat prices, lower wheat consumption, and reduced welfare for net wheat consumers.

### 4.3 The 2015-2016 crop production shortfall

In 2015/2016, Eastern Ethiopia experienced its worst drought in over 30 years. The minor season (belg) rains failed in parts of the eastern highlands and pastoralist areas in 2015. Poor rains also affected the main (meher) season harvest in late 2015. Nationally, net cereal production from the main harvest fell by 14.1% (3.3 million Mt) relative to the 2014/2015 harvest (FAO 2015). Households in regions hit particularly hard, including the eastern highlands and pastoralist areas, suffered severe crop and livestock losses leaving about 10.2 million people, approximately 10% of Ethiopia’s population, in need of food assistance (Ethiopia: Humanitarian Overview 2016). Most of the western part of the country, however, enjoyed adequate rainfall and relatively normal harvests.

Moreover, despite the drought, market prices for maize were nearly 25% below the three-year average, reflecting the government’s long-term investments in boosting productivity (Dorosh, Kennedy and Torero, 2016; FAO 2016). Large inflows of government wheat (commercial purchases or food aid) also contributed to increased supply.

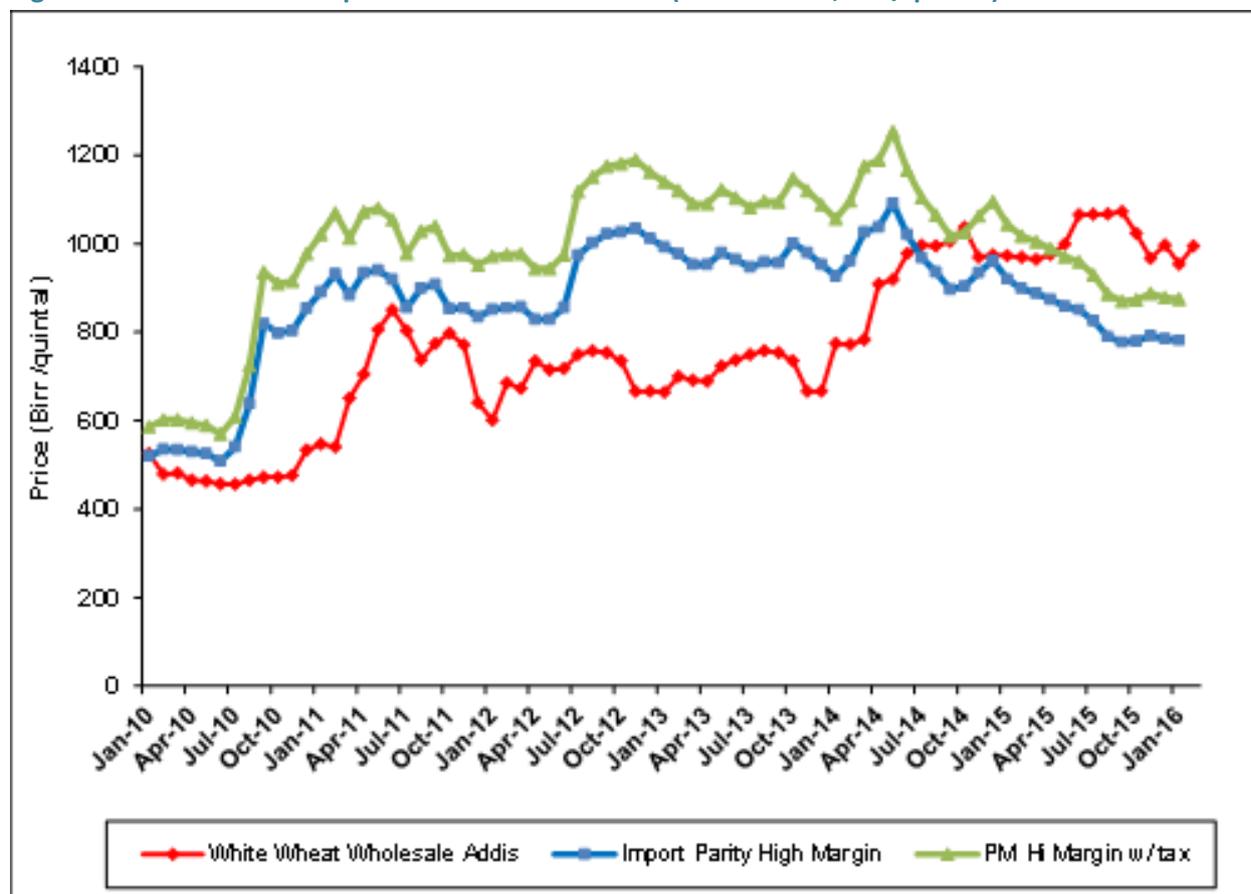
Nonetheless, international prices of wheat (import parity) remained below domestic prices, suggesting that domestic prices could have been lowered by facilitating private sector imports. For most of the period between February 2010-June 2014, import parity prices (without tax) were consistently above the wholesale price of white wheat in Addis Ababa, (by an average of 31%). In early 2014, however, international wheat prices fell while domestic wheat prices rose. As a result, domestic wheat prices, which at the start of 2014 were below import parity prices, were substantially higher than import parity prices by mid-2015, even with taxes and tariffs included (Figure 4).

