



## AGRICULTURE AND TRADE WITH RUSSIA

*Special Editors: PD Dr. Linde Götz and Dr. Miranda Svanidze—both Leibniz Institute of Agricultural Development in Transition Economies (IAMO), Halle (Saale)*

- Introduction by the Special Editors 2
- International Diversification of Agricultural Trade of Armenia, Azerbaijan and Georgia 3  
By Phatima Mamardashvili, Salome Gelashvili, Ia Katsia and Salome Deisadze  
(all International School of Economics at Tbilisi State University (ISET) Policy Institute, Tbilisi)
- “The Cradle of Wine Civilization”—Current Developments in the Wine Industry of the Caucasus 9  
By Sophie Ghvanidze, Linda Bitsch, Jon H. Hanf (all Hochschule Geisenheim University) and Miranda Svanidze (Leibniz Institute of Agricultural Development in Transition Economies (IAMO), Halle (Saale))
- Grain Import Dependency and Food Security in the South Caucasus 15  
By Miranda Svanidze and Linde Götz  
(both Leibniz Institute of Agricultural Development in Transition Economies (IAMO), Halle (Saale))

## Introduction by the Special Editors

Three countries in the South Caucasus region—Armenia, Azerbaijan, and Georgia—are bound by historical ties as members of the former Soviet Union. However, with the dissolution of the Soviet Union in 1991, the countries gained independence, and their economic systems became market-oriented. Nevertheless, even with political independence, the post-Soviet countries still highly depend on each other via the intensive trade linkages existing among them. Russia is the primary trade partner for all three countries, as it has a large consumption market (in the case of exports to Russia) and is abundant in natural resources (in the case of imports from Russia). For instance, within the context of agriculture, the South Caucasian countries have the highest agricultural trade volumes with Russia, representing 35% of total trade. Fruits and vegetables, mineral water, and alcoholic drinks are the major groups of products exported to Russia, while grain has the dominant position in the total food imports by the South Caucasus from Russia.

However, the development of trade relationships between the countries of the South Caucasus and Russia has not followed a linear trend. Rather, several shocks have led to fundamental changes in the Russian–South Caucasian trade relationships. These were, to name a few, the Russian sanctions on Georgian wine imports between 2006–2012, the entrance of Armenia to the Eurasian Customs Union since 2014, Georgia’s free access to the EU market within the DCFTA (the Deep and Comprehensive Free Trade Areas) agreement since 2016, the strong devaluation of the Russian currency, and the shift towards the agricultural import substitution policy, culminating in Russia’s food import ban against Western countries in August 2014.

This issue of the *Caucasus Analytical Digest* aims to shed light on the recent developments in the agricultural sector and, more specifically, on agricultural trade by the three South Caucasian countries.

Mamardashvili, Gelashvili, Katsia and Deisadze’s overview of major trends in agricultural trade shows that trade dependency on Russia is most pronounced for Azerbaijan and Armenia and is significantly lower for Georgia due to Russia’s embargo against Georgia’s food exports from 2006 to 2012. While the share of the EU in agricultural exports is moderate for all three countries, this share is highest for Georgia and lowest for Armenia.

Ghvanidze, Bitsch, Hanf and Svanidze focus on the wine industry in the South Caucasus, where wine has been cultivated for thousands of years. Under the Soviet Union, Armenian wine grapes were designated primarily for brandy production, while Azerbaijan had to focus on table grapes, and Georgia was appointed as a wine-producing republic. Therefore, while the history of winemaking remained unbroken in Georgia and the country preserved its wine culture, Armenia and Azerbaijan had to revitalize their wine sectors after the dissolution of the Soviet Union.

Svanidze and Götz point out that food security has improved during the transition period, although food insecurity is still prevalent in the countries of the South Caucasus, which are heavily dependent on wheat imports from Russia and to a limited degree from Kazakhstan and Ukraine. Wheat imports 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.

