Kazakhstan

Challenges in enhancing agricultural and food production

Summary of food chain case studies

Report prepared under the FAO/EBRD cooperation

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1. Introduction

Population growth, accelerated urbanization and higher incomes are expected to lead to an approximately 70 percent increase in global food demand by 2050\(^1\). Such a rise in demand would require 1 billion extra tonnes of cereals and 200 million extra tonnes of meat. Kazakhstan has a large agricultural surface area, accounting for 77.2 percent of total land in the country\(^2\), and may therefore play a significant role in addressing this challenge. However, in contrast to other regions, yields in Kazakhstan have stagnated since the 1970s and efficient value chains have been slow to emerge.

A series of case studies, prepared within the framework of the FAO/EBRD cooperation, analysed the challenges facing private sector stakeholders in Kazakhstan to increase production and improve the quality of agrifood products. The case studies covered five food value chains:

- Wheat and wheat products;
- Oilseeds;
- Fruit and vegetables;
- Dairy and beef meat; and
- Poultry.

This report summarizes the opportunities and challenges identified in the case studies, as well as some of the general recommendations, including: (i) overarching policy directions for the Kazakh government; and (ii) operational directions for international financial institutions (IFIs) including the European Bank for Reconstruction and Development (EBRD).

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\(^1\) FAO, *How to Feed the World 2050*, 2009

\(^2\) Authors’ calculation using FAO data.
2. Current situation

Overall, there are significant differences in the functioning of the five value chains analysed, which relate mainly to the production structure of raw material and different marketing strategies. In Kazakhstan, existing farming structures include the following categories: agricultural enterprises, peasant (family) farms and subsidiary households. Agricultural enterprises are large-scale operations and are strictly involved in the commercial production of commodities. They own about 44.9 million hectares (ha) of arable land. About 6 200 agricultural enterprises in total account for about 65 percent of Kazakhstan grain production. Approximately 5 000 of these average about 3 000 hectares. Peasant farms are typically family run and are substantially smaller than agricultural enterprises. Out of a total of 200 000 peasant farms, about 146 700 account for 48.7 million ha of arable land. Household farms are small personal subsidiary plots with an average size of 0.15 ha (or about 0.5 acres) and are used to produce crops or livestock chiefly for personal consumption. Kazakhstan’s 2 million household farms produce less than 1 percent of Kazakhstan grain but account for 50 percent of the country’s poultry inventory and 85 percent of the cattle.

Generally, agricultural enterprises and large peasant farms produce wheat and oilseeds. These are well integrated into the supply chain through contracts often involving advance payments (in cash or in kind) and, in some cases, bank guarantees. The utilization of such contracts between farmers and traders/input suppliers has eased the financial constraints that farmers generally face in obtaining access to working or investment capital. In combination with high world market prices, they have led to substantial investments in both sectors, where both the quality and quantity of outputs are rapidly increasing.

In contrast, other sectors such as livestock and fruit and vegetables are dominated mainly by household farms, which function less efficiently. Long-term contracts are used only infrequently in these sectors, and the majority of production is either for self-consumption or direct sale on the market. Overall, the level of investment in these value chains is low as is the quality of production, especially in the case of dairy and beef products.

The remainder of this section briefly describes the structure and functioning of the five value chains.

2.1 Wheat and wheat products value chain

Kazakhstan is an important wheat producer with an annual production ranging from 10 to 22 million tonnes, depending largely on weather conditions. Domestic consumption, including human consumption, animal feed, industrial and other types of use, does not exceed 7.5 million tonnes. Imports do not play a significant role in domestic consumption (Table 1).
Table 1. Wheat supply and demand in Kazakhstan (1 000 MT)

<table>
<thead>
<tr>
<th>Attribute</th>
<th>04/05</th>
<th>05/06</th>
<th>06/07</th>
<th>07/08</th>
<th>08/09</th>
<th>09/10</th>
<th>10/11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area Harvested (1000 HA)</td>
<td>12,000</td>
<td>12,650</td>
<td>12,400</td>
<td>12,900</td>
<td>13,500</td>
<td>14,700</td>
<td>14,500</td>
</tr>
<tr>
<td>Beginning Stocks (1000 MT)</td>
<td>4,216</td>
<td>3,744</td>
<td>3,763</td>
<td>1,647</td>
<td>2,445</td>
<td>1,882</td>
<td>3,607</td>
</tr>
<tr>
<td>Production (1000 MT)</td>
<td>9,850</td>
<td>11,200</td>
<td>13,450</td>
<td>16,450</td>
<td>12,550</td>
<td>17,000</td>
<td>11,500</td>
</tr>
<tr>
<td>MY Imports (1000 MT)</td>
<td>17</td>
<td>36</td>
<td>23</td>
<td>29</td>
<td>113</td>
<td>75</td>
<td>75</td>
</tr>
<tr>
<td>Total Supply (1000 MT)</td>
<td>14,183</td>
<td>14,980</td>
<td>17,236</td>
<td>18,126</td>
<td>15,108</td>
<td>18,957</td>
<td>15,182</td>
</tr>
<tr>
<td>MY Exports (1000 MT)</td>
<td>3,039</td>
<td>3,817</td>
<td>8,089</td>
<td>8,181</td>
<td>5,701</td>
<td>7,800</td>
<td>6,000</td>
</tr>
<tr>
<td>Feed and Residual (1000 MT)</td>
<td>2,700</td>
<td>2,700</td>
<td>2,700</td>
<td>2,700</td>
<td>2,700</td>
<td>2,700</td>
<td>2,700</td>
</tr>
<tr>
<td>FSI Consumption (1000 MT)</td>
<td>4,700</td>
<td>4,700</td>
<td>4,800</td>
<td>4,800</td>
<td>4,825</td>
<td>4,850</td>
<td>4,950</td>
</tr>
<tr>
<td>Total Consumption (1000 MT)</td>
<td>7,400</td>
<td>7,400</td>
<td>7,500</td>
<td>7,500</td>
<td>7,525</td>
<td>7,550</td>
<td>7,650</td>
</tr>
<tr>
<td>Ending Stocks (1000 MT)</td>
<td>3,744</td>
<td>3,763</td>
<td>1,647</td>
<td>2,445</td>
<td>1,882</td>
<td>3,607</td>
<td>1,532</td>
</tr>
<tr>
<td>Total Distribution (1000 MT)</td>
<td>14,183</td>
<td>14,980</td>
<td>17,236</td>
<td>18,126</td>
<td>15,108</td>
<td>18,957</td>
<td>15,182</td>
</tr>
</tbody>
</table>

Source: USDA/FAS, July-June Marketing Year (MY) basis; Food, Seed and Industrial (FSI).

The country exports from 2 to 6 million tonnes of wheat and around 2 million tonnes of wheat flour annually. The value of the wheat export ranges from USD 600 million to USD 1 500 million, while the value of the wheat flour export is around USD 500 million (Figure 1).

**Figure 1. Export of Kazakh wheat and wheat flour, 2000-2011**

Source: FAOSTAT, Agency of Statistics of Kazakhstan.

The Government of Kazakhstan plays an important role in the export market. First, a government agency, the Food Contract Corporation (FCC) purchases a large share of export production. Second, in response to the recent increase in global wheat prices, the government has imposed trade restrictions. For example, during the first quarter of 2008, the government imposed an export ban on wheat to keep domestic prices relatively low.

The most important grain producers are large enterprises or agroholdings. These accounted for 69 percent of total produce in 2011, while peasant farmers produced 30 percent. Household farms accounted for less than 1 percent of total grain produce.

The beginning of the century saw the emergence of different agroholdings in the grain market in the form of corporations established by financial groups investing in land and farms. In certain
cases, they play an active part in all stages of the production and marketing process, from cultivation to processing and sale of final products.

Grains are cultivated on more than 16 million hectares or 77 percent of all cultivated land, mainly in northern Kazakhstan. Spring wheat accounts for the majority of production (81 percent), followed by barley (12 percent) and maize (3 percent) with the remainder comprising rice and other crops (Figure 2).

**Figure 2. Average share of grain crops, 2002-2011**

![Diagram showing average share of grain crops, 2002-2011](image)

Source: Authors’ calculation using FAOSTAT data.

