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Grain Import Dependency and Food Security in the South Caucasus

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Abstract

Although food security has improved during the transition period, the issue is still prevalent in the countries of the South Caucasus, which are heavily depending on wheat, the most important staple crop in the region, imported from Russia, and to a limited degree from Kazakhstan and Ukraine. Due to their favorable location next to the largest wheat exporting region, trade costs play a relatively small role and wheat markets in Armenia, Azerbaijan and Georgia are relatively well integrated with the Black Sea export market. Nevertheless, Armenia has the least diversified wheat imports among the South Caucasian countries due to its closed border with Azerbaijan. Despite the well-integrated markets, wheat imports and thus food security remain challenged by repeated restriction of wheat exports by the governments of Russia, Kazakhstan and Ukraine, most recently implemented as crisis policy during the COVID-19 pandemic.

Food Security in the South Caucasus

After the breakdown of the Soviet Union in the early 1990s, the South Caucasian countries Armenia, Azerbaijan and Georgia transitioned from centrally planned to market economies. Deterioration in the economic situation during

the first phase of the transition resulted in chronic food insecurity in the region. However, since the beginning of the 2000s, the South Caucasian economies started to recover from macroeconomic and institutional problems, which was accompanied by an improvement in food security. For instance, the prevalence of undernourishment¹ decreased from 13.5%–23.8% in 2000 to 2.5%–7.9% in 2018 (Table 1). Nevertheless, the prevalence of moderate or severe food insecurity is still high and varies around 35% in Armenia and Georgia.

Table 1: Country-Specific Economic Indicators

Indicators	Armenia	Azerbaijan	Georgia
Prevalence of undernourishment (3-year average) (%)			
average of 1999–2001	23.8%	23%	13.5%
average of 2016–2018	4.3%	2.5%	7.9%
Prevalence of moderate or severe food insecurity in the total population (%), average of 2016–2018	34%	–	35%
Share of consumer expenditures of the household on food (%), 2018	41%	44%	34%
Share of wheat in total food calorie (kcal/capita/day) supply (%), 2017	34%	53%	41%
Wheat import dependency ratio (%), average of 2017–2019 ^a	63%	38%	82%

Note: – = data is not available.

Source: Own illustration; FAOSTAT (2020), USDA-FAS (2020).

In the South Caucasus, households spend between 34% to 44% of their consumption budget on food (Table 1). Wheat is the most important staple crop in the region. Wheat products, mainly in the form of bread, account for a large share of total daily food calories, ranging from 34% in Armenia to 41% and 53% in Georgia and Azerbaijan, respectively (Table 1). For comparison, in Eastern and Western Europe, 28% and 21% of total daily food calories are derived from wheat (FAOSTAT 2020).

Nonetheless, despite the high importance of wheat for food security, especially for poor households, domestic wheat production falls short of meeting local demand in the countries of the South Caucasus. Domestic wheat consumption heavily relies on wheat imports in Georgia (82%) and Armenia (63%), though the wheat import dependency ratio² in Azerbaijan is substantially at 38% (Table 1).

For this reason, supply shortages/increases in price of wheat and wheat products pose significant risks in terms of social unrest in the South Caucasus region. Local news agencies actively report on the changes in the price of wheat, wheat flour and bread, particularly during periods of significant price increases. For example, export restrictions implemented in the grain export markets of the Black Sea region (Kazakhstan, Russia and Ukraine) during the 2007–08 and 2010–11 world food price crises significantly reduced wheat supply to the world market and increased international prices (Götz et al. 2013). In response, the Azerbaijani government took an explicit measure and counteracted the increased costs of wheat imports by introducing one-year VAT exemptions in July 2007 and again later in December 2010 (Trend News Agency 2011; Eurasianet 2007).

