
CHAPTER 4: *BALADI* BREAD SUPPLY CHAIN LOGISTICS

“Until we understand *why* our society adopts its policies, we will be poorly equipped to give useful advice on how to change those policies.”

Stigler, *The Citizen and the State*, 1975, p.ix.

In this section, I will examine in detail each stage of the *baladi* bread supply chain, from harvest to sale. After identifying conventional and non-conventional actors in the previous chapter, I will now look at how each of them contributes to the administration of key operations in the subsidy system and how, in practice, different operations are not as clear-cut as previously findings in the literature might suggest. Rather, by outlining the underlying political economy of each stage, I uncover a new reality of how the *baladi* bread supply chain actually operates. Each section describes one of the twelve stages and Figure 7 at the end of this chapter provides a comprehensive review and summary of the *baladi* bread supply chain process.

Harvesting and purchase

Baladi bread wheat can be traced back to two sources – wheat that is harvested domestically and wheat that is purchased on the international market. Domestic wheat is purchased by the PBDAC on behalf of the GASC from local farmers in the Nile Delta, Upper Egypt and reclaimed land by the Red Sea and Aswan. In 2013, Egypt’s domestic wheat production reached 8.7 MMT from a total harvest area of 1.4 million hectares.¹¹⁶ Data from the Foreign Agricultural Service at the United States Department of Agriculture in Table 2 below estimates that 52% of the total harvest was sold, 31% was given out as gift or for other reasons, 6% was stored for other uses and 5% was use as partial payment to workers or landlords and used as animal feed.¹¹⁷

At the start of the growing season (September - November), the MSIT announces procurement prices for local wheat by establishing a floor price 15-25% higher than the anticipated international market price of wheat in the harvest season.¹¹⁸ These higher prices are meant to incentivise farmers to sell their wheat through government channels instead of private traders.¹¹⁹

¹¹⁶. See: Kherallah et al., 2000.

¹¹⁷. See: Hamza et al., 2013.

¹¹⁸. In August 2013, international wheat procurement prices stood at \$310/MT (including shipping) whereas the Egyptian state was offering local farmers \$390/MT.

¹¹⁹. This change in policy came with the ERSAP programme, where wheat farmers were no longer mandated to sell a quota of their crop to the government. Rather, since 1987, Egyptian farmers have been free to either stockpile or sell their wheat to any buyer.

Table 2. Annual wheat production in Egypt						
Weat Egypt	2011/2012		2012/2013		2013/2014	
	Market Year Begin: Jul. 2011		Market Year Begin: Jul. 2012		Market Year Begin: Jul. 2013	
	USDA Official	New Post	USDA Official	New Post	USDA Official	New Post
Area Harvested	1,280	1,280	1,350	1,350		1,400
Beginning Stocks	5,508	5,508	6,718	6,718		3,818
Production	8,400	8,400	8,500	8,500		8,700
MY Imports	11,650	11,650	8,500	8,000		8,500
TY Imports	11,650	11,650	8,500	8,000		8,500
TY Imp. from U.S.	989	989	0	0		0
Total Supply	25,558	25,558	23,718	23,218		21,018
MY Exports	240	240	200	300		300
TY Exports	240	240	200	300		300
Feed and Residual	2,600	2,600	2,100	2,400		2,200
FSI Consumption	16,000	16,000	16,300	16,700		15,500
Total Consumption	18,600	18,600	18,400	19,100		17,700
Ending Stocks	6,718	6,718	5,118	3,818		3,018
Total Distribution	25,558	25,558	23,718	23,218		21,018

FSI Consumption= Food, Seed and Industrial.

MT = Metric Ton.

MY = Marketing Year. Post and USDA official data both follow the EU27 local marketing year of July to June except for corn which follows an October to September calendar.

TY = July to June for wheat and October to September for coarse grains.

Source: Foreign Agricultural Service at the United States Department of Agriculture.