*PD Dr. Linde Götz and Dr. Miranda Svanidze—both Leibniz Institute of Agricultural Development in Transition Economies (IAMO), Halle (Saale)*

## International Diversification of Agricultural Trade of Armenia, Azerbaijan and Georgia

By Phatima Mamardashvili, Salome Gelashvili, Ia Katsia and Salome Deisadze  
(all International School of Economics at Tbilisi State University (ISET) Policy Institute, Tbilisi)

DOI: 10.3929/ethz-b-000442947

### Abstract

This paper describes the structure and development of agricultural trade of Armenia, Azerbaijan, and Georgia in the period 2002–2018. Despite different directions of economic integration followed by these countries, the CIS and Russia in particular have been major trade partners for all South Caucasus countries. Compared to its neighbors, Georgia is relatively less dependent on the Russian market, whereas Azerbaijan's trade dependency on Russia is the highest among the three countries. Moreover, Azerbaijan has the lowest trade diversification level compared to its neighbors. While the share of the EU in agricultural export is moderate for all three countries, this share is highest for Georgia. Increased diversification of agricultural trade would contribute to the stable development of these countries, by reducing their vulnerability to various external shocks as well as upgrading their food systems.

### Introduction

Independence after the end of the Soviet Union has transformed the agricultural value chains of Armenia, Azerbaijan, and Georgia, including patterns of their agricultural trade. The three countries have started to explore new trade partners. A better integration with Western economies may contribute to modernizing agricultural value chains (e.g., upgrading food production standards) of the South Caucasus countries, leading to more efficient food systems and better export performance. Further, the diversification of agricultural trade is important for reducing countries' vulnerability to external shocks.

This paper analyses the structure and development of agricultural trade of Armenia, Azerbaijan, and Georgia in the period 2002–2018. The first section provides an overview of the features of agricultural trade of Armenia, Azerbaijan and Georgia, focusing on developments in size and composition of agricultural trade and main trade partners. The second section calculates trade diversification indices and outlines the importance of Russia in agricultural trade of the South Caucasus countries. The final section summarizes main findings and provides concluding remarks.

### Characteristics of Agricultural Trade

#### *Armenia*

Before the collapse of the Soviet Union, agriculture was responsible for less than 20% of total employment in Armenia. The importance of agriculture increased after independence, and the sector contributed around 30% of total GDP and employed 40% of the country's total workforce in the 1990s (Millns 2013). Agriculture is still a significant contributor to economic output in Armenia, as it accounted for 13.7% of total GDP and around 30% of employment in 2018 (World Bank 2020).

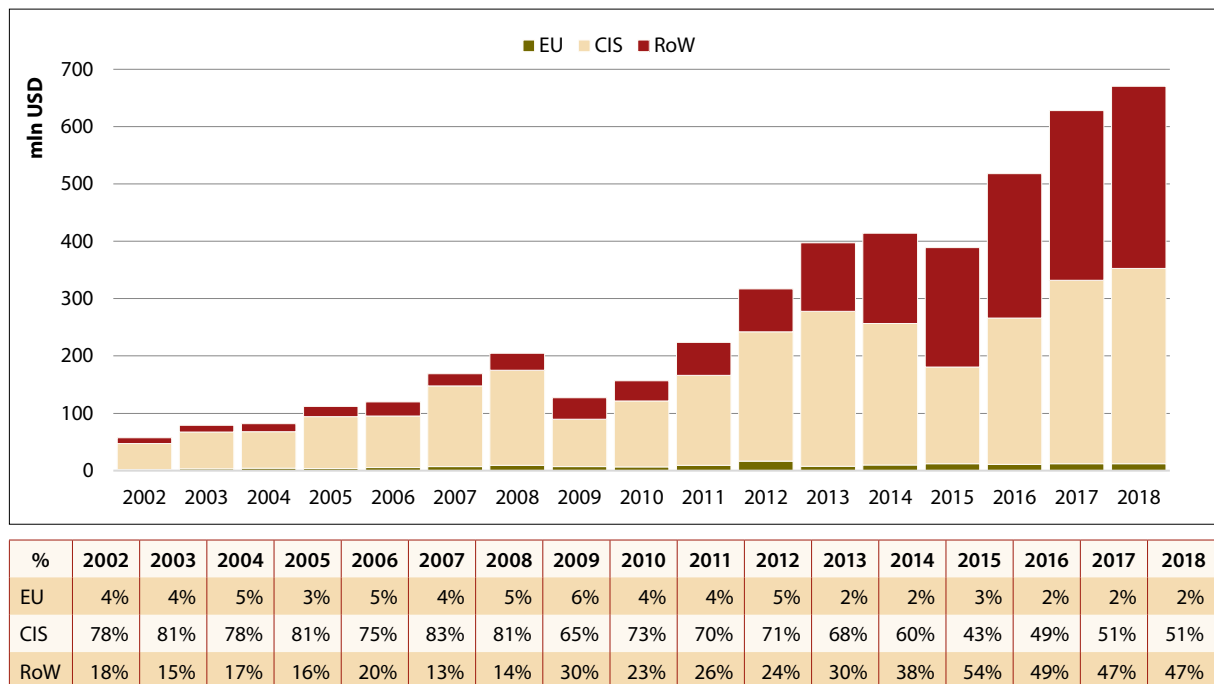
The country is characterized by a liberal foreign trade policy, with relatively low tariffs. Since 2015, Armenia has been a member of the Eurasian Economic Union (EAEU). This membership increased Armenia's average applied tariffs from 2.7% in 2009 to 7.5% in 2018 (WTO 2018). Armenia has Free Trade Agreements (FTAs) with member countries of the Commonwealth of Independent States (CIS) as well as with Iran. In 2017, Armenia and the European Union signed the Comprehensive and Enhanced Economic Partnership Agreement (CEPA), aiming at strengthening economic and political partnership between the two.