Structure of Wheat Imports

The countries of the South Caucasus mainly import wheat from the wheat-exporting countries of the Black Sea region. During the last three years, the share of Russia, Ukraine and Kazakhstan in total world wheat exports increased to 35% (USDA-FAS 2020). In particular, Russia's share in world wheat exports amounts to over 20%, which makes the country the largest wheat exporter in the world. This development was especially stimulated by the strong devaluation of the Russian Ruble in 2014 and record harvest volumes (Svanidze & Götz 2019). It is expected that Russia's role in world wheat export markets will further increase as the country has significant additional wheat production potential (Svanidze, Götz & Schierhorn 2019). Neighboring Ukraine and Kazakhstan account for around 10% and 5% of global wheat exports, respectively.

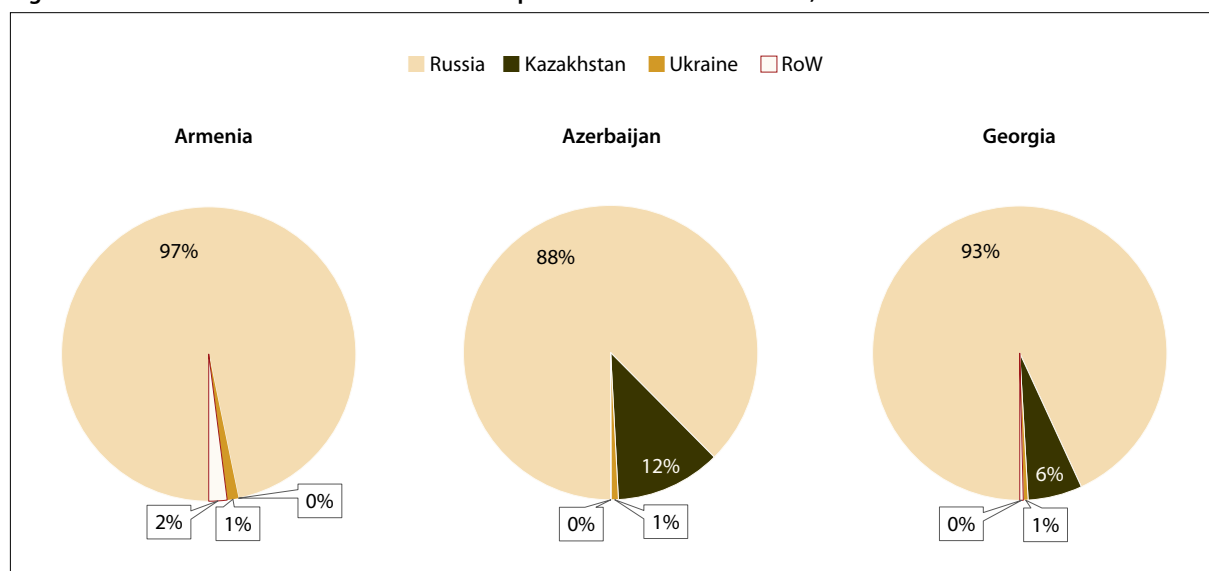
The Black Sea exporters account for 99% of total wheat imports in the countries of the South Caucasus (Figure 1 overleaf). Although these countries are all in close proximity to Russia, the structure of their wheat imports differs. While Armenia, with 97% of its wheat coming from Russia, is extremely dependent on that country for its wheat, Azerbaijan's and Georgia's wheat imports from Russia (88% and 93% of total wheat imports, respectively) are supple-

1 Percentage of the population whose food intake is insufficient to meet dietary energy requirements continuously.

2 Import dependency ratio is calculated as "import ÷ (production + import – export) x 100".

mented by wheat imports from Kazakhstan (12% and 6%, respectively). Especially in Azerbaijan, consumers prefer Kazakh wheat, with its high protein content, over Russian wheat; considering the fact that Azerbaijan is also the closest of the three to Kazakhstan, this results in a higher share of wheat imports from Kazakhstan compared to the other countries in the South Caucasus. Wheat imports from Ukraine are modest, with a share of about 1% of total wheat imports for all three countries.

Figure 1: Share of Countries in Total Wheat Imports to the South Caucasus, 2015–2019



Notes: RoW= "Rest of the World", i.e., countries other than mentioned on the figure are included.

Source: Own illustration; UN Comtrade (2020).