Some of the issues associated with the supply of local wheat for *baladi* bread production are linked to the incentives for farmers to sell their harvest to the government. There are several factors at play here including the availability of sufficient subsidised fuel for farmers to irrigate the land, the use of harvesting equipment and the transport of wheat to PBDAC granaries in their local governorate. In addition, despite lower purchase prices, private traders might sometimes seem like a more rentable option to farmers. Fieldwork data revealed that some private traders would offer to pick up the wheat from the farm, make partial reimbursements for the costs of seeds and fertilisers and arrange long-term purchasing contracts at the current price.¹²⁰ This last item is particularly helpful to farmers as they are often less likely to be constrained by the PBDAC's annual quota and price announcement for wheat procurements.

Harvesting takes place between April and August. Throughout that period, a steering committee that involves representative members of the MSIT, the Ministry of Agriculture and Land Reclamation, the Ministry of Trade and the Ministry of Finance meets every two weeks to resolve any supply bottlenecks in the transport or storage of domestic wheat. More often than not it seemed that these meetings were carried out on a reactionary basis when logistical issues arose rather than according to a carefully implemented strategic plan designed to thwart them.

In the case of international wheat, the GASC imports about 40-60% of Egypt's wheat needs for *baladi* bread production from the international market. The volume of wheat imports is determined by several factors that the GASC takes into account. These include the anti-

¹²⁰.See: Kherallah et al., 2000.

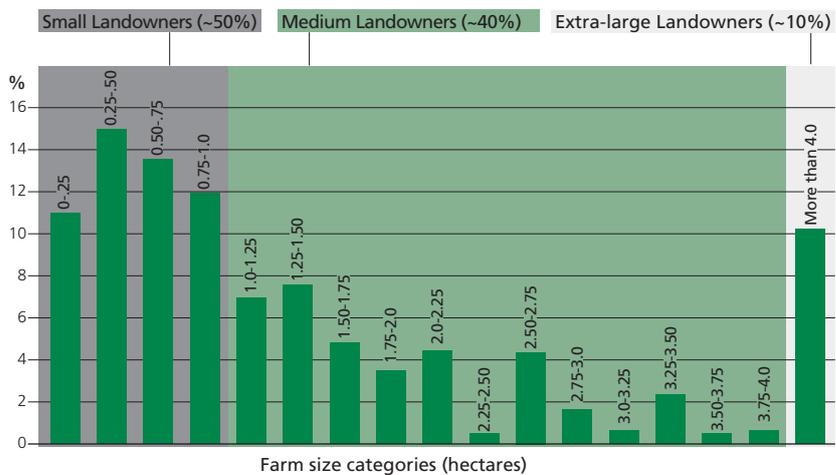
pated amount of domestic wheat that will be harvested that year and the availability of state funds to purchase international wheat. Oddly, but not surprisingly, it is cheaper for the GASC to buy wheat on the international market, as large private traders are able to make use of efficient transport systems and the relatively lower international market price to sell wheat to the GASC. This process happens through tenders issued by the GASC three to four times a year. The winning bids are allocated based on the quality and type of wheat offered and its compliance with GASC standards, the transport price and delivery date to Egyptian ports.

Yet, although this might seem like a well-crafted framework to ensure the on-going provision of subsidised *baladi* bread by the state, in reality, these processes are less clear-cut and the procurement of wheat by the Egyptian state tends to be murkier.

Figure 5 below suggests that medium to large operators cultivate a significant part of Egypt’s arable land (~40%), slightly less than small landowners.¹²¹ As a result, they dispose of the machinery that would allow them to transfer the wheat to PBDAC granaries themselves, whereas smaller farmers must rely on middlemen to do so. Wheat is sold to traders who pay farmers a set price on the spot and then sell it to the state at another, usually higher, price. Between the field and the granaries, these traders have the opportunity to inflate their profits by incorporating cheaper international wheat into the mix and marketing it as local to recoup the higher price premium.¹²² There is no control over this process and smallholders are often at a loss as a result of this. These practices then ensure preferential access to larger wheat farmers and private traders that profit at the expense of the smaller farmers when delivering the wheat to local granaries.

The GASC and MSIT have attempted to remedy some of these practices by restricting wheat deliveries for local farmers within their governorates. This is an attempt to prevent traders from further profiteering from this practice at a national level but it still does not advantage farmers.

Figure 5. Distribution of wheat farms by farm size



Source: International Food Policy Research Institute, 2000.