During the 1990s, the transition to a market economy and subsequent crisis resulted in an overall decline in crop area. The agricultural reforms introduced in the mid-1990s, in particular the privatization of agricultural assets, did not improve the situation in the grain sector. However, at the end of the 1990s, grain output bounced back and planting (mostly wheat) gradually increased. In recent years, growth has accelerated and the area cultivated under wheat has grown by almost 2 million hectares from 11.9 million hectares in 2006 to 13.8 million hectares in 2011, representing a 16.8 percent increase. Wheat and flour prices were the principle drivers, in turn triggering increased investment in the sector (see also section 3.3). These investments led grain producers to increase use of machinery and adopt modern cultivation techniques, such as water-saving technologies, as means to heighten efficiency.³

³ The government has also actively promoted the use of modern technology by providing subsidies linked to the adoption of specific cultivation techniques.
Despite this recent, year-on-year increase in productivity, there remain large variations in wheat yields with those in Kazakhstan among the lowest in the world\(^4\). Wheat yields fell from 1.3 t/ha in 1992 to 0.6 t/ha in the mid-1990s, then gradually increased to 1.0 t/ha on average between 2000-2004, and to 1.2 t/ha in 2011 (Figure 3). In comparison, the wheat yield in Canada, a country that has similar climatic conditions, is around 2.8 t/ha.

The key operator in the grain market is the FCC, a government-led agency involved in state wheat procurement and responsible for part of grain exports. In 2011, the FCC purchased about 4.5 million tons of wheat. In addition to the FCC, several private international and domestic companies trade on the market.

**Figure 3. Wheat output and yield, 1992-2011**

![Figure 3: Wheat output and yield, 1992-2011](image)


The third largest users of wheat are flour mills. There are approximately 650 milling companies with a combined annual output of 6 million tons active in Kazakhstan. Finally, pasta-producing companies also buy wheat.

In general, wheat contracts between grain producers and grain buyers involve advance payments. If prepayment does not take place the contract becomes null and void. Such contracts reduce the risk of non-payment and partially compensate for the weakness of the agricultural finance system. In other cases, grain producers receive advances for the coming harvest from financiers against a bank guarantee.

### 2.2 Oilseed value chain

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\(^4\) Although the average yield of wheat is relatively low, the quality of production is high, as Kazakhstan produces a large share of good-quality, grade-3 wheat, especially in warmer seasons. This good-quality wheat produces good quality flour which has a positive impact on exports.
Oilseed production in Kazakhstan mainly comprises sunflower production in the east, rapeseed in the north, soybean in the south-east and safflower in the south. Cotton production in the south also contributes to oilseed production. Oilseed production has increased significantly since the mid-1990s, and in 2011 reached a historical high of 1.1 million tonnes for 1.8 million ha planted, compared to 0.4 million tonnes for 0.33 million ha planted in 2001 (Figure 4). A key driver during the last seven years was rapid expansion in the area planted with oilseeds, triggered by an increase in world market prices. A sharp increase in the price of linseed during the last three years should also be noted.

Figure 4. Oilseed production volumes, harvested area and average yields

The evolution for individual oilseed crops is shown below (Figure 5) and highlights the decline of cotton seeds in relation to increases for other oilseed crops. The share of rape, soybean and safflower seeds in total oilseed production increased from 1 percent, 2 percent and 6 percent in 2001 to 13 percent, 12 percent and 12 percent in 2011 respectively, while the share of cotton seed production decreased from 56 percent in 2001 to 9 percent in 2011. During the last 10 years, production of sunflower seeds accounted for approximately one-third of total oilseed production. Most notable is the increase in linseed as a share of total oilseed production, which grew from 0.1 percent in 2005 to 22 percent in 2011, following world market demand.

Source: FAOSTAT, Agency of Statistics of Kazakhstan.
Three types of farms produce oilseeds: enterprises (companies with limited liability or cooperatives), peasant farms and household farms. However, as in the case of wheat, household farms represent only a marginal share of total oilseed production (about 0.5 percent) with farm enterprises and peasant farms the main producers. Compared to traditional grain production, smaller peasant farms account for a larger share of oilseed production, as agricultural enterprises focus mainly on traditional grain production, in particular wheat. Nevertheless, in recent years, enterprises have increased their production of oilseeds, mainly rapeseed and sunflower, reflecting increasing export demand.

Exports of oilseeds have increased rapidly in line with production growth over recent years (Figure 6). The main exported crops are rapeseed and linseed, which are exported mainly to Europe.
In recent years, Kazakhstan has imposed several temporary export bans with the purpose of lowering domestic oilseed prices (Table 2).¹

Table 2. Temporary bans on export of oilseeds and their processed products

<table>
<thead>
<tr>
<th>Date</th>
<th>FEACN code</th>
<th>Document</th>
</tr>
</thead>
<tbody>
<tr>
<td>From 23 October 2007 to 1 February 2008</td>
<td>1206 00 (sunflower seeds)</td>
<td>Resolution of the Government of the Republic of Kazakhstan dated 20 October 2007 No. 976</td>
</tr>
<tr>
<td>From 13 September 2008 to 1 April 2009</td>
<td>1205 (oilseed rape seeds)</td>
<td>Resolution of the Government of the Republic of Kazakhstan dated 28 August 2008 No. 777</td>
</tr>
<tr>
<td></td>
<td>1507 (soybean oil)</td>
<td>Resolution of the Government of the Republic of Kazakhstan dated 8 October 2008 No. 930</td>
</tr>
<tr>
<td>From 1 October 2008 to 1 April 2009</td>
<td>1206 00 (sunflower seeds)</td>
<td>Resolution of the Government of the Republic of Kazakhstan dated 8 October 2008 No. 930</td>
</tr>
<tr>
<td>From 27 October 2008 to 1 April 2009</td>
<td>1201 00 (soybean)</td>
<td>Resolution of the Government of the Republic of Kazakhstan dated 8 October 2008 No. 930</td>
</tr>
<tr>
<td></td>
<td>1207 99 (other seeds)</td>
<td>Resolution of the Government of the Republic of Kazakhstan dated 8 October 2008 No. 930</td>
</tr>
</tbody>
</table>


Despite the rapid growth in oilseed exports, Kazakhstan remains a net importer of oilseeds. The main imported crops over the past 15 years have been sunflower, soybeans and, to a lesser extent, rapeseed. The main countries supplying oilseeds to Kazakhstan are the Russian Federation and, in recent years, Ukraine. Except in some years, these countries accounted for more than 95 percent of total imports.

¹ Note that 1999 data are unreliable as they vary widely among different sources.
² In addition to export restrictions, the government also imposed the law “On Regulation of Trading Activities”, which stipulates that the sale of “socially important food products” must occur within set limits in terms of mark-up.
Marketing channels depend on the type of oilseeds:

- **Sunflower and safflower**: Local oilseed processors buy almost all domestic production of sunflower and safflower and import additional raw material from the Russian Federation and Ukraine. Some contracts with oilseeds producers include prepayments but, according to anecdotal evidence, processors are trying to abandon such schemes due to frequent contract breaches.

- **Soybean**: The main consumer of domestic soybeans is the company Vita Soy JSC, which purchases soybeans through its procuring subsidiaries. Contracts typically include partial or total prepayment (from 20 percent to 100 percent). Prepayment is done partly in kind (seeds, fertilizers, agricultural services), and partly in cash.

- **Cotton**: Cotton processors separate the seeds from the cotton fibre and then sell the seeds to oil processing plants. Since by law cotton-processing units cannot engage in any business activity unrelated to the primary processing of raw cotton into cotton fibre, cotton seeds are not processed in-house and it is illegal for processors to retain ownership of the seeds themselves. Accordingly, the number of contracts for future delivery with prepayment (in the form of seed provision) has decreased significantly.

- **Rapeseed**: Unlike other oilseeds, rape is not only consumed domestically, but is exported. The main exporters are traders who buy rapeseeds from producers to export them in larger, commercial batches. In general, rapeseeds are traded through normal supply contracts.

Traditionally, sunflower processing has dominated the processing industry, although rapeseed and soybean processing has developed rapidly over the last five years due to the construction of new processing plants (Figure 7).