Access to seaports, ease of grain transportation and geopolitical relationships among the countries of the South Caucasus influence the structure of wheat imports in the region (Figure 2 overleaf). Of the three countries, only Georgia has access to ports on the Black Sea through which wheat is imported directly from Russia and Ukraine (red arrows on Figure 2). Russian wheat can also be imported to Georgia by trucks using the road transport system (red arrow on Figure 2). Since Armenia is a landlocked country, it depends on Georgia's rail system for transporting imported wheat from Georgia's Black Sea ports to its border (yellow arrow on Figure 2). Azerbaijan, which borders Russia, relies on direct rail shipments of wheat from Russia as well as Ukraine (green arrow on Figure 2). Kazakh wheat, on the other hand, is mainly transported by freight trains, which pass through Russia (green arrow on Figure 2) and are further transported via Azerbaijan to Georgia (white arrow on Figure 2). Therefore, Azerbaijan's transport routes to Kazakhstan are of shorter distance compared to Georgia, spurring imports of Kazakh wheat to the Azerbaijani wheat markets. However, Armenia cannot utilize this cost-efficient route due to its military conflict with Azerbaijan and the resulting border closure. Armenia can thus only access the Black Sea wheat export markets via Georgia, significantly increasing the cost of wheat transport.

Since wheat from Kazakhstan is imported by train using the Russian rail network, importing wheat from Russia and to the South Caucasus is cheaper compared to wheat imports from Kazakhstan (Svanidze et al. 2019). The estimated cost of wheat transportation by rail is about \$50–\$80 per ton from Kazakhstan to Azerbaijan (and \$30 higher to the border of Georgia), which is roughly double the wheat transportation costs from Russia to Azerbaijan (\$20–\$40). By contrast, transportation costs of wheat imports via the Black Sea ports are lower by around \$15–\$30 per ton of Russian or Ukrainian wheat for Georgia. Furthermore, since Armenia is a landlocked country, it has the highest wheat transportation costs among the South Caucasian countries: wheat transportation costs increase by about \$25 per ton for Armenia compared to Georgia's.

Integration of Wheat Markets

Well-functioning wheat markets are well integrated with world wheat markets. By ensuring availability and access to wheat they are crucial for reducing food insecurity, which is prevalent in countries of the South Caucasus (Schroeder & Meyers 2016). An integrated market is characterized by strongly co-moving prices across spatially separated markets.

Figure 2: Map of Wheat Trade Routes from the Black Sea Region to the South Caucasus

Source: map based on an illustration by Dr. Linde Götz and Dr. Miranda Svanidze and created by the Research Centre for East European Studies in QGIS with geodata from <https://www.openstreetmap.org/> and <https://geohack.toolforge.org/>. See previous page for explanation of arrow colors.

For example, a price increase in the export market, due to e.g. a harvest shortfall, should also induce price increases in the domestic market in the importing countries. In contrast, in a weakly integrated market, domestic price developments are only loosely correlated with price changes in the export markets, discouraging access to export markets, which is often possible only at high costs. In this case, rising export prices will induce limited trade inflows, thereby negatively affecting the availability and access to a sufficient, reasonably priced grain supply in an importing country. High transportation costs, policy interventions on domestic markets, such as price controls and support measures, could further hinder the full integration of domestic markets in international markets.

Given the high dependency of the South Caucasian countries on wheat imports from the Black Sea region, it is important that the price developments in the Black Sea export markets are transmitted to the wheat markets in the South Caucasus.

Price relationships between the domestic wheat prices in the South Caucasus region and export prices in the Black Sea region are investigated by Svanidze et al. (2019). The analysis has shown that wheat markets in Georgia are the best performing within the South Caucasus region by far, its market-oriented policies and favorable geographic location facilitating relatively low transportation costs and good access to the grain export markets in the Black Sea region via its own ports. Specifically, price changes in Russia's export market are transmitted to the domestic wheat market in Georgia by 74%, Armenia by 63%, and Azerbaijan by 49%. In contrast, wheat price changes in Kazakhstan are to a lower degree transmitted to the wheat markets in Georgia (62%) and Armenia (55%). Particularly, the low wheat price co-movement observed between Armenia and Kazakhstan results from the extremely high transportation costs induced by the closed border between Armenia and Azerbaijan.