121. The nature of these larger operators is worth examining in more detail: some of them consist of landlords managing slightly larger farms of up to 5 feddan (2.1 hectares), yet there is a category of middle peasants that benefitted from the distress sales to rich peasantry due to Nasser’s Agrarian Reform Law. These richer peasants are in the 5-20 feddan (2.1-8.4 hectares) category that acquired the land via crash or distress sales.

122. The cheap wheat does not need to conform to the GASC’s strict requirements and standards. Hence, often, the low quality wheat can be purchased for much less and marketed as locally-produced wheat by these traders.

Similarly to domestic wheat procurement, the GASC does not allow trading in wheat futures, but relies on “spot buying” to purchase its international wheat.¹²³ This short-term strategy in wheat procurement has its genesis in the country’s role in international wheat markets. Egypt is the world’s largest importer of wheat, making it a price-maker, that is, a buyer that can drastically affect global market prices and purchase volumes through annual imports that exceed 10 MMT of wheat (see Figure 6 below).¹²⁴ The GASC accounts for 80% of these imports (the rest is brought in by private traders) and a large portion of it is used for *baladi* bread production.¹²⁵

The GASC tends to favour this type of short-term buying as it is less likely to be dependent on the volatility of international market prices with futures contracts. Hence, the GASC can first consider its domestic harvest yield, available storage space and state budget as well as the international outlook for wheat prices before announcing its import bids.¹²⁶

123. A spot contract is a contract for buying or selling a commodity for payment and delivery on the spot date, which is usually up to two business days after the trade date. However, in the case of futures contracts, contract terms are agreed on but the payment and delivery will occur at a later date.

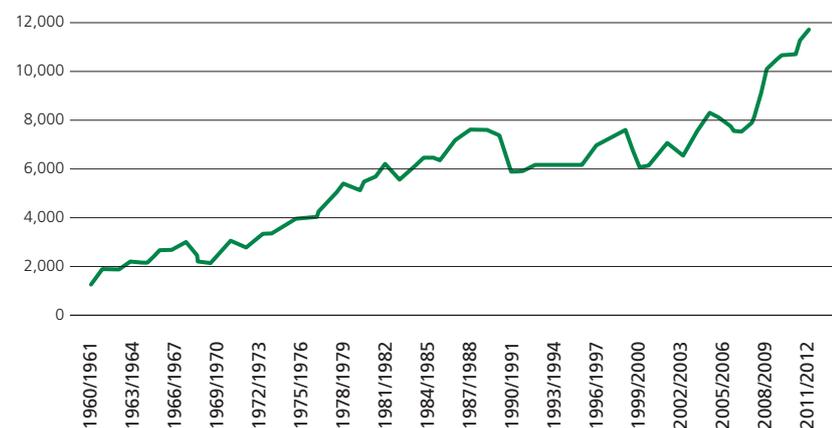
124. Detailed accounts of Egypt’s annual wheat imports can be found at: <http://www.indexmundi.com/agriculture/?country=eg&commodity=wheat&graph=imports>. [Accessed on January 26th 2014].

125. The remainder of the wheat brought in is either used for the production of pasta and pastries as in case of the GASC, or the production of unsubsidised bread by private traders.

126. This is beyond the scope of this book, but the volatility of international wheat prices is a key consideration for GASC officials when importing wheat. Since 2008 the United Nations Food and Agriculture Organization has reported that as an unregulated commodity on the international price index, wheat prices are likely to become more volatile in the future.

127. Prior to that period, the GASC would rely on public and private contracts to guarantee its wheat needs. This usually took the form of contracts with other governments to purchase their wheat harvest or with local companies tasked in purchasing and delivering the wheat to Egyptian ports. With the onslaught of the 2008 food crisis, the GASC has sought to better control the quality and transport of its wheat and became the sole organism in charge of procuring wheat for *baladi* bread consumption.

Figure 6. Changes in Egypt’s wheat imports (1960-2012) in thousand metric tons



Source: Agence Française de Développement, 2013.