**Figure 7. Vegetable oil production volumes**

![Vegetable oil production volumes chart](chart.png)

*Source: FAOSTAT.*

Vegetable oil imports (predominately sunflower and safflower oil) are presented here by crop type (Figure 8). The main importing country is the Russian Federation (84 percent of all imports in 2009). Exports of vegetable oil are limited.
Almost all oilseed processors have developed their own in-house distribution structures to enable them to sell vegetable oil. These structures incorporate bottling and logistics facilities, contracts with retailers and, frequently, their own brands. These brands are sold in all main supermarkets and retail outlets, without the intervention of other downstream players, such as wholesalers, food companies or distributors.

### 2.3 Fruit and vegetables value chain

Production of fruit and vegetable occurs predominately in the north and south (south-west) of Kazakhstan. Vegetables such as carrots, cabbage, beets and cucumbers are produced in the north, while thermophilous plants, such as melons, are grown in the south. The production of fruit and vegetables is constrained by water availability and irrigation conditions, as both are generally extremely demanding in terms of moisture content in the soil and air.

Overall, the area planted with vegetables has increased significantly since the beginning of the 1990s. The average area in 1992 was 116 800 ha but increased to 209 700 ha by 2011 (Figure 9).
However, there are large differences between crops and the relative share of vegetables in relation to potatoes has risen (Figure 10). This is due to the increase in household incomes, which has led to a decrease in the share of potatoes in people’s diet, although overall production has increased. There has also been a significant increase in total melon production, of which one-quarter are muskmelons.

Figure 9. Changes in planted areas and total harvest of vegetables and melons, 1986-2007

Figure 10. Breakdown of fruits, melon, vegetable and potato production, 1992-2011
Data on evolution of yields show that overall growth of vegetable production results from a combination of intensification of production and increase in the planted area. The growth in yields for the most important vegetable crops is shown below (Table 3). This is due primarily to the appearance on the market of (and improved access to) high-quality imported seed material\(^7\) and more efficient equipment.

Table 3. Actual yields of fruit and vegetable crops (tonnes/ha)

<table>
<thead>
<tr>
<th>Crop</th>
<th>Average yield according to Agency of Statistics of Kazakhstan data</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1999</td>
</tr>
<tr>
<td>Tomatoes</td>
<td>14.8</td>
</tr>
<tr>
<td>Cucumbers</td>
<td>12.4</td>
</tr>
<tr>
<td>Onions</td>
<td>12.6</td>
</tr>
<tr>
<td>Carrots</td>
<td>12.8</td>
</tr>
<tr>
<td>Cabbage</td>
<td>16.9</td>
</tr>
<tr>
<td>Potatoes</td>
<td>10.8</td>
</tr>
</tbody>
</table>

Source: Agency of Statistics of Kazakhstan, interviews with producers and the AIK Company (a supplier of drip irrigation systems).

Household farms account for a considerable percentage of fruit and vegetables production, but over the last 10 years this percentage has declined. The expansion of areas planted with fruit and vegetable crops on peasant farms, higher yields and the creation of new peasant farms have significantly increased the percentage of fruit and vegetable products produced by the latter. Overall, yields are substantially higher for peasant farms and household farms than for agricultural enterprises.

Kazakhstan is a net exporting country of all types of fruit and vegetables except potatoes and apples, which are exported mainly to the Russian Federation. Produce is frequently exported off-season when domestic production reaches its minimum. This seems to confirm the view of study informants of the existence of a fairly large volume of illegal imports from neighbouring countries (mainly China), which is re-exported to the Russian Federation. The volume of imports not taken into account by official sources was estimated based on survey data, customs statistics and data on the total harvest of vegetables by individual farms and agricultural enterprises (Figure 11). Illegal imports represent a considerable share of domestic consumption (including exports) for all fruit and vegetables.

\(^7\) Seed imports increased significantly in recent years. In 2006, 11.7 tonnes of vegetable seeds were imported, increasing to 101 tonnes in 2008. This is due partly to a tightening of border control, in particular with China.
Figure 11. Estimate of the percentage of “grey” imports, based on data for 2008

Source: UN Comtrade, RK CCC, Agency of Statistics of Kazakhstan, survey of households, and own estimates (100 percent is domestic consumption: local production + imports - exports).

In general, producers sell their products to wholesalers. Only a small share of farm enterprises sells production at the wholesale market or directly to supermarkets. Sales to restaurants or cafés are rather uncommon. Processing of fruit and vegetables is also limited as only 3 percent of production goes to the processing industry, despite a substantial increase in the production of processed fruit and vegetables products in recent years (Table 4).

Long-term contracts with fixed prices are very rare. The most common form of contracting is immediate shipment to the buyer and cash payment. With delivery to order, the carrier may require as much as 50 percent of advance payment. However, the percentage of deliveries to order is small. Large supermarkets pay their suppliers between 14 and 30 days after delivery and reserve the right to receive a 10 percent to 20 percent discount from the supplier if the vegetables are not sold within a week. In the case of government purchases, contracts last between six months and one year and in general include a 30 percent advance payment, while the balance is paid upon shipment of the goods.
Table 4. Changes in amounts of fruits and vegetables processed, 2001-2011 (thousands of tonnes)

<table>
<thead>
<tr>
<th>Types of products</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canned vegetables</td>
<td>-</td>
<td>-</td>
<td>1.7</td>
<td>2.4</td>
<td>4.3</td>
<td>4.3</td>
<td>5.1</td>
<td>5.6</td>
<td>3.6</td>
<td>3.2</td>
<td>8.1</td>
</tr>
<tr>
<td>Canned fruits</td>
<td>-</td>
<td>-</td>
<td>0.5</td>
<td>2.1</td>
<td>0.8</td>
<td>0.9</td>
<td>1.2</td>
<td>1.2</td>
<td>1.5</td>
<td>0.9</td>
<td>0.6</td>
</tr>
<tr>
<td>Canned tomatoes</td>
<td>-</td>
<td>-</td>
<td>4.6</td>
<td>8.6</td>
<td>10.1</td>
<td>12.8</td>
<td>12.4</td>
<td>8.4</td>
<td>12.4</td>
<td>12.8</td>
<td>8.9</td>
</tr>
<tr>
<td>Vegetable and fruit juices (thousands of litres)</td>
<td>39.9</td>
<td>45.2</td>
<td>56.9</td>
<td>77.3</td>
<td>99.4</td>
<td>130.0</td>
<td>168.0</td>
<td>118.8</td>
<td>136.8</td>
<td>180.1</td>
<td>223.8</td>
</tr>
<tr>
<td>Vegetables, other than potatoes</td>
<td>3.4</td>
<td>2.5</td>
<td>6.5</td>
<td>12.5</td>
<td>15.8</td>
<td>18.2</td>
<td>19.2</td>
<td>13.6</td>
<td>15.6</td>
<td>17.9</td>
<td>18.5</td>
</tr>
<tr>
<td>Processed and preserved fruits and nuts</td>
<td>0.6</td>
<td>0.2</td>
<td>0.7</td>
<td>2.8</td>
<td>1.7</td>
<td>4.0</td>
<td>3.6</td>
<td>2.0</td>
<td>2.5</td>
<td>2.8</td>
<td>2.8</td>
</tr>
</tbody>
</table>

Source: Agency of Statistics of Kazakhstan.

2.4 Milk and beef value chain

In the early 1990s, total production of meat of all types amounted to 1.3 million tonnes, including beef, which amounted to more than 600 000 tonnes. By the end of the 1990s production had dropped by 50 percent due to the transition to market-based forms of farming. In 2011, total production reached 900 000 tonnes, including 400 000 tonnes of beef (Figure 12), representing 42 percent of total meat production. Pork comes second only to beef, but it should be noted that the majority of pork is used for the production of sausages. The production of other types of meat – lamb, chicken and horsemeat – is also increasing. Although the share of beef in total meat production is decreasing, beef production remains dominant and determines the further development of Kazakhstan’s meat sector.

Figure 12. Meat production by type of meat, 1992-2011

Source: FAOSTAT; Agency of Statistics of Kazakhstan.
In Kazakhstan, *per capita* meat (in total) and beef consumption is traditionally one of the highest among countries of the Former Soviet Union (FSU) (Figure 13). It is also higher than *per capita* meat/beef consumption in Eastern Europe and various parts of Asia, including the countries of Central Asia. However, it should be noted that consumption of household farms’ own production represents a large share of Kazakhstan’s meat consumption in general, and beef in particular. A considerable share of meat consumption goes through informal supply channels.

