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Connecting to regional markets? Transport, logistics services and international transit challenges for Central Asian Food Processing Firms

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Abstract

Central Asian food processors face a number of constraints when they attempt to export to the region and beyond. The central Asian economies in focus here are land-locked, and thus lack easy access to sea transport. In addition, the region's transport network was built to reinforce the interdependence of the then Soviet republics, while conflicting economic interests make cross-border cooperation difficult. Based on extensive fieldwork on infrastructure systems and firm export strategies, this paper identifies contemporary infrastructure and transportation issues within the central Asian region, and makes a novel attempt to examine how these factors lead to challenges for local food processing producers trying to sell their products in the region and beyond.

Keywords: Central Asia, regional trade, infrastructure, transport, logistics, land-lockedness, food processing

Introduction

This paper explores the engagement in regional cross border trade of local food processing firms in three Central Asian countries, namely Kazakhstan, the Kyrgyz Republic and Tajikistan. Regional trade has historically been important for businesses in central Asia and supported by Soviet Union structures that have now disappeared and led to new, and other, challenges. For these firms, contemporary challenges to exporting are numerous. They include for example lack of finance and compliance to international safety standards that are on the rise in this region as in other parts of the developing world, and has been reported by numerous studies (see name of author withdrawn, 2015). This paper takes a different angle. It specifically focuses on those challenges that relate to infrastructure in the form of transport, logistics services and international transit.

Based on extensive empirical research¹, this paper sets out to identify infrastructure and transportation voids in the central Asian region that tends to be understudied, and show how they affect local firms' attempts to access foreign markets. By doing so, the paper contributes to ongoing discussions amongst researchers and policy makers on market access for firms in landlocked economies (see e.g. ADB, 2006). The focus is on six urban centers, two in each country, namely Astana and Almaty in Kazakhstan, Bishkek in Kyrgyzstan, and Dushanbe and Khujand in Tajikistan. Three food processing sub-sectors of high importance in the regions, respectively dairy and meat, grain and flour, and also fresh, dried and canned fruit are included in the study. The paper is organized as follows. First, the methodology is presented. Secondly, an analysis of transport, logistics services and international transit in the central Asian region is provided. Thirdly, an empirical analysis of local agribusiness suppliers' conceptions of these infrastructure issues is presented. Finally a conclusion is provided.

Methodology

Three overall methodologies were combined to collect the most relevant data. First, we collected from the relevant public and private entities hard statistics about regional transport links and their quality, border infrastructures, and transport and logistics service providers operating in the three countries. Second, we surveyed a representative sample of the transport and logistics service providers operating from Almaty, Astana, Bishkek, Osh, Dushanbe and Khujand. The survey collected basic information on the firms, their perspective on the operating environment, their infrastructure needs, and their view on the economic development prospect of their host cities. Third, one of the authors visited the six cities, travelling from Astana in north Kazakhstan to Dushanbe in Tajikistan combining air and road transportation, and crossing the borders Kazakhstan-Kyrgyzstan at Akjol and Kyrgyzstan-Tajikistan at Isfara to have a concrete sense of the quality of cross-country infrastructure and administrative procedures.

Primary data in the form of interviews with central Asian firm owners and managers were collected as part of a global value chain background study for a World Bank trade intervention in 2009 (see World Bank, 2011). While the empirical section below is based on an analysis of these data, it uses a specific and different part of the data than that report. The World Bank report took a much more macro-level approach to trade and infrastructure expansion at the general level. The analysis presented here, in contrast, provides a more qualitative, constructivist focus on businesses and business owners' perceptions of the challenges the (lack of) infrastructure represent. Interviews were conducted by local consultants in the three central Asian countries, and managed and monitored by the authors. Within the three countries, five urban centres were included in the fieldwork: Astana and Almaty in Kazakhstan, Bishkek in Kyrgyzstan, and Dushanbe and Khujand in Tajikistan. In each urban centre, local firm owners and managers (respondents) that were (or potentially could have been) involved in cross-border trade. Sampling of firms was based on local directories. In each sector, firms were (where possible) selected to include some that were already exporting to regional or global markets, and some that focused mainly on local markets, so that challenges related to both strategies and practices could be revealed. Due to the limited extent of interaction by (especially smaller) central Asian firms with the regional and global economy, the supplier firms selected were relatively large. In each city, the ten to fifteen (depending on the number of existing firms) largest locally-owned firms in a given sector were