Wheat inspection

Wheat inspection is one of the intermediary stages for international wheat purchases before it is shipped from the producer to the country. Since 2009, the GASC has sought to better control the management and quality of its wheat imports using tenders.¹²⁷ In order to ensure that exporting countries are complying with the MSIT’s marketing and import policy for *baladi* bread, the GASC has issued tender requirements that include wheat inspections. Six inspectors are chosen from the Ministry of Agriculture and Land Reclamation’s Central Administration for Plant Quarantine, the Ministry of Trade and Industry and the Ministry of Health to inspect the wheat at the producing country’s port, before it is shipped. A similar group inspects the wheat on arrival to ensure that it complies with the quarantine check. These measures supposedly reduce the possibility of shipment interceptions and accelerate the customs clearance process in Egypt.

The GASC has further reinforced these measures following deliveries of wheat that was unfit for human consumption. In the past, it has imposed bans on key wheat-exporting countries like Russia and Ukraine due to the presence of dead bugs and other impurities well above the allowed limit.

Upon closer investigation, these technical health and safety guidelines emerged as a guise for handing discretionary power to bureaucratic insiders. Since Egypt is the world's largest importer of wheat, these inspectors are able to extract a lot of power from their position to veto or permit a wheat shipment. This provides them with opportunities to derive unearned discretionary income through a series of agreements with import-producing countries and international shipping companies.

In some of the collected testimonies, it was disclosed that some of these inspectors were part of a larger corruption ring that benefits from a commission-based system with international actors when importing foreign wheat.¹²⁸

Storage and delivery

The principal agents in the storage of *baladi* bread wheat can be divided into two groups: they are either public holding companies, such as the EHCCS and the GCSS, where the government has a majority stake in the running of the organisation, or they are subsidiaries of government bodies, in this case, local granaries owned by the GASC and its affiliate, the PBDAC.

The estimates for Egypt's wheat storage capacity vary between different studies, particularly in the case of local granaries where it is difficult to get an aggregate number of the available storage volume in open air spaces (*shonas*).¹²⁹ On the other hand, much of the imported wheat destined for *baladi* bread production – a significant portion of the subsidy – is stored in steel silos owned by the EHCCS and GCSS. The storage capacity for these silos varies between 1.0 and 1.5 MMT, well below wheat import volumes which average 6-8 MMT per year. The GCSS has grain silos stationed at five ports where they store part of the imported wheat (350,000 MT), the remainder is sent to inland silos (400,000 MT) using the company's truck fleet.

The more recently established EHCSS has already built 25 steel silos to upgrade wheat storage capacities and reduce the amount of losses. In 2013, they were able to store up to 750,000 MT of imported wheat delivered to them via the GCSS truck fleet.

In the case of locally produced wheat, Egyptian farmers are in charge of delivering the harvest to local granaries owned by the PBDAC. Despite the higher price incentive for farmers to sell their wheat to the government through the PBDAC, many of them opt out of doing so. In fact, the majority of farmers in Egypt operate small plots and have neither the capacity nor are willing to pay the costs of transporting the wheat from their farm to the local granary. This practice has become more widespread since 2011 as fuel shortages around Egypt have

128. These stories are difficult to document, yet in April 2014, Al Ahrām Newspapers reported evidence of about \$1 million worth of wheat being smuggled by a company in which the former secretary to President Hosni Mubarak and a member of parliament were major shareholders. Through a series of forged fake documents, the cheaply imported wheat was marketed as domestic wheat to recoup the higher price incentive offered by the State. See: <http://gate.ahram.org.eg/UI/Front/Inner.aspx?NewsContentID=484473>. [Last Accessed on April 26th 2014.]

129. The estimated storage capacity for *shonas* has varied over time (2-4 MMT). Given the disaggregate nature of PBDAC local granaries at the governorate level, a true estimate of the storage volume would require a more thorough study in the field to calculate each governorates' storage capacity. This is beyond the scope of this book and less relevant to the overall objective of this study.

exacerbated farmers' access to diesel in many provinces. Many of the small farmers then end up marketing their wheat to private traders that dispose of better finances and transport means to carry the wheat. Subsequently, the bulk of the wheat received by the PBDAC for storage is a mix of deliveries from medium to large-sized farms with enough capacity and economies of scale to transport it and private traders that purchase the local harvest from smallholders and transport it to the granaries.