**Figure 13. Meat and beef *per capita* consumption in selected countries and regions (average for 2005-2009)**

![Graph showing meat and beef consumption](image)

*Source: Authors’ calculation using FAOSTAT data.*

Most meat consumed in Kazakhstan is produced domestically, and the share of imports does not exceed 2 percent (Figure 14). Almost all production (and limited imports) is consumed domestically. The volume of exports is still very insignificant.
For meat products and sausages, the situation is somewhat different: the share of domestic production in total consumption is lower, with a share of imports of 36 percent and 40 percent respectively (Figure 15). Practically all domestically manufactured and imported meat products and sausages are consumed within the country; exports are insignificant and do not affect the balance of consumption.
Although the share of imports among meat products and sausages is significant, in view of the overall volume of meat consumption, the share of imports in the total meat market (including fresh and frozen meat, meat products and sausages) is negligible (Figure 16). Even if one assumes that imported meat, meat products and sausages are twice higher than indicated in official statistics (i.e. taking into account illegal imports), the share of imports in the meat market as a whole does not exceed 5 percent.

During the last 20 years, the production of milk in Kazakhstan went through a recession in the mid-1990s and then almost returned to the level of production of the Soviet period. In 2011, 5.2 million tonnes of milk (Figure 17) were produced. More than 99 percent of produced milk is cow milk; the milk of sheep, goats and camels accounts for less than 1 percent of total milk production in the country.
About 70 percent of all milk and dairy products consumed in Kazakhstan are produced locally (Figure 18). A stable trend in recent years shows a steady increase in imports of milk and dairy products. In 2006, the share of imports in total consumption was 23 percent; by 2010 it had increased to 30 percent. Milk production and consumption also increased during this period. Almost all domestically produced milk and dairy products are consumed domestically. Exports are very limited. In addition, 90 percent of the milk produced in the country is produced by household farms, which consume a significant portion of the milk they produce. The Government of Kazakhstan has supported investments for the construction of larger commercial dairy farms, particularly through the Kaz-Agro National Holding and its affiliated companies. A dozen such projects have received investments to date. However, the milk from newly constructed dairy farms appears to be cost-effective only if the dairy farm has its own processing unit.
Three different types of farms are engaged in the production of milk and beef. The sector is dominated by household farms, which hold more than 85 percent of the livestock inventory and account for more than 85 percent of total meat production and 90 percent of total milk production in the country. These farms usually have the full range of animals (three to five cattle, a dozen sheep, goats, etc.) and depend on communal grazing, with rotational herding duties or a paid shepherd and purchased feed and fodder. Household farms were already engaged in livestock production during the Soviet era and profited from synergies with kolkhozes.8 Household farms would deliver livestock and dairy products to kolkhozes so that the latter could meet their production target, while kolkhozes would let household farms use summer pastures, winter forage, mixed concentrate feed and veterinary services.

Peasant farms hold approximately 10 percent of the livestock inventory. These farms are usually run or owned by former kolkhoz members, often directors and leaders, who managed to secure winter and/or other sheds in the pastureland, as well as tractors and equipment, during the privatization of kolkhoz assets. According to national statistics, the livestock inventory of these farms demonstrates the highest growth rate, while the two other categories are less important.

Commercial enterprises hold the remaining 5 percent of the livestock inventory.9 Generally, these are large-scale farms built on the remnants of cooperative farms of the Soviet era. Independent landowners constitute another class in this sector. They hold 49-year leases of pastureland, which

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8 Kolkhozes were the collective farms of the Soviet Union. They existed along with state farms (sovkhozes). Kolkhozes and sovkhozes were the two components of the socialized farm sector in the Soviet Union.

9 Official statistics are collected during twice-yearly inventories through official reports from peasant and enterprise farms, as well as other market and industry players. However, beside official livestock production, there is evidence of an extensive informal livestock production, for which no data are available. Moreover, peasant and enterprise farms tend to over-report production figures to maximize the amount of subsidies they receive, while household farms tend to underreport to avoid taxation.
they lease out for grazing or hunting. Furthermore, there are also a number of remaining state farms, which belong to so-called plenzavodi (breeding farms) or research institutes.

The majority of milk and meat produced by household farms is for self-consumption or direct sale (in some cases after basic processing). Only 35 percent of estimated annual milk production is processed in a proper processing plant.\textsuperscript{10} In general, dairy companies source milk through a network of middlemen and women. There is intensive competition between the different dairies for raw milk, especially in the Almaty and Astana regions. Processing companies in Almaty also buy milk from Kyrgyz intermediaries throughout the year (often in the form of illegal imports).

The traditional types of meat are horse and sheep meat. However, in recent years beef has emerged as the type of meat with the most rapid increase in quality and quantity. It also seems to hold the best prospects in terms of export potential. In general, two types of beef are sold for consumption: animals of 1 to 1.25 years old (3-5 months stall fed) and animals of 2 to 2.5 years old (usually two years of pasture and 3-5 months stall fed). Most animals are held by household farms, which sell them to intermediaries. The latter slaughter the animals on-farm and sell them on open markets or supermarkets.

2.5 Poultry meat value chain

The poultry sector is one of the most dynamic agricultural sectors worldwide (Figure 19). Poultry is indeed the most accessible and expanding source of protein for the population of all income strata.\textsuperscript{11}

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{poultry_production.png}
\caption{World poultry production, million tonnes}
\end{figure}

\textit{Source: FAOSTAT.}

\textsuperscript{10} Traditionally horses, sheep and camels were an important source of milk, but this has been largely replaced by cow milk. Nevertheless, there is still some production of other types of milk, mainly sold on informal markets (sales from home, stalls along the road or on the local market).

\textsuperscript{11} Globally, the consumption of poultry is 34 percent of all meat consumed every year. This figure increases by 1 percent annually.
In Soviet times, Kazakhstan was the third largest poultry producer in the country, after Russia and Ukraine, but with higher poultry population growth rates than the first two republics. The transformational shock of the early 1990s led to a sharp reduction in poultry production and the overall degradation of the industry. However, since 1996 the poultry population has grown and today consists of over half of the 1991 figure (Figure 20).

**Figure 20. Poultry population in Kazakhstan, million heads**

Source: Agency of Statistics of Kazakhstan.

Poultry production is growing even more rapidly today, mainly due to improvements in the productivity of the sector (Figure 21).

**Figure 21. Poultry production in Kazakhstan**

Source: OECD database; Agency of Statistics of Kazakhstan.
In Kazakhstan, as in most post-Soviet countries, large industrial-type businesses/poultry farms dominate the production of poultry meat. The sector is quite concentrated, with more than 50 percent of production concentrated around the top three companies, and more than 80 percent around the top five. Four out of five of these companies are located in the Almaty region (i.e. more than two-thirds of total capacity). The concentration of the industry has increased dramatically over the last 20 years, with the number of broiler enterprises decreasing from 23 in 1990 to 14 today. The sector is not only highly concentrated but also polarized: industry leaders use modern equipment and advanced technology while, at the other extreme, some companies use obsolete production facilities. The territorial concentration of production imposes additional demand on logistics and infrastructures.

Industrial poultry producers focus on the world’s main breeding crosses (Ross, Hubbard, Cobb), supplied from Europe and the Russian Federation. Domestic poultry breeding production is unable to cope with demand or the quality of required breeding material. On average, only 8 percent of the poultry population in Kazakhstan comprises breeding birds, but it should be noted that almost half of this population is found in rural households, where the proportion of breeding birds is much lower than in poultry farms/enterprises. In the foreseeable future, the country will most likely depend on imports for cross vaccines, premixes and other technological components.

In recent years, consumption of poultry has increased much faster than the national production. Imports have therefore increased sharply (Figure 22) despite significant under-utilization of existing poultry production units.

**Figure 22. Imports compared to production of poultry in Kazakhstan**

![Graph showing imports compared to production of poultry in Kazakhstan](image)

*Source: Agency of Statistics of Kazakhstan; UN COMTRADE.*

The structure of imports explains the high proportion of imported poultry meat in national consumption. Most imported poultry comes from the United States in the form of cheap, frozen chicken legs (as imported at the lowest average contract price). Imported chicken legs do not

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12 In 2009, concentration rose further due to the closing of LLP Ruby Rose Agricole.
compete with domestic poultry meat, which is of higher quality and targets different strata of consumers. It can be assumed that the volume of imports of cheap chicken meat from the United States is a function of income levels: the smaller the percentage of low incomes in the population, the smaller the imports of US chicken legs.