¹ See methodology section below.

contacted by sending a letter of introduction. Interviews were made with the first business owners or managers (again depending on the number of existing firms and positive response rates) who agreed to be included in the study. The total number of firms included in the study were thus as follows: The total number of firms included in the study were thus as follows: Nine grain processing firms in Kazakhstan, seven producers of canned, dried and juiced fruit products from Tajikistan, and four from the Kyrgyz Republic; and meat and dairy processing firm owners or managers from all three countries - four from the Kyrgyz Republic, six from Kazakhstan and three from Tajikistan.

Interviews were open-ended and checklist based. This meant that a number of overall topics were covered during each interview. Any new and relevant information revealed during an interview was followed up, and the respondents were encouraged to define important challenges themselves. They were conducted by local consultants in the three central Asian countries, and managed and monitored by the author. A number of overall topics, inspired by insights from global value chain research in various sectors, were covered during each interview. Any new and relevant information revealed during an interview was followed up, and the respondents were encouraged to define important challenges themselves. Interview questions were generally composed in such a way as to uncover challenges and possibilities for local firms. Interview themes that questions for central Asian managers and firms owners were composed around are shown in Box 1:

Box 1: Overall interview themes

- a. Firm characteristics
- b. Tasks performed
- c. Supply
- d. Market/export challenges
- e. Challenges relating to regulation
- f. Transport and logistics
- g. Upgrading
- h. Requirements from buyers
- i. Finance and local institutional support
- j. Future prospects and challenges

The empirical data collected through the firm interviews was triangulated with other types of data, including interviews with representatives of local business organisations, standardisation bodies and chambers of commerce. These informants were also able to provide general knowledge on challenges relating to various sectors in the global economy, and the position of the focal countries within it. Since challenges and possibilities for local firms differ between sectors—and relate to various types of localized factors—interview guides were also modified so as to be relevant to each of the sectors/urban

centers in question. Finally, the research drew on a number of other sources, including World Bank reports, research papers, available trade statistics and reports on infrastructure, trade agreements and the like.

In the following section, empirical data on transport and infrastructure systems will be examined. This provides a basis for exploring the challenges in this regard as experienced central Asian business owners and managers afterwards.

Landlockedness, infrastructure and transportation challenges in central Asia

The three central Asian countries do, like other land-locked economies, ‘lag behind their maritime neighbours in overall development and external trade’, as argued by Faye et al (2007). These authors explain the relationship between landlockedness and relatively poor economic performance as not just being a matter of distance from coast, but also as a consequence of dependence on transit neighbors. This point is also confirmed in this paper. It pinpoints how exporting relies on a combination of regional political relations and stability, regional infrastructure and administrative practices. The six leading cities explored here are connected to each other and also to attractive regional markets through the North-South road corridor from the Tajik-Afghan border at Nijny Panj to the Kazakh-Russian border at Petropavlovsk (Figure 1). In addition, five railway corridors are considered by the Eurasian Development Bank as technically suitable for cargo transportation, while domestic air transport also reinforces the connectivity of these leading cities. Still, Central Asian firms operating in the food sectors are facing major market accessibility constraints to reach regional markets. The region’s transport network was built to reinforce the interdependence of the then Soviet republics, but conflicting economic interests now make cooperation difficult. Likewise, Central Asian managers often stressed that exporting to the region involve different obstacles that all may be seen as related to transportation in a broad sense. These include border delays, poor transport facilities and corruption along the road, which make international transit a significant challenge. Inefficient border crossing operations were considered particularly burdensome along the north–south road corridor linking the six leading cities. Fieldwork also showed that inefficiencies include customs valuation problems, inefficiencies at border crossing points, uncertainty created by transit through Uzbekistan, and costs of informal payments and convoying. Across the entire region, customs valuation is unclear and inconsistent and is based mainly on importers’ declared value or weight, which favors informal payments to lower the valuation and which also reduces customs proceeds. (Worldbank, 2011).