There are several political economy issues that arise as a result of these practices. GASC's preference to store imported over locally produced wheat in well maintained and efficient steel silos coupled with its weak incentive to procure wheat from the farmers – despite the higher price premium on offer – creates many distortions in the supply chain.

Firstly, the poor state of the bulk of local wheat storage facilities, the *shonas*, leads to large amounts of material wasted due to the lack of any flooring or roofing. This results in grit cross-contamination as well as high rates of vermin infestation due to birds and rodents eating the wheat. Millers receiving this wheat are then unable to properly make use of it to produce *baladi* bread and many of them fail to generate enough flour with the allocated quota, which acts as an incentive to sell it on the black market for a much higher price.

This lack of maintenance also contributes to indirectly increasing Egypt's import bill and reliance on foreign wheat as its population steadily rises.¹³⁰ Previously, the state would absorb the import cost into the national budget and it did not mind relying on international wheat as a way to divest part of its foreign reserves.¹³¹ Given the bureaucracy and low salience associated with improving wheat storage capacity, the state simply did not deem it a priority item to focus on.

However, with recent developments having led to the depletion of Egypt's foreign reserves, the state has shifted its wheat procurement strategy to reducing dependence on imports from abroad and improving storage capacities.¹³²

Secondly, the current market structure for the GASC's procurement of local wheat through its affiliate, the PBDAC, benefits medium to large-sized farms and private traders that are able to transport the wheat to local granaries. This mandated requirement suggests that only producers with the right means to transport wheat harvests over long distances (*i.e.* trucks), are able to truly benefit from the incentive offered by the state for domestically produced wheat.

Milling and delivery

Baladi bread wheat is milled at between 231 public and private sector mills. Public sector mills amount to 64% (147 mills) of the total milling capacity and produce 86% of the milled flour for *baladi* bread.¹³³ They are owned by subsidiaries of the Food Industry Holding Company (FIHC), a public holding company in which the government controls the majority of the shares (>51%).¹³⁴ These mills produce *baladi* bread flour at a fee that is previously agreed upon between the FIHC and GASC.

130. Since 1991, Egypt's wheat imports have steadily increased from 5.81 MMT to 10.50 MMT in 2013. At the same time, the country's population grew from 57.39 million to 80.72 million.

131. Ever since the 1987 ERSAP, food subsidies as a share of national GDP have dwindled, in the case of the *baladi* bread subsidy, it accounts for 1% of national GDP and 15% of the total subsidies granted by the state budget.

132. At the start of the January 25, 2011 uprising, Egypt's foreign reserves stood at \$36 billion and in April 2014, they had dwindled to \$17.04 billion. At the time of writing, the heads of the two public holding companies in charge of storing wheat for *baladi* bread, the EHCSS and GCSS, have been fired by the Minister of Supply and Internal Trade for failing to meet their targets. In addition, the minister has removed one senior trader at the GASC over an allegation of corruption.

133. Poulin et al., 2002.

134. There is a total of 7 subsidiaries under the FIHC, see footnote 107 for a listing of the companies and Kherallah, 2002, for a breakdown on the number of mills per subsidiary.

Imported wheat is delivered to these mills through a fleet of trucks from one of the storage companies mentioned above whereas domestic wheat is delivered from PBDAC's local granaries using GASC's own trucks. At any one point, *baladi* bread mills have 10 days' worth of wheat for *baladi* bread flour in storage.

However, these mills are only able to cater for part of the *baladi* bread flour demand, so the GASC tends to contract private sector companies to mill the rest of the flour for *baladi* bread production (14%).¹³⁵

There are many differences between public and private sector millers of *baladi* bread flour. Firstly, public mills tend to be larger in size and labour. As government-owned entities, they tend to operate as inflated bureaucracies that still make use of conventional stone milling techniques to grind the wheat. Private mills operate on a smaller scale and tend to be more efficient and modern by relying on less labour and use automatic roller mills to extract the flour.