Despite the fact that Kazakhstan is one of the world’s largest grain producers and one of the world’s largest exporters of flour, its feed mill industry is insufficiently developed. In the Former Soviet Union, Kazakhstan ranked fourth in production of animal feed and third in production of compound feed for poultry, after Russia and Ukraine. In 1997, production fell by 95 percent compared to the beginning of the 1990s. In the late 1990s, poultry production started to grow again and most poultry producers prepared feed for their own use, but with poor results. The performance of the poultry sector is particularly sensitive to the quality of feed: deficiencies in the production of quality feed seriously affect the efficiency of the sector.

The consumption of poultry in Kazakhstan is growing more rapidly (Figure 23) than the general consumption of meat. The share of poultry consumption in total meat consumption increased from 4.5 percent in 1995 to 12 percent in 2010. However, this share remains significantly below the levels registered in other countries.

Figure 23. Meat consumption structure in Kazakhstan

Source: OECD database.
3. Challenges

3.1 Shortages in the supply of raw material

Most studies mention the shortage of quality raw material as an important constraint for the development of the sector. In the oilseed sector, for instance, processing plants are not able to operate efficiently because the supply of raw material is not sufficient. In general, the supply of local raw material is only adequate to meet seven months of production or less, which results in low turnover and liquidity problems and, ultimately, makes investments less attractive. In the dairy sector, rural households produce the majority of milk in the country, and could in theory meet the demand of all domestic dairy plants. One challenge is to collect milk from a large number of small farms, which implies the development of a complex collection system with a proper network of collection points with cold tanks. Another challenge is to collect quality milk from a multitude of small farms with poor on-farm hygiene and facilities (milking equipment, sheds, etc.). As a result, only 35 percent of the estimated annual domestic milk production is processed. Dairy processing companies are importing milk from neighbouring countries. In Almaty, some dairies buy year-round milk from Kyrgyz intermediaries. Kyrgyzstan’s veterinary services issue export permits for around 50,000 litres of milk per day during pick season. However, it is estimated that approximately another 50,000 litres per day are illegally exported to Kazakhstan. In order to guarantee a more steady supply of quality milk, dairy processing companies often own their own (large) dairy farms. However, to date, these farms suffer from a lack of investment, and frequently changing, inadequate and inexperienced management, the latter of which appears to constitute the greatest challenge.

In addition, there are major seasonal fluctuations in the supply of raw material. For example, there are important seasonal fluctuations for milk production related to the calving season, especially as most milk is produced by a great number of small household farms. Fruit and vegetable production is also highly seasonal as only a very small proportion of production is cultivated in greenhouses (approximately 1,000 ha or 1 percent of the planted area of fruit and vegetable crops).

3.2 Food quality and safety concerns

The poor quality of both agricultural raw material and processed food products is an important constraint on the development of modern value chains in Kazakhstan. The most important concerns with respect to food quality and safety relate to the production of sensitive products, such as meat and milk. These products are mainly produced in small household farms. For example, with respect to poultry production, more than 50 percent of production takes place in household farms. The production of beef and dairy is even more concentrated in the household farming sector, which accounts for more than 80 percent of the livestock inventory and is responsible for more than 85 percent of total meat production and 90 percent of total milk production in the country.

In general, small-scale farmers produce mainly for home consumption and sell surpluses on markets. Animals from the household sector are slaughtered at home almost without veterinary supervision and/or inspection. The produce sold on markets is transported under sub-optimal conditions.
conditions to these markets, where it is usually presented without cooling. At markets, the veterinary department inspects products on-site. However, for products such as dairy produce, the inspection process is mainly organoleptic and does not test, for example, for salmonella and E. Coli (meat) or brucellosis (dairy).\textsuperscript{14} In some cases, the milk used by dairy companies and collected through intermediaries is also submitted only to an organoleptic check. In other cases, intermediaries also measure the pH, temperature and/or perform an alcohol test. It is often hard for these enterprises to make the necessary investments to modernize as they lack economies of scale.

Public veterinary assistance is relatively weak, especially in the poultry sector, although it has improved in recent years due to the outbreak of Highly Pathogenic Avian Influenza (HPAI). There is a lack of qualified public veterinarians and therefore most preventive and even inspection tasks are tendered out to local private veterinarians.

In addition to concerns about food quality and safety in small household farms, there are also concerns related to the meat production of large-scale (industrial) farms. For example, in the poultry sector, the concentration at all stages of production in each company makes it difficult to control infectious pressure and diseases. In addition, there are serious concerns with respect to the feed concentrates used in the poultry industry, as there are no capable, certified and independent feed-testing facilities in the country that could control for contaminants such as salmonella and heavy metals.

Quality and safety problems are not limited to the farm level, but also exist in the processing industry, with some companies encountering difficulties in implementing international quality and food safety norms. In some cases, certificates of Good Manufacturing Practices (GMP) and Good Hygiene Practices (GHP), Hazard Analysis Critical Control Points (HACCP) and ISO are displayed in company offices, but there is no evidence that such production principles are complied within the day-to-day activities of these companies. For example, in the poultry sector, most slaughterhouses do not apply the GMP, GHP and HACCP principles. In addition, most existing slaughterhouses do not have facilities to further process feathers, blood and slaughter offal into meal and the latter are often buried, which causes risks to public health.

This failure to comply with international and national food safety and quality standards is affecting the development of most food chains. For example, most local producers of canned vegetables cannot compete with imports, mainly because of lower quality, narrow assortments and poor packaging. This low quality is the result of a lack of working and investment capital in most processing companies (see section 3.3) and the low skill level of most local producers (see section 3.4).

Not all sub-sectors have serious problems with respect to food quality and safety. For instance, in the wheat and oilseed sectors, these problems are relatively limited. It should be noted that there have been some improvements in the quality and safety regulations in these two sectors. For

\[\text{KZT 500} \] for small ruminants. However, in general, people do not use these facilities and still slaughter their animals at home because they do not want bear the additional costs. Most families sell when they need cash. It is often not the farmers who bred the animals who finish them for the market but a trader or a farmer specializing in fattening.

\textsuperscript{14} Occasionally, a milk ring test for Brucellosis is performed, but this test does not work on cream, butter or curds. The market veterinarians therefore have to rely on permits and declarations issued by local veterinarians that have inspected and tested the cows at the farm.
example, for oilseeds, the law on “Requirements for the safety of fat and oil products”, which is intended to establish safety standards for fat and oil products including processing, came into force on 1 August 2010. These include regulations with respect to technological/equipment requirements, quality testing methodologies, transport and storage conditions, and technical requirements related to crop cultivation, harvesting and delivery to the plant. Some efforts to adjust existing quality standards to international standards have also been made in the wheat sector. Nevertheless, in these two sectors, investments in food quality and safety should continue, as both act as a constraint on the development of export markets. For example, German traders reported quality issues with Kazakh rapeseed exports. With respect to wheat production, Kazakh producers will need to comply with more stringent transport and packaging standards if they want to increase their exports to China.

Another issue related to food safety and quality is limited traceability in the various food chains. At the producer level, there is no fully functioning identification and registration (I&R) system for livestock products. In 2003, the Government tried to introduce an I&R system, but the results were unsatisfactory as many veterinarians left tags with farmers without checking whether they were properly used afterwards. Moreover, many tags fell out quickly and there was no system to order replacement tags. Traceability of food products is also very poor in the downstream segments of food chains. For example, for frozen poultry products, it is often impossible to track the origin of products on the shelves of supermarkets, as in many cases the name of the manufacturer cannot be found on the package.