Armenia had a negative trade balance for agricultural products during the period 2002–2018 (Trademap 2020). Agricultural exports increased in value more than elevenfold, from \$57 million in 2002 to almost \$671 in 2018 (Figure 1). However, in 2009 the total agricultural exports dropped by 38% compared to 2008. In 2009 Armenia faced a severe economic recession, with GDP declining more than 14% due to the Global Financial Crisis (FAO 2009). The recovery was hindered by severe drought in 2010, which caused a significant decline in agricultural GDP (by 15.9%). The agricultural sector managed to recover after this period and has grown steadily since, with an average annual growth of 10% from 2011–2015 (Christensen 2017).

CIS countries are the largest consumers of Armenia's agricultural exports, but their proportion has been steadily decreasing, from 78% in 2002 to 51% in 2018 (Figure 1). In 2009, Georgia, which is one Armenia's main export partners, left CIS, which led to decreased share of CIS countries as a proportion of Armenia's agricultural exports, from 81% to 65%.<sup>1</sup> Another big decrease in share of Armenian agricultural exports bound for CIS countries was observed in 2015, when the corresponding share decreased from 60% to 43%, reflecting a 32% decrease in exports to Russian Federation. This can be explained by the one-year restrictions on imports of agricultural goods imposed by the Russian Federation in 2014 (President of Russia 2020)<sup>2</sup> as well as the strong devaluation of the Russian Ruble in 2014–2015.

During the period 2002–2018, the EU's share in Armenia's export was stable, but very moderate and constituted on average only 2–6% of total agricultural exports (Figure 1).

**Figure 1: Agricultural Exports of Armenia**



Source: Trademap, 2020

The composition of top import and export partners did not change significantly in 2002–2018. Russia remains Armenia's largest trade partner, importing 49% of total Armenian agricultural exports in 2018. As for the top five export partners of Armenia in 2018, Russia is followed by Iraq (22%), Syria (8%), the United Arab Emirates (5%), and Georgia (4%).

### Azerbaijan

Prior to the end of the nineteenth century Azerbaijan was a primarily agrarian economy (CESD 2014). However, after discovering its rich natural resources, the country evolved from its agrarian economy into one of the world's major exporters of oil and gas (CESD 2014). Frequent volatility in oil prices affected the country's strategic vision, and current state policies are directed towards export diversification and strengthening domestic agricultural production to eventually supplant food imports (Berkum 2017). In 2018, agriculture accounted for 5.2% of GDP and 36% of employment (World Bank 2020).

During 2002–2018, Azerbaijan had a negative agricultural trade balance (Trademap 2020). CIS countries have the biggest share in Azerbaijan's agricultural exports, and their proportion increased during the 2002–2018 period. In 2002, the share of CIS countries in Azerbaijan's agricultural exports was 52%, reaching 78% in 2018 (Figure 2). In 2009, the share of CIS countries in Azerbaijan's agricultural exports decreased from 90% to 75% due to Georgia's exit from CIS.<sup>3</sup> The latter affected Azerbaijan's exports to CIS in 2010 as well. Another significant decrease in share of CIS countries in Azerbaijan's agricultural exports was observed in 2015, reflecting a 36% decrease in exports to Rus-