Finally, there are large numbers of mills in areas that are less likely to be serviced by the state's *baladi* bread scheme due to population size and logistical constraints. In these localities, local mills operate on a service-oriented basis where producers and families can bring in the wheat and have it milled. These mills are not directly affiliated with the production of *baladi* bread and so are beyond the scope of this book.

This milling structure presents some underlying technical and political economy problems when it comes to administering the *baladi* bread subsidy.

The outdated milling techniques used in public mills are less productive and profitable than their private counterparts. For instance, the use of stone on stone grinding methods produces grit that ends up in the flour. Also, the low quality of locally produced wheat brought in from the *shonas* tends to increase repair costs. This is because stone mills are less able to separate the foreign matter in the wheat and need to be manually repaired each time the machine is jammed. This also contributes to indirectly increasing labour costs.

In addition, public millers are less able to influence the milling fee, rather, they are forced to accept whatever rate is negotiated by the GASC and FIHC beforehand. As the state has a majority stake in most of the public sector milling companies through the FIHC, public mills are less able to set milling fees for *baladi* bread flour. That means that many of them strive to reduce operational costs in order to generate a small profit from this process.

However, these mechanisms also provide an incentive for public millers to sell some of the flour on the black market. Similarly to other actors in the supply chain, millers can exploit the high price differential between *baladi* and non-*baladi* bread flour to supplement their income streams.

It is worth noting that the FIHC also has a separate arm dedicated to milling for the private sector. Although field visits did not document any collusion of interests between the FIHC's private and public activities, testimonies from other actors in the supply chain suggested that these activities were quite common. Future research can more closely scrutinise

¹³⁵.Data calculated by Ayel et al., 2013.

the incentives of some milling companies under the FIHC to inflate their *baladi* bread flour quotas with flour from the private sector.

Many of these inefficiencies persist in the milling sector as they provide the GASC with better control over the means of flour production. In the event of a national strike or opposition over cost of production payments, the GASC can more easily restrain public milling companies than their private milling counterparts.

This becomes much more difficult to tackle with bakeries which are greater in number and scope as will be discussed in the next section.

Baking

Baking is the final stage in the *baladi* bread supply chain. Bakeries are in charge of the mixing, fermentation and baking of flour into *baladi* bread before selling it at the subsidised price of 5 piasters (<\$0.01).

As of October 2012, the MSIT estimated that there were 19,174 licensed *baladi* bread bakeries in operation. The large majority (>88%) of these bakeries are privately owned and they supply about 60% of the demand for *baladi* bread. The GASC contributes to covering part of the cost of production by paying bakers a monthly remittance. The amount paid is the product of negotiations between state officials and the Bakery Owners' Division at the Federation of Chambers of Commerce. These negotiations take into account the cost of subsidised flour covered by the state for *baladi* bread production and a small profit margin accorded to bakers to do this task. In 2013, *baladi* bread flour cost the government \$419/MT whereas it was made available to bakers for the equivalent of \$26.5/MT. At the same time the GASC paid licensed bakers \$18 to bake fifty kilograms of flour.¹³⁶

In theory, only bakeries with a baking licence from the MSIT can produce *baladi* bread. Prospective bakers send in an application form to the MSIT, these are then reviewed with reference to the location of the potential bakery. The MSIT takes into account the population count in the area, the number of bakeries available in that locality and the feasibility of transporting the *baladi* bread flour from mills or warehouses to the bakery. These licences are usually issued until the bakery is wound-up or if it is shut down for violating government regulation. Similarly, bakeries that already have a licence to produce *baladi* bread are subject to an annual review by the MSIT to determine their flour quotas with consideration to the above factors.¹³⁷

In actual practice, the system leads to competition amongst bakeries to obtain a licence. Prospective bakers fight for these licences by courting the local mayors and MPs in charge of allocating them in their locality.

Furthermore, bakeries are unevenly distributed across the country. Large urban centres like Cairo and Alexandria are supplied with flour quotas well above the national average of 3 loaves per day. In Cairo, for example, there are about 4 loaves of *baladi* bread available per capita whereas in some Lower Egypt governorates this figure decreases well below the national average (see Table 3 below).

136. On average the state pays 34 piasters to produce each loaf of *baladi* bread before selling it on the market for 5 piasters, a substantial burden particularly when one considers that 240 million loaves of *baladi* bread are baked daily. See: Hamza et al., 2013.