Potential organizational innovations to improve the quality of raw materials supplied by agricultural producers are vertical integration or coordination (VC) mechanisms. These typically include contracts with advance payments or bank guarantees. These have already been implemented successfully in the grain and oilseed sectors, but in other sectors such as dairy or fruit and vegetable, they are less widespread as a result of credit constraints in the downstream sectors. However, even in these sectors, there are a few examples of vertical integration and improvement in quality of raw materials. For example, for the production of tomato paste, the processing companies usually undertake production of the tomatoes themselves, as very few agricultural producers have the skills to grow specific varieties and qualities on a contract base.

\[\text{15}\] In Kazakhstan a number of livestock diseases survive that are dangerous to both animals and humans. In general, control of veterinary standards is weak as public veterinary services are understaffed and underequipped.

\[\text{16}\] Full vertical integration is not always beneficial for food safety. For example, in the poultry sector, most activities are vertically integrated within one unit/company, as was the case in former Soviet-style poultry enterprises. This makes it difficult to control infection pressure and diseases, and poses risks in terms of biosecurity.
3.3 Access to inputs and finance

At the farm level, access to inputs and credit depends on the type of farm and the sector. In general, medium and large farm enterprises have less difficulty to access credit, especially seasonal credit for crop production. For livestock production, for which a longer repayment period with an initial grace period is required, it is more difficult to obtain credit. Smallholders have the most serious difficulties to obtain access to credit. For example, in cattle production, many smallholders do not have enough working capital to buy sufficient feed or fodder for their animals and are forced to slaughter or sell them at a sub-optimal weight. In some cases, smallholders have access to informal credit from intermediaries (usually from the same village) who provide credit to feed animals and prepare them for slaughter.

Problems with feeding animals relate to the land reforms of the 1990s. During the Soviet period, the Kazakhstan livestock system was based on a grazing system with winter and summer pastures, production of hay in natural pasture hayfields, production of forage and supplementary feeding, based on either locally produced or imported grain, cottonseed and sunflower cake. Following the break-up of the Soviet Union and the dismantling of the kolkhozes and sovkhozes, the pasture management system, which was mainly controlled by the kolkhozes and the sovkhozes, fell apart. The land reform divided pasture land into communal land and state land reserves with part of the pasture land rented to private individuals on long-term lease contracts. This reduced the mobility of livestock and quickly led to overgrazing in pastures closest to villages and the underuse and pasture degradation of distant pastures, which may have important environmental implications and could jeopardize future productivity. In order to improve the situation, better pasture management systems should be introduced.

In the poultry sector, the production of balanced feed is normally a highly specialized activity. However, in Kazakhstan, commercial feed milling is an infant industry and most producers make their own feed. The availability of a suitable source of protein is limited since one monopoly company controls the trade in soya and soya meals, which results in restricted availability and high prices.

In the fruit and vegetable sector, producers also encounter difficulties in obtaining financial resources, either for investment purposes or for seasonal works. The prices of inputs such as fertilizers and fuel has increased significantly in recent years, making their purchase even more prohibitive for farmers. However, the use of imported high-quality seeds has largely increased in recent years (although this apparent trend could be partly the result of improvements in trade data).

In contrast, recent years have seen increased investment in the grain and oilseed sectors. There are several reasons for this increase. First, the recent spike in wheat prices drew the attention of banks, and corporate and individual investors, and encouraged them to invest in the sector. There has been a substantial increase in the use of high-performance machines (combines, cultivators), following the passing of new leasing laws at the beginning of the 2000s. As a result, the area under modern cultivation techniques has increased rapidly. For example, in northern Kazakhstan, the area cultivated under moisture-saving methods increased from 0.5 million ha in 2006 to 2.5 million ha in 2009, representing 46 percent of all cropland in the region. Second, in the grain sector, the state has played a role in expanding the working capital of farms by offering

17 This is usually less than 370-400 kg.
programmes of state compensation for production costs. This financial support for priority crops has become the most popular form of public aid for grain producers. Finally, processing companies and traders often use interlinked contracts with farms to help them overcome financial constraints. For example, wheat contracts usually involve advance payments and/or grain promissory notes (i.e. bank guarantees that protect the buyer and the seller from, respectively, non-delivery and non-payment).

In the cotton sector, a system of interlinked contracting enabled ginneries to supply seeds to farmers, who then received reduced prices at the time of the harvest. According to the Kazakhstan Cotton Association, interlinked contracting was the main driver behind the growth of the cotton industry between 1997 and 2006. However, the recent law, “On the Development of the Cotton Industry”, made it illegal for ginneries to own cotton seeds, thereby disrupting these contracting mechanisms. As a consequence, cotton producers have experienced problems in pre-financing the purchase of seeds, which has led to a decrease in the planted cotton area.

Overall, the majority of stakeholders across the various food chains experience difficulty in obtaining medium and long-term finance. Even in the grain and oilseeds sector, where most large-scale producers have in general good access to seasonal working capital, some farmers still encounter difficulties in raising longer-term finance for investments in new technologies. It is estimated that approximately 50 percent of wheat is grown and harvested using outdated and obsolete machinery due to farmers’ financial and economic weakness. The upgrading of existing machinery proceeds at a very slow pace and is driven mainly by large and medium-sized farms, where only 2 to 3 percent of machines are replaced each year by modern and more efficient ones. Some modernization investments are partly financed by state subsidies (e.g. the purchase of animals for pedigree breeding in the cattle industry). The state also gives (large-scale) farmers the possibility to lease equipment through public leasing companies. Typically, smallholders do not have access to credit for investments, even in the form of micro-credit, as they usually do not have acceptable collateral: most of are landless and houses in the villages are not accepted as collateral. Only recently has the FCC, as part of KazAgro, begun to provide micro-credit through a network of rural consumers’ cooperatives. This phenomenon is relatively new and further analysis is needed to establish whether it brings credit to those who need it.

In the processing industry, companies have only limited access to credit to invest in new technologies, although there are large differences between sectors. In the oilseed sector, for example, prices were relatively high in recent years, and processing companies have been able to modernize equipment. In other sectors, processing companies face liquidity constraints as a result of frequently delayed payments on the part of the retail sector. For example, in the dairy sector, each (large-scale) processing plant has its own distribution system and is responsible for placing its products in the supermarket and controlling expiry dates. Payments from supermarkets to the dairy company only take place after sales of the product and are often seriously delayed. In the fruit and vegetable sector, the processing industry lacks both working and investment capital, for example, for investments in appropriate packaging and quality. The lack of working capital at the industry level has been identified as the principle reason behind the limited vertical integration of the fruit and vegetable supply chain.

3.4 Human capital
All sectors and levels of the value chains suffer from an absence of technical knowledge and managerial capacity. The country lacks suitable academic and practical training institutes to disseminate technical knowledge, which leads to problems when new technologies are introduced.

In processing companies this is reflected in the poor quality and variety of products. In general, the added value is small; for example, in the poultry industry only a few companies produce “ready-to-cook” products.

Human capital is very poor in the primary sector. This is particularly the case in sub-sectors with a large proportion of smallholders, such as the dairy sector. For a high proportion of poor, old farmers in household farms, daily sales of milk are the main way to complement very small pensions. In general, these farmers have limited technical knowledge, which inhibits improvements to quality. Most research and extension services focus on large farms. However, even large and medium-sized farm enterprises encounter difficulties in finding workers with adequate technical skills as industrialization and the recent economic boom have led to a “brain drain” from rural to urban areas.

In general, the quality of public agricultural research and extension services is poor and farmers still pay limited attention to quality and production costs. To date, except for rural information centres and occasional seminars organized by research institutes, there are few mechanisms which allow researchers and farmers to meet. No farm advisory services to bring together researchers and farmers are available. Some state-supported “centres of knowledge” offer one-week courses to interested farmers. However, these usually focus on large farms, while little technology is developed and disseminated to household farmers. For example, in the livestock sector, little attention is paid to winter feed supplementation, low-cost animal housing or improved home processing of milk.

### 3.5 Infrastructure

Several important constraints related to (rural) infrastructures complicate the development of modern value chains.

First, transportation from the producer to the consumer is relatively expensive and time-consuming in most cases because of the poor condition of rural roads. Trucks, buses and vans, which generally do not have the cooling equipment required for perishable goods such as meat, dairy products and fruit and vegetables, are used for most transportation. This results in important losses in the quantity and quality of production. In addition, exports to the West are constrained because Kazakhstan is landlocked and depends largely on Russian and Ukrainian port and railway infrastructure (often at a high cost and with serious delays because domestic production is prioritized).\(^\text{18}\) In addition, domestic transportation is constrained by the limited number of railcars – the main form of transport during harvest season. Poor railway infrastructure is also a significant

\(^{18}\) Part of the grain production is exported to the Caspian region through the port of Aktau. However, the existing terminal is not able to cope with the volume of grain exports. Moreover, the government-owned exporter, FCC, has priority rights to use the terminal. Given the fact that FCC is competing with private companies, this clearly creates a conflict of interest.
constraint on exports. Finally, the combination of strong demand and monopolistic grain transport services has led to a continuous increase in transport fees.