Two other sources of inefficiency in border crossing-related operations identified were the limited use of risk management to control trucks and of payment guarantees. By regulation in all three countries, all import cargo must be unloaded for inspection prior to clearance and release (no risk management), a costly and time-consuming process that encourages informal payments to speed it up. In the Kyrgyz Republic and Tajikistan, customs payments are made directly to customs officers, increasing informal payments and corruption; no bank or guarantee system is in use. Kazakhstan’s customs guarantee system handles each customs-related operation separately—in-bond transportation, bonded warehousing, and customs brokerage—thus promoting informal payments to simplify the procedure. Another challenge is that transiting Uzbekistan by either road or rail creates uncertainties about delivery times and costs, according to firm managers interviewed (2009). Transiting through Uzbekistan is also becoming increasingly difficult, with Kyrgyz and Tajik truckers reporting many breaches of Transport International Routier seals—a violation of international transit law that increases delays and uncertainty about final delivery. In addition to official transit fees of USD 300 per truck

(plus an extra USD 30 for non-Transport International Routier trucks), truckers are assessed an estimated USD 1,000 in informal payments per truck. Non-Uzbek Central Asian truckers need a visa to drive through Uzbekistan and must pay an escort fee of USD 1 per kilometer. In 2006, only 1,000 such permits were issued, one-third of the 3,000 requested. Tajik truckers report that each time they cross Uzbekistan, they are deliberately delayed for at least four hours, in addition to the time taken for unloading and loading and waiting at customs control points, thereby incurring additional expenses in bribe payments and operating costs. Finally, Uzbek border closings have become pervasive; closings in June 2009, for instance, lasted nearly the entire month, creating disruptions in trade and transport operations.

In 2008, the Agribusiness Competitiveness Center in the Kyrgyz Republic conducted a monitoring study that documented all administrative barriers and informal payments along the Kyrgyz corridor for a 19-ton refrigerated truck of black cherries from the rural Markaz District in Batken region to Russia via Osh, Bishkek, Almaty, and Astana (Agribusiness Competitiveness Center 2008). Along the way from Osh to Bishkek, the trucker made the following informal payments at various checkpoints:

- Frontier veterinary quarantine (245 km from Osh), to control the spread of animal diseases—the trucker paid the equivalent of USD 7 so that the control agent would not open the refrigerator;
- General road directorate (280 km from Osh)—the official fee is USD 60, but the trucker paid an unofficial fee of USD 30;
- Axle load road control terminal in the Jalal-Abad region (295 km from Osh)—the officer estimated an overload of 1 ton and asked for USD 160, and the trucker made an informal payment of USD 100; and
- Chyckan ecological control terminal (419 km from Osh)—the trucker made an informal payment of USD 24 to pass through.

Truckers driving Kyrgyz trucks incur all these costs on the domestic leg of a journey. Reportedly, foreign carriers pay almost twice as much. Truckers must also make additional informal payments of USD 750 while transiting Kazakhstan (for example, for passport registration, load registration, certificate registration, and Transport International Routier document checking) and of USD 295 in Russia. Such informal payments can easily add up to about 5 percent of the value of the products transported. Truckers can face many other challenges, including how long they must stay in transit or destination countries. Consider a truck going to an EU country. The number of EU members has increased significantly since 2004, along with the accession of many Eastern and Central European countries that must now abide by EU regulations governing such matters as how long truckers may drive without a rest break. Because of such regulations, plus the time needed for transit, loading, unloading, traffic jams, and so forth, a driver might need to spend up to 20 days in EU countries. Yet transit visas are valid only for 10 days and visa extensions are not guaranteed. Finally, in the absence of a guarantee against the value of the load, convoying is usually required for customs transit under the national road transit systems in Kazakhstan and Russia. But one major problem with convoying is the high fee charged for the service. According to existing regulations, customs convoying rates in Kazakhstan range from USD 14 for less than 50 kilometers to USD 900 for more than 2,000 kilometers; in Russia, the fees range from USD 60 for less than 50 kilometers to USD 30 per 100 kilometers beyond 200, with a minimum of USD 180. Usually one customs official escorts convoys of