Furthermore, in spite of Azerbaijan's lower transportation costs of wheat imports from Russia compared to Kazakhstan, wheat prices in Azerbaijan are more strongly related to wheat prices in Kazakhstan (55%) compared to Russia (49%). This is in line with the strong business ties existing between Kazakhstan and Azerbaijan and the preference for high-quality Kazakh wheat.

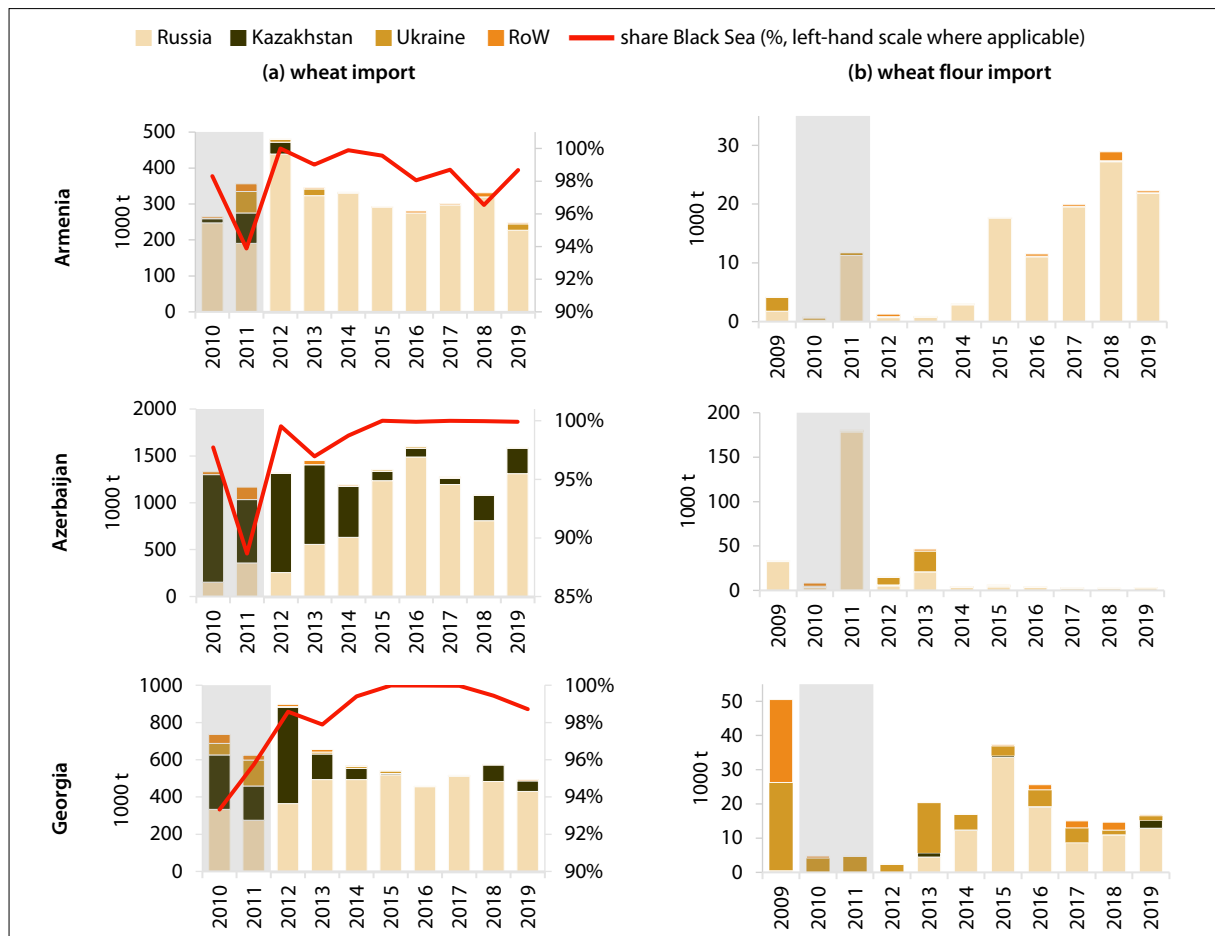
Wheat Markets During the Crisis

Even though the wheat markets in the South Caucasus are integrated with the Black Sea wheat export markets, high dependence on imports to secure domestic wheat supplies could expose the domestic wheat market to the shocks occurring on the world market. In particular, during periods of crisis (for example, the 2007–08 and 2010–11 food price crises), exports from the Black Sea region were highly unstable due to harvest shortfalls and export restrictions imposed by the Black Sea grain exporters, of which the most extreme measure was the complete ban of wheat exports from Russia for the 2010/11 marketing year (Götz, Djuric & Nivievskiy 2016).

The export ban considerably affected the domestic wheat markets in the South Caucasus region. During the 2010/11 wheat export ban, total wheat supply on the domestic markets decreased by 18% in Armenia, 12% in Azerbaijan and 7% in Georgia (USDA-FAS 2020). This was caused by the decrease of total wheat imports to the South Caucasian countries (Figure 3, Panel A). More specifically, the share of the Black Sea region in total wheat imports decreased significantly. The share decreased from almost 100% to 94% for Armenia, 89% for Azerbaijan and 93% for Georgia. Wheat imports from Kazakhstan, Russia and Ukraine were replaced by imports from more distant countries, such as Iran, Uzbekistan, Romania, Hungary and France.

However, since the Black Sea region did not restrict the export of wheat flour, the countries in the South Caucasus region replaced imports of wheat with that of wheat flour, mainly from Russia and Ukraine (Figure 3, Panel B). Wheat flour imports increased by three- and six-times in Armenia and Azerbaijan, respectively, during the wheat export ban period. However, importers in Georgia did not switch from wheat to wheat flour imports, as the import of wheat flour had been restricted in Georgia since April 2009 due to a tightening of phytosanitary standards to protect the domestic wheat flour market from imports of low-quality wheat flour (according to domestic wheat processors); the measure was removed in October 2012 with the change of government.