Second, energy costs could be reduced significantly with better infrastructures. For example, in the poultry industry, most existing enterprises are located in remote areas, where natural gas, the cheapest source of heating, is often unavailable. In addition, old systems of heating and ventilation are often still used instead of more energy efficient systems.

Storage facilities are also generally insufficient and obsolete. The situation is better in the grain and oilseed sectors as high prices have encouraged investment. However, greater investment in storage facilities is still required. In the oilseed sector, the most acute problem is the lack of specialized storage facilities, particularly for rapeseed. While large-scale agricultural holdings normally build storage facilities to cover their own needs, medium and small-scale farmers lack the necessary funds. The problem is more prevalent in southern Kazakhstan, where average farm size is significantly smaller than in the north. Although large processors use various financing schemes to support producers, they experience similar storage problems due to shortage of liquidity and unavailability of credit.

In the fruit and vegetable sector, the quality of cold storage facilities is particularly problematic: 80 percent of vegetable cold storage facilities were constructed prior to 2000 and half need major repairs. In most cases, manual labour is used for sorting and packaging and produce is often stored loose or in boxes. Artificial cooling systems are rare and, as a result, post-harvest losses at the storage level can be as high as 35-40 percent. In terms of overall storage capacity, the shortage of local, producer-owned storage facilities has been identified as a key issue. It is usually recommended that fresh produce not travel more than 50-100 km from the production site to the place of initial sorting and packaging. In recent years there has been an increase in storage capacity as members of production cooperatives have equipped various buildings (garages, basements) to store vegetables in the off season, when prices are substantially higher. However, these capacities are not included in official statistics and no data are available on the quality of these facilities. Depending on the sources, the number and capacity of fruit and vegetable storage facilities vary between 400 units for a total capacity of 242 000 tonnes and 654 units for a total capacity of 488 000 tonnes.

Finally, in the dairy sector, the lack of an appropriate cold chain, including cooling tanks and refrigerated vehicles, is leading to important losses and reduced quality. This is particularly the case in summer, when fresh water alone is used to refrigerate milk during transportation and storage, resulting in a rapid drop in quality.

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19 For example, exports to China by train are constrained by the lack of grain-handling infrastructure in western China. At present, all Kazakhstan’s grain shipments to China must be bagged and cannot be transported in bulk.
3.6 Government policy

There are several areas where government policies could be substantially improved.

First, the intervention of government companies has crowded out the private sector. In the wheat sector, the government grain company, FCC, is purchasing wheat on behalf of the state, which mostly goes to national reserves, public institutions (e.g. schools, etc.) and the export market. By intervening in the market, the government crowds out private initiatives, for example, in the export market where FCC has priority access to export facilities in the port of Aktau.

Second, rapid changes in government policies have created a climate of uncertainty for wheat and oilseed producers and exporters. The government has been artificially increasing domestic wheat and oilseeds prices through state buying and export support. However, the rapid increase in world market prices for grain and grain products led to the introduction of an export ban on wheat and some oilseeds in 2008 to maintain the domestic prices of flour and bread at an acceptable level. The ban caused disruptions for exporters and led to financial losses for farmers. However, later the same year, the wheat harvest was so high that prices started to fall drastically and, in early 2009, the government was forced to intervene to introduce reverse measures. These constant changes in government policies create a climate of uncertainty for wheat and oilseeds producers and exporters.

Third, government policy focuses on supporting large-scale farms to the extent that many are now largely dependent on state subsidies. This approach does not encourage farms to become more efficient. For example, oilseed producers receive subsidies for the cultivation of priority crops covering the cost of water, as well as fertilizers and seeds. However, it should be acknowledged that certain state subsidies have helped to modernize the sector. For example, in the wheat sector, the government has linked subsidies to compliance with government cultivation standards, such as water-saving technology.

While subsidies are given to large farms in all subsectors (beef, dairy, poultry, wheat and wheat products, oilseeds and fruit and vegetables), small-scale producers usually receive none (although they are subject to special tax treatment). Yet, small-scale peasant farms and even household farms represent the bulk of production for the meat, dairy, and fruit and vegetables sectors. These groups of farmers are largely neglected by government policies.

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20 In 2011, the FCC purchased about 20 percent of produced wheat.
21 All agricultural producers are subject to special tax treatment. Agricultural enterprises (cooperatives) are eligible for a 70 percent reduction in the social tax, corporate income tax, VAT, land tax, property tax and the tax on vehicles in comparison with standard rates. Individual farms pay the Unified Land Tax to the amount of 0.1–0.5 percent of the appraised (cadastre) value of land. This tax replaces payment of individual income tax, VAT, land tax, property tax and the tax on vehicles.
22 In fact, official statistics collect reliable data from peasant and enterprise farms, but not from household farms. This considerably limits the government’s knowledge of the internal dynamics of the small-scale production sector and its ability to develop targeted policy measures to increase productivity and production among this category of farmers.
4. Policy recommendations

4.1 Policy directions for the Kazakh government

Investment in rural infrastructures

Poor rural public infrastructures (roads and railways) are a significant constraint on the efficiency of the domestic market as they imply major losses in the quantity and quality of agricultural products. Lower transport costs and better access to (input and output) markets would also have a positive impact on the competitiveness of the sector. For the livestock industry, the restoration of ecologically important features such as windbreaks and tree plantations, and the re-seeding of degraded pasture lands with suitable pasture species, would have a favourable effect on the competitiveness of the sector.

Kazakhstan’s land-locked position seriously limits its export potential. Major efforts, involving public investment, should be made to facilitate access to export markets through a proper road and railway network, as well as modern port and railway terminals. The region bordering China requires specific attention and investment to enable bulk hopper trains to cross the border (not all wheat exports need to be packed before being transported). Such financial investments could take the form of public-private partnerships, due to their size and the commercial nature of the activities.

Ensure access to finance

Value chain financing instruments offered by processing companies and traditional or specialized banks should be encouraged. The government should adjust the current regulatory framework to allow small farms to use trade credit in all sectors. For example, the law “On the development of the cotton industry” has led to the disruption of established relationships and interlinked contracts in the cotton sector, as cotton seed-processing companies were no longer permitted ownership of the cotton seeds themselves. This change further complicated access to finance for producers and has been identified as the main reason behind a significant decrease in the area planted with cotton.

Lack of collateral and high interest rates (20 percent per year) also act as important constraints on farmers trying to obtain access to credit. With respect to high interest rates, some government programmes subsidize interest rates for investment loans. According to the case study, these programmes have had a positive effect and the government may consider extending them to encourage investments in the sectors.

In addition to these general items, the different sector reports recommended specific areas of investment. For example, in the fruit and vegetables sector, the government should support investments in productive cultivation techniques, such as the introduction of drip irrigation systems, high-quality fertilizers and high-tech greenhouses, as well as investments in specialized storage facilities. In the livestock sector, the government could invest in a “breeding cow lease and conservation programme” to “lend” breeding cows on a lease basis to farmers aiming to increase their herd but lacking the financial means to do so. Farmers with adequate sheds or housing and access to winter fodder and grazing could receive a number of breeding cows from other farmers that would pay host farmers an annual fee to cover the costs of fodder and veterinary services. The offspring would remain the property of the latter farmer, and at the end of the contract the farmer would take back the breeding cow. The government should also support
and encourage milk-processing companies to invest in the development of milk collection networks, cooling tanks and so on.

**Invest in applied research, advisory services and agricultural education**

There is a clear need for applied research and extension services to address current issues facing the agricultural sector, including those of smallholder farms. In addition, there is a need for advisory services to convey the recommendations of the research community to farmers and communicate the farmers’ problems to researchers (i.e. appropriate use of fodder, housing conditions of livestock, the development of seeds). In the livestock sector, there is a need for a specific research focus on the pedigree sector as the current system needs to adjust to international animal breeding practices.

In addition, sizeable investments in education and practical training are required as most agricultural workers are currently unable to make the best use of new technologies and production methods. These training programmes should cover not only the agricultural sector, but also downstream sectors such as the processing industry. In particular, retraining of workers is crucial to ensure compliance with new (international) food quality and safety standards. Altogether, specific training programmes are necessary for a wide range of agricultural activities related to crop and livestock production. They are also needed for processing activities, so that new technologies and methods are thoroughly understood and properly applied. National curricula will have to be formulated for such training and the training courses should be accredited to ensure that the delivered diplomas have value.