fewer than 10 trucks. A drawback to convoys is that accumulating sufficient vehicles for a convoy takes time, as much as a day or more at light traffic border crossing points. Finally, all vehicles in a convoy must arrive at the exit border crossing point together, causing a significant additional delay for processing.

Excellent rail connections between Almaty and Moscow do not traverse Uzbekistan. Turkey and India are accessible via Uzbekistan and Turkmenistan. But because Central Asia's rail gauge is different from the standard gauge used in China and the Islamic Republic of Iran, and from the separate Indian gauge, shipping fresh produce via rail to China, India, and Turkey requires reloading, a risky process; produce must also be shipped in containers to lessen potential damage during unloading and reloading. Such extra hurdles reduce the benefits normally associated with rail and increase the costs of rail shipments. Yet regardless of destination, rail remains the most cost-effective way to ship goods that do not require refrigeration, or when shipment time is not critical. Kazakhstan's railways still lack technical capabilities, especially in the fields of signalization, computer systems, and communication, although its rail system is generally more mature than those in the Kyrgyz Republic and Tajikistan. Kazakh authorities plan to build two main railway links totaling 4,800 kilometers from Astana to Aktogai via Pavlodar and Semey and from Shu and Arys to Kokshetau via Kandyagash in Aktobe Oblast. Railway shippers complain regularly about poor up-front examinations before trips on rolling stock required by the state railway company, Kazakhstan Temir Zholy, which uses old and worn-out freight cars. Shippers must lease cars and reorganize wagons to the desired length at their own expense. Burdensome informal payments, collected via the queuing system managed by Kazakhstan Temir Zholy, cause delays for shippers waiting to be assigned cars. Because Kazakhstan Temir Zholy is a quasi-monopoly with limited cars, shippers must submit requests one month before they require the cars to allow Kazakhstan Temir Zholy time to coordinate transportation with targeted countries; shippers providing less than a month's notice must pay fines. Such challenges only compound the railway monopoly's overall inefficiency. Rail transport in Kazakhstan will require much more time, effort, and money to achieve full efficiency, more than either air or road transport. Although much more open to competition than rail, air transport services remain extremely expensive. All air freight out of Almaty is brokered by a single agent, Europe Asia Transit, and it is impossible to purchase cargo space directly from any airline. Air cargo rates from Almaty to key destinations make the cost of shipping fresh produce to any of these markets by air prohibitive, even without analyzing other costs involved in growing and delivering produce to Almaty.

Challenges for central Asian businesses

Against this background, the following section considers how these identified concerns about transportation of products in central Asia translate into challenges for individual businesses operating in the region. It examines this question in the three food processing subsectors.

Dairy and meat

Local dairy and meat sectors are relatively important in all the countries covered by this study. Products made include various types of value-added products such as cheese, kefir, yoghurt, ice cream, sausages, canned meat and poultry specialties. Dairy and meat products are generally highly focused on domestic markets in all the countries, not least due to the challenging combination of cumbersome infrastructure and transport of fresh produce in such a way that it remains fresh. Meat and dairy products produced by firms included in our sample are generally for a low market segment.