In September 2015, the import parity price of wheat (7.77 Birr/kg) was 28% below the wholesale price of wheat in Addis Ababa (10.72 Birr/kg).<sup>12</sup> Thus, there was an opportunity to lower domestic prices (and thereby increase purchasing power of net deficit consumers) by encouraging private sector

<sup>12</sup> Because transport and marketing margins are uncertain, alternative estimates of margins are used.

imports. Encouraging the private sector to import wheat would have added to domestic supplies at no cost to the government. It would also have enabled a timelier response to changes in market conditions.

**Figure 4: Wholesale and Import Sales Prices of Wheat (Addis Ababa, Birr/quintal)**



Notes: Import parity figures are calculated using U.S. Hard Red Winter Wheat Price (fob Gulf of Mexico) plus international shipping and domestic handling and transport from Djibouti to Addis Ababa.

Export parity is calculated as the estimated Djibouti price less the marketing and transport cost from Djibouti to Addis Ababa.

Source: Ethiopian Grain Trading Enterprise (EGTE) data and authors’ calculations; Dorosh et al., (2018).

The sustained period of drought and relative food shortage finally ended in 2016. April and May 2016 were marked by poor rains, yet *belg* maize production in 2016 was more than double that of 2015 – 1.06 versus 0.49 million Mt. Thereafter, good rains enabled a successful *meher* harvest throughout most of Ethiopia in 2016-17 (Dorosh et al., 2018).

## 5. Summary and Policy Implications

Amid repeated disasters and other adversities, Ethiopia has made tremendous progress in enhancing food security over the past two decades. A country that experienced two devastating famines within a period of only 10 years is now able to manage much larger scale disasters and avert famine and other food security crises. In large part, this achievement is due to public investments and policies that

led to a doubling of cereal production over the past ten years, more efficient agricultural markets and development of a flexible, well-targeted, large-scale safety net (the PSNP). Effective food security and disaster management institutions have also played a major role, however.

Our review and assessment suggest that Ethiopia has had considerable success in developing institutions and capacities for disaster risk management and for maintaining working stocks for food distribution. The institutions responsible for these tasks evolved over time, with newer versions being empowered to take on larger roles. In contrast, as the government adopted a policy of less direct intervention in cereal markets, the role of the Ethiopian Grain Trading Enterprise (EGTE) diminished until the price spike of 2007-8, after which it regained some of its earlier importance.

The reforms in the disaster risk management agency DRMFS (formerly the NRDMC) were designed to (i) enhance coordination, (ii) augment public ownership, and (iii) provide more rapid response to disaster risks. During the 2015-16 drought related crisis, these reforms proved effective. However, the effectiveness of the SFRA is yet to be established: the SFRA still operates in much the same way as its predecessor (the EFSRA) – lending grain to NGOs and institutions to carry out emergency operations. Moreover, the SFRA's mandates for 1.5 million Mt of stocks, grain price stabilisation, and policy analysis are neither feasible nor necessary. This is evident from the fact that the country successfully managed several recent disasters, even though the SFRA's stock never exceeded 350,000 Mt.

Overall, despite its success in providing targeted food and cash transfers to food insecure households through the PSNP, the country still suffers from considerable price instability. By design, food stocks are too small to support large scale market interventions needed to effectively stabilise prices. Moreover, interventions would be very costly due to large transport and marketing margins for cereals. Nonetheless, there are largely unrealised opportunities to lessen price stability by encouraging private sector international trade in wheat and maize. Wheat prices, in particular, rose above import parity several times in recent years as private sector imports were restricted. Policy simulations suggest that private trade could mitigate these price spikes while resulting in substantial budgetary savings.

In summary, the Ethiopian system with its minimal stocks has successfully evolved over time. Policies and public investments to promote increased production, more efficient markets, and effective safety nets have made large contributions to overall food security, while costly direct government interventions in markets to stabilise prices have greatly diminished since the 1990s. Public food stocks play only a minor role in the current food system, essentially functioning as working stocks that expand temporarily to facilitate emergency relief operations. The institutions charged with managing food stocks and emergency relief have grown increasingly effective in addressing crises. Nonetheless, because the country remains susceptible to drought, Ethiopia will continue to need well-chosen public investments and well-functioning institutions to maintain or surpass the remarkable improvements in food security it has achieved over the past two decades.

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