137. During this review the MSIT budgeted for a daily limit of 3 loaves of *baladi* bread per person.

This distribution is the combination of Egypt's history of urban provisioning and political economy. Traditionally, the state has sought to provide basic food commodities to a growing urban population that had migrated from the rural areas to the city and could no longer rely on producing its own food.¹³⁸ As a result, the state tended to prioritise the provision of subsidised bread in urban areas, as they could no longer bake their own bread using locally harvested wheat like their rural counterparts. However, Table 3 also tells another story. The stark contrast between Cairo (3.9 loaves per capita) and Bahariya (2.3 loaves per capita) tells of the success that urban bakers can have in influencing MPs to grant them licences compared to other cities with a large population basis.

Table 3. *Baladi* bread availability per capita (2004 and 2011)

Province	2004			2011		
	Population census	Monthly volume of <i>baladi</i> bread flour (ton)	Average number of <i>baladi</i> bread loaves per capita	Population census	Monthly volume of <i>baladi</i> bread flour	Average number of <i>baladi</i> bread loaves per capita
Cairo	7,700,000	63,358.1	2.9	7,126,643	69,865.8	3.9
Helwan	-	-	0.0	1,827,147	17,987.1	3.6
Al Giza	5,600,000	40,943.0	2.5	3,321,805	25,827.4	3.3
6 October	-	-	0.0	2,779,225	18,568.1	2.8
Qalubiya	3,800,000	31,654.7	2.9	4,542,040	30,541.7	3.6
Alexandria	3,800,000	30,983.3	2.8	4,360,295	37,659.2	3.1
Matrouh	300,000	3,821.1	4.4	352,231	3,785.5	4.0
Bahariya	4,600,000	23,698.8	1.8	5,066,577	29,466.6	2.3
Gharbiya	3,800,000	21,420.7	2.0	4,259,378	25,599.1	2.5
Kafr El Sheikh	2,500,000	13,326.0	1.8	2,800,274	15,354.7	2.6
Al Manoufiah	3,200,000	18,010.0	2.0	3,492,819	22,193.1	2.6
El Dekhaliyah	4,900,000	26,382.0	1.9	5,336,650	29,565.3	2.4
Damietta	1,000,000	7,995.6	2.8	1,180,931	8,346.2	3.7
Al Shaqriya	5,000,000	26,898.3	1.9	5,731,138	34,400.3	2.8
Port Said	600,000	4,067.5	2.4	603,787	4,701.0	2.7
Ismailiya	800,000	8,283.2	3.6	1,027,822	8,143.0	3.5
Suez	500,000	4,334.0	3.0	549,337	4,818.6	3.0
Fayoum	2,300,000	17,766.1	2.7	2,717,681	21,998.6	2.9
Bani Sweif	2,200,000	14,390.7	2.3	2,466,935	17,942.4	2.9
Menya	3,900,000	27,858.5	2.5	4,471,406	33,013.1	3.1
Asyout	3,400,000	24,176.1	2.5	3,697,729	28,472.1	3.6
New Wadi	100,000	1,052.2	3.6	199,601	1,912.5	3.0
Sohaj	3,700,000	29,686.7	2.8	4,005,544	33,198.6	3.8
Qena	3,300,000	28,298.8	3.0	2,635,871	21,663.2	3.7
Al Aqsar	-	-	0.0	978,574	10,423.5	4.5
Red Sea	200,000	2,351.3	4.1	306,679	2,472.0	4.9
Aswan	1,100,000	12,799.9	4.0	1,256,255	14,155.1	3.0
North Sinai	300,000	3,958.0	4.6	373,752	4,945.0	3.1
South Sinai	100,000	896.8	3.1	154,927	1,325.0	3.0
Total	68,700,000	488,411.4	2.5	77,623,053	578,343.8	3.2

Source: Ministry of Supply and Internal Trade.

¹³⁸ See: Pamuk, 2004.

This chapter has focused on the various supply chain stages in the *baladi* bread subsidy system. Figure 7 below summarises this process from start to finish.

Figure 7. The *baladi* bread supply chain