Kyrgyz meat products are mainly sold at local markets in Bishkek city and to some extent in other regions of the country. Domestic buyers of these products are mainly local wholesalers or retailers in local markets and Bazaars. Also, Kazakhstan is the main export market for Kyrgyz milk and meat products (World Bank, 2007). Processed dairy products are to a large extent sold to Kazakh wholesalers, though demand for the products from Almaty has decreased within the past couple of years. In Tajikistan almost all meat and dairy products are sold domestically, in local markets and bazaars. Two large state-owned companies mentioned during interviews that they had received support from the Chamber of Commerce for trade fair participation in Afghanistan and started to export small amounts there, although limited by lack of refrigerated transportation facilities. There had formerly also been some export of cheese to Kazakhstan from some of the dairies interviewed in Tajikistan, which stopped due to lack of supply of raw milk. While the tendency of selling at local bazaars also applies to the region more widely, the significance of these outlets has diminished lately in Kazakhstan, where local supermarkets increasingly enter the retail scene. Thus, the sector in Kazakhstan generally tends to take up a more advanced and downstream node of the value chain than its counterparts in the other countries. Products have a relatively high processed content. Trading relations that benefit from the relatively easy transportation between Bishkek and Almaty also mean that Almaty processors benefit from lower raw material prices in Kyrgyzstan. Besides this intermediate trade, some of the larger Kazakh holding companies own plants in Bishkek where they experience very little competition from local processing firms. In general, sample firms in the Kazakh milk and meat sectors are thus relatively large compared to their counterparts in Tajikistan and Kyrgyzstan, including large state-owned and holding companies. According to key informants (interviews 2009), the sector does also more generally consist of relatively few very large players and numerous small businesses and households, while the medium-sized segment is more or less non-existent. The largest dairy holding accounts for a 30 percent of the domestic market, and as much as 80 percent of the market in Astana (Wandel, 2008).

Firms in the Tajik meat and dairy sector are partly small private firms with 10 to 50 employees, partly relatively large former state companies. In the Kyrgyz Republic, smallholder production systems dominate the farming supply node after the shift from public to private livestock ownership in rural areas at independence. Among these smallholders, private farmers have steadily replaced household units as the main source of output and sales. Most meat processing is also done by small operators, the majority of which operate in the informal sector avoiding tax and health inspections (World Bank, 2007). Actors interviewed for this study consist of processing firms, and some of the agricultural cooperatives supplying them. Processors are mainly private enterprises. Local milk and local meat supply is limited and regarded as of poor or mixed quality by processors, especially by the larger processors in Almaty, and possibilities of buying supply from a distance is hindered by infrastructure constraints in general, and also in this case by lack of refrigerated transport in specific. that include refrigeration. This problem also brings about food safety concerns. In addition, firms state that though supply prices are still about 30 percent lower in Tajikistan and Kyrgyzstan than in Kazakhstan, they have recently increased in the entire region. This pattern also applies to other types of supply, including packaging. Large volumes of milk and meat supply to Kazakhstan's processing industry derive from the Bishkek area, which is located in close proximity to the Kazakh border. Raw milk is sold by farms to local traders or directly to processors at pick-up points in rural areas or at local markets in the city, and then purchased by processors or exported directly to milk processors in Almaty. Similarly, livestock for meat production in Kazakhstan is commonly bought by slaughterhouses from farmers in Kyrgyzstan, after which the meat is delivered to Kyrgyz or Kazakh wholesalers, who bring it to their local retail markets. Kyrgyz processing firms in the sample also

mainly buy meat from these markets in Bishkek and to a lesser extent from meat collection centers. Moreover, a couple of larger meat processing firms in our sample have contracts with permanent suppliers of meat. Prices are stated as lowest at the local markets, whereas these are often preferred by processing firms.