In addition to the training of students and workers, extension workers, trainers and teachers from existing agricultural institutions should also receive appropriate training. Investments in training facilities, such as demonstration farms adapted to the needs of the various types of farmers, are required to provide such practical training.

**Establish and implement international quality and safety standards in all sectors**

Kazakhstan has recently introduced international quality and safety standards for some sectors. However, if the country plans to further expand its agricultural exports, standards will have to be upgraded for all sectors. Significant efforts will be required to enforce such standards in close cooperation with representatives of the private sector and in conjunction with important investments in technical skills, knowledge, specific equipments and facilities. The government could take the initiative to support national development boards, with the participation of public and private stakeholders, for each sector. These boards would include representatives from the public and private sectors (including representatives/associations of small-scale farmers) and would advise the government and other value chain stakeholders on how to proceed with the introduction of higher food quality and safety standards. Representatives of international companies and organizations dealing with quality and safety standards would also participate in the boards. To date, existing producer organizations in Kazakhstan (e.g. in the livestock sector) are concerned mainly with lobbying the government and less with the regulation of their sector. Effective producer organizations could play a key role in making constructive proposals for the development of food chains and establishing self-control practices in the sector. Currently, this is not yet the case. For example, in the dairy sector, milk rejected by one factory because of low quality is often accepted by another factory. A lack of common industry approach to quality standards jeopardizes the development of such standards. A gradual approach with standard thresholds being raised progressively and with accompanying financial support for investments and training is needed.
The proper enforcement of food quality and safety standards would also require the creation of an efficient traceability system, where all products, including imports, are adequately labelled (with references to the manufacturer, production date, place of slaughter/processing, expiry date, etc.). Such a system would also allow better control of illegal imports, which still account for a relatively significant portion of some product categories, such as fruit and vegetables, dairy products and poultry meat.

In addition to the establishment of more stringent food quality and safety standards within the country, there is a need for closer collaboration with neighbouring states to develop jointly agreed animal disease control and eradication strategies. This is particularly important for cattle as intensive contact occurs through the buying and selling of animals, albeit often unofficially.

**Promotion of weak and missing links in the value chain**

In order to structurally improve the performance of key food chains, the government should consider financial support for weak and missing links in the chains. For example, in the poultry sector, attention is needed to upgrade feed milling, slaughtering and primary processing, as well as the implementation of techniques to mitigate environmental hazards. In the cattle sector, farmers cannot buy concentrates or combined feed with guaranteed quality on the market. The only mills that produce such quality are part of a vertically integrated company that does not sell to outside clients. Initial government encouragement for the setting up of feed mills producing specific ruminants feeds would have a strong impact on the development of the livestock sector.

**Develop a sector-wide development policy and strategy**

In Kazakhstan, the majority of government policies and public research and development (R&D) efforts focus on large-scale farm enterprises, although small-scale farmers dominate some sectors. For sectors where small-scale farmers produce a large share of total production (poultry, livestock, and fruit and vegetable) government policies and public R&D should address the needs of both large-scale and small-scale farmers (peasant and household farmers). More targeted interventions, taking into account the reality of the production structure, are crucial to increase the productivity of these sectors. In addition to economic aspects, policies should pay attention to the social-ecological dimension of agricultural production. This is achievable through more rational use of pastureland (e.g. with the establishment of pasture management committees) to restore overused land, and investment in rural infrastructures.

To fully understand the internal dynamics of the agricultural sector and initiate development of a sector-wide policy, the government should undertake to collect relevant and reliable data for all types of farmers, including small-scale producers, who are currently not properly surveyed. Such an initiative could involve the establishment of a national development board, consisting of representatives from the public and private sectors, to advise the government, professional organizations and other sector stakeholders on sector-wide policy development. For sectors where small producers represent a substantial share of production, the board should include representatives from their associations. In the poultry industry, for example, at least half the representatives should be small-scale poultry producers.

**Limit government intervention in markets**

At present, government market intervention occurs in all sectors. Some government agencies directly compete with private companies, such as the FCC, which has a dominant position in the export market of wheat and wheat products. These forms of state intervention may not only have a
negative impact on productivity, but also make the Kazakh market less attractive to foreign investors.

The government should also reduce arbitrary interference in exports markets. Following the food crisis of 2008, it introduced export barriers for oilseeds and wheat. As a result, traders and producers were unable to benefit from higher prices. There are also restrictions on seeds imports for the oilseed sector, which are generally of higher quality. Removing the price ceilings on imported seeds could lead to a boost in imports of high quality seeds, which in its turn could boost yields.

**Set up an equitable and sustainable system of pasture access and management**

In the livestock sector, land reform has reduced livestock mobility and farmers are overusing land close to villages. To limit the social and environmental impact of pasture use, the government should consider allocating to each settlement a pasture area with a combination of winter and summer pastures. Pasture management committees similar to those that exist in Kyrgyzstan would manage these assets on behalf of communities. The associations could prepare annual grazing plans with the help of specialists and charge a fee to their members (livestock owners) to graze on the pastures under their guidance. The use of such a system would reduce the environmental problems related to overgrazing and pasture degradation and raise some financial means to invest in pasture improvements. Existing leases could be converted into tradable grazing rights, which could be used by the current leaseholders when they build up their herds or transferred to pasture management committees for a certain price. Such a system would facilitate better use of currently underutilized pastureland (i.e. owned by people without livestock) and restore herd and flock mobility to a large extent.

**4.2 International Financial Institutions (IFIs)**

International financial institutions should concentrate on helping the government to play its public role in the development of agricultural food chains (as discussed above) and/or directly support the development of good practices in the private sector. Important areas of intervention are as follows.

**Stimulation of private investments inducing technological improvements in the agro-food industry**

Foreign investment is an important driver in the improvement of food chains. In general, large multinational companies usually have better access to finance and technical know-how, and better knowledge on how to create value added. IFIs – such as the EBRD and/or the International Finance Corporation (IFC) – can play an important role in identifying and financing such investors. The main impact of this support occurs principally through demonstration effects.

IFIs could also provide assistance in the development of innovative contract mechanisms to overcome lack of financial means (especially working capital) at the farm level, which is considered – in all case studies – as one of the major bottlenecks for farmers trying to increase quality and quantity of production. IFIs can play a facilitating role in designing interlinked contracts between farmers and processing companies/traders and, together with local financial institutions, creating financial instruments adapted to the specific needs of the agricultural sector (with appropriate grace periods, etc.).
In addition, IFIs could focus on investments to introduce important technological improvements at the farm level. For example, in the dairy sector they could introduce improved stables with proper manure handling, milking equipment and cooling facilities. A financing mechanism could include targeted credit lines and combinations of term/microfinance loans and competitive grant programmes.

Providing technical assistance and public investments in food quality and food safety
Overall, the level and enforcement of food quality and safety standards is poor. IFIs could support the definition and implementation of improved standards through technical assistance and targeted support to public investments. This is particularly important in the livestock sector where the prevalence of certain animal diseases can lead to important public health issues and involve important risk factors for the development of a modern livestock sector. IFIs could provide assistance in designing a well-functioning veterinary health programme, including the sale and use of necessary drugs and vaccines. They could also support the financing of associated investments (laboratories, etc.).

Enhance technical skills and knowledge
Investment in human capital is an area where IFIs could have the highest impact. Support for training programmes and investment in training facilities would be useful for all agricultural subsectors. Such assistance could include the development and strengthening of professional associations and the exposure of selected young professionals to international experiences in food chain organizations through study grants, specific training programmes and study tours.

IFIs could assist in the development of a network of training centres under the management of KazAgroInnovation. In this context, young and motivated individuals could acquire technical skills in terms of farming practices, farm management and primary agricultural processing.

Support policy dialogue in the various food chains
In the context of this project, two policy dialogue workshops were conducted to validate the conclusions of the main food chain analysis and to identify priority areas for policy discussions and priority policy measures to maximize the potential of the country’s agrifood chains. Both workshops were organized with the broad participation of representatives from the government and the private sector. A number of representatives from expert communities also participated and made significant contributions to the discussions. The workshop participants actively debated the major findings and recommendations summarized in this report. Further IFI efforts in the area of public private policy dialogue would help improve the policy framework underpinning the development of agrifood chains.