Figure 3: Imports of Wheat (2010–2019) and Wheat Flour (2009–2019) to the South Caucasus



Notes: RoW = "Rest of the World", i.e., all countries other than those mentioned by name. The shaded area corresponds to the wheat export ban in Russia during the 2010/11 marketing year. Since the data is provided for calendar years, 2010 and 2011 are indicated as years with the export ban.

Source: Own illustration; UN Comtrade (2020).

Conclusions

Even though the South Caucasian wheat markets are well integrated with the export markets in the Black Sea region, which ensures sufficient availability of wheat on their domestic markets, high dependence on wheat imports is particularly challenging during periods of crises such as the recent food prices crises and the current COVID-19 pandemic. Even though prospects of wheat production are good for the 2019/20 marketing year in the Black Sea region (USDA-WASDE 2020), Russia introduced a wheat export quota on 1 April 2020 limiting the total export volume to 7 million tons through July 2020, Ukraine set a limit of total wheat exports to 20.2 million tons for the marketing year 2019/2020 (of which 18 million tons has already been exported) and Kazakhstan has completely banned the export of wheat until October 2020 amid the COVID-19 pandemic (US Wheat Associates 2020).

Since the Black Sea wheat exporters have a history of restricting wheat exports in times of crisis, grain trade could remain at risk even in more efficient markets with modern transport infrastructure. The landlocked position of Armenia leaves little scope for diversification of wheat imports. However, wheat trade costs of Armenia would decrease if the border between Armenia and Azerbaijan, which is closed due to geopolitical conflict between the two countries, were opened at least for cargo transit. Armenia could then directly import wheat from Kazakhstan through Azerbaijan, substantially reducing wheat transportation costs and allowing for the diversification of its wheat import structure.

Therefore, due to their high dependence on wheat imports, the countries of the South Caucasus, particularly Armenia and Georgia, should complement their trade enhancing policies with agricultural policies aiming to boost domestic wheat production and to increase wheat self-sufficiency.

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