Grain, flour processing

The grain sector is a long-established sector in Kazakhstan, which is Central Asia's only exporter of grain and among the world top ten exporters. The sector has however been highly affected by the financial crises and the devaluation (Eurasianet.org, 2010); Interviews, 2009). Grain and processing firms in the sample of firms interviewed in Astana include private firms and large agroholdings². Products produced in the sample firms include grain production and processing into feed, flour and bread. Bread processors are small-scale private firms. According to Wandel (2008), most of the big players in the current industrial structure have their origin in grain trading, and are sometimes part of larger, diversified conglomerates termed 'clusters' in spite of their vertical rather than horizontal integration. They include service sectors, raw supply production, food processing, wholesale, retail, packaging material, machinery, research institutions and financial institutions. Kazakhstan provides for a vast domestic market for the food industry. According to Lorentz (2006), local markets and bazaars cover a large share of the domestic market, though their significance has diminished lately. The country's domestic retail sector has become quite diversified. Retail chains account for some 20 percent of the market, while independent stores have an even larger share. The increasing purchasing power of the population (though somewhat affected by the current crisis) has also encouraged some CIS-based foreign retailers to enter the country and secure a significant market share before facing competition from global retailers once Kazakhstan joins the WTO. In the Astana grain-sector, sample firms interviewed for this study are relatively export-oriented. Grain exports mainly target other Central Asian countries and Russia, accounting for 98% of flour export from Kazakhstan (International Grain Conference, 2009). Exports to Russia from Astana are usually transported along the North-South Corridor, and delivered to subcontracted forwarders at the border. Thus, the most northern link of the corridor seems to provide most opportunity in terms of access to the Russian market, while the corridor presently provides less access for firms located in the more southern parts of the corridor. Still, recent rail tariff increase in Russia is a major challenge for exporters to Russia, including from Astana. Moreover, the market share of Kazakh grain processors in Russia decreased after an export ban implemented by the Kazakh government to mitigate the food crisis, leading to a loss of market share of Kazakh exporters' in Russia and Central Asia to the advantage of Russian and Uzbek exporters. This share was difficult to regain when the ban was lifted. However, Kazakhstan's other big neighbor, China, is becoming an attractive market for Kazakh grain exports. China has recently lifted a ban on grain transit through the country, and thus opening new market opportunities for Kazakh grain exporters. This will also allow Kazakh exports to Japan and South Korea via China (Silk Road Intelligencer May 13, 2010b). For grain and flour export markets outside Central Asia, the challenge most commonly mentioned by respondents and key informants as constraining grain exports relates to the country being landlocked. Russian grain exporters are seen as main competitors at the global market due to the fact that they are able to ship grain directly from seaports with shorter lead time as well as lower costs than their Kazakh counterparts. Some of the larger agro-holdings have improved

² Since 2006, the Kazakh government has created state holdings following the example of Singapore and Malaysia. JSC "KazAgro" supports the agro-food sector (Wandel, 2008).

their grain export possibilities by investing in the creation of transport-logistics infrastructure for storage, transshipment and processing of grain, including in neighboring countries such as Azerbaijan.

Fresh, dried and canned fruit

The study of fresh dried and canned fruit in Central Asia was mainly focused on Tajikistan, which was one of the largest producers of fruits and vegetables during Soviet times, while market access to especially China, Iran and Afghanistan has also been of major importance. USAID (2008) states that Tajikistan lost its edge in the regional apricot market to these three markets due to a lack of sanitation and industry standards and consistency in sizing, grading, and packaging (USAID, 2008). Vegetables and fruits are cultivated by three types of producers: large agricultural farms including state and collective farms (Dekhan³ farms) and small producers on household or family plots. The export transport links from the north have improved lately so that access to export markets takes also 3 days less by train from the North than from Dushanbe (World Bank, 2005b). The majority of processing firms interviewed are relatively small family businesses or cooperatives in which members are private farmers, while the larger ones tend to contain some amount of state stock. Production space is commonly located in the family home or rented from other firms' premises. Products produced by the sample firms include dried fruit (mainly apricots with high sugar content that are normally in high demand in export markets (USAID, 2008), canned fruit and fruit juices. They are characterized by little product differentiation in that most firms concentrate their tasks on one task, such as dried fruit only. Still, the industry does provide some value-added to processing firms and to the economy in that processes of washing, grading, sorting and packaging of fruit are commonly all conducted locally: the entire value chain exists in the Khujand area at present. Most dried fruit producers store the products at home in unsuitable conditions resulting in an estimated minimum loss of 25 percent every year. The spoiled product are not wasted, but sold to the canning and juice industry at low prices – and thus leading to quality issues in these regional sub-industries. Local suppliers include suppliers of raw fruit, and can and label processors. A number of constraints to local raw material supply include irrigation and water shortage for fresh fruit supply and lack of storage capacities.

Historically Russia, China and Central Asian countries are the main export markets for fresh and processed fruits and vegetables from Tajikistan. Nowadays, Tajik processors face severe competition in these markets due to a combination of such factors as transport costs, product quality and price. According to World Bank (2005a), this is also a result of improper transit packaging and overloading of wagons and containers (which is an attempt to reduce unit transport costs). World Bank (2005a) states that the patterns of export changed during the last years. The value of processed fruits and vegetables exports increased from 56 to 78 percent of total horticultural exports, due to increasing pressure at the various border points that add time and costs, reducing export profitability of low value goods such as fresh fruits and vegetables. Some canning production units have been modernised and their export promoted by the government. World Bank (2005a) also shows that the total export value of dried fruits from Tajikistan tends to decrease, while the values of fruit juices tend to increase. This reflects well the fact that dried fruit producers in our sample sell more or less entirely at the domestic market. Besides a wide variety of infrastructure challenges as such, they point to a high degree of corruption 'along the road' for products passing through the region, as a major challenge for exporting.

³ In Tajikistan, reforms in agriculture began in 1996 with amongst other things the transformation of large farms into private so-called Dekhan farms (EBRD, 2009).

Also, the fact that Tajik products are of too low quality for global as well as regional markets is seen as a challenge for keeping the country's market share in Russia. Some of the fruit canning and fruit juice processors in the sample do have a relatively high export content of finished products, mainly to Kazakhstan and Russia. They operate their own distributors, who deliver the products to markets in the city and closest districts of the Sughd region. For one large juice-producer interviewed, 95 percent of bottled juices and 58 percent of Tetra Pac juices have been sold in Kazakhstan till 2008. However, this company also mentioned that while the supply that this company was able to purchase in 2008 actually increased, the financial crisis have resulted in fewer Kazakh buyers demanding the juices which are now in stock in Tajikistan. Respondents commonly mention lack of storage capacity (or high rental costs for it) as an obstacle to large-scale exports. In turn, high freight tariffs on rail and motor transportation are generally cited as a major difficulty for accessing regional or global markets. Therefore, they tend to focus on countries of geographical proximity to lower overhead costs. They also commonly pointed to lack of refrigeration during transport as an obstacle to supply quality. This is in line with World Bank (2005d), which reports an acute shortage of packing sheds which results in growers packing field temperature directly to a refrigerated truck bound for an export city, meaning that when the truck enters Moscow six days later the produce is of poor quality.

Conclusion

Export challenges that relate to infrastructure for central Asian food processing firms are numerous and a somewhat overlooked phenomenon in research dealing with firms access to regional and global markets. They range from lack of or insufficient access to efficient and affordable transport and distribution services, to the fact that the countries are land-locked and lack easy access to sea transport. Especially the latter point is significant since the region's transport network was built to reinforce the interdependence of the then Soviet republics, while conflicting economic interests within the region make cross-border cooperation difficult today. This results in border delays and makes international transit difficult for central Asian businesses. The central Asian food processors included in this study for example point to difficulties of receiving supply as well as challenges related to exporting, including transportation costs, lack of storage capacity, tariff barriers not least at the Russian market, and corruption along the roads within the region as important constraints they meet when attempting to export. At least one challenge applies specifically and especially to the food processing industry examined here, namely the lack of refrigerated transportation possibilities in the region. This has already strengthened the difficulty of selling at the Russian market, and is most likely to be even more severe in the very near future when international food standards that are already pertained at the Russian market become more important in the central Asian region as well.

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Figure 1: The North-South road corridor linking six Central Asian leading cities (green line added)



Source: World Bank (2011).