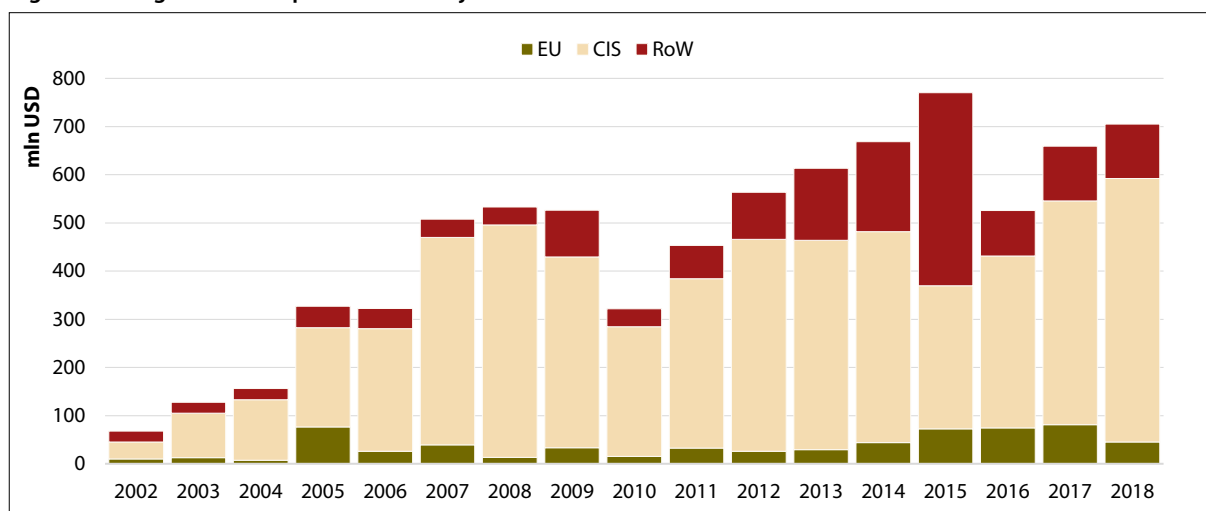
<sup>1</sup> During 2004–2008, on average 13% of Armenia's agricultural export in CIS countries were destined to Georgia.

<sup>2</sup> <http://en.kremlin.ru/events/president/news/46404>

<sup>3</sup> During 2004–2008, on average 13% of Armenia's agricultural export in CIS countries were destined to Georgia.

sia due to the Russia's one-year ban on imports of particular agricultural goods in 2014 (President of Russia 2020)<sup>4</sup> as well as the aforementioned devaluation of the ruble.

**Figure 2: Agricultural exports of Azerbaijan**



%	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
EU	15%	10%	5%	23%	8%	8%	2%	6%	5%	7%	5%	5%	7%	9%	14%	12%	6%
CIS	52%	72%	81%	63%	79%	85%	90%	75%	84%	78%	78%	71%	66%	39%	68%	71%	78%
RoW	33%	18%	15%	14%	13%	7%	7%	18%	12%	15%	17%	24%	28%	52%	18%	17%	16%

Source: Trademap, 2020

As to the exports to EU countries, the share of Azerbaijani agricultural exports bound for EU countries was very moderate and averaged 9% in the period 2002–2018. An exception was 2005, in which EU countries accounted for 23% of Azerbaijan's agricultural exports. This was mainly caused by increased exports of fruits and nuts to EU countries by more than 15 times (Trademap 2020).

Despite some efforts to diversify export markets, Russia remains Azerbaijan's largest export market, with a share of 74% in Azerbaijan's total agricultural exports in 2018. Apart from Russia, Azerbaijan's top export markets include Georgia, Turkmenistan, Italy and Germany.

To support trade diversification, the state has established an export promotion agency, AZPROMO, which supports exports of non-oil products and now has offices in many countries (O'Connell and Hradzsky 2018). This initiative may also contribute to Azerbaijan's accession to the WTO, heretofore hindered by the country's restrictive trade regimes and excessive focus on oil exports.

### Georgia

Georgia has traditionally been an agrarian country and agriculture still constitutes an important part of the country's economy. The sector's share in Georgia's total employment is 39% (GeoStat 2020). Agricultural exports constitute an important part of Georgia's economy, accounting for about 25–30% of the country's total exports (Deisadze, Mamardashvili and Zhorzholiani 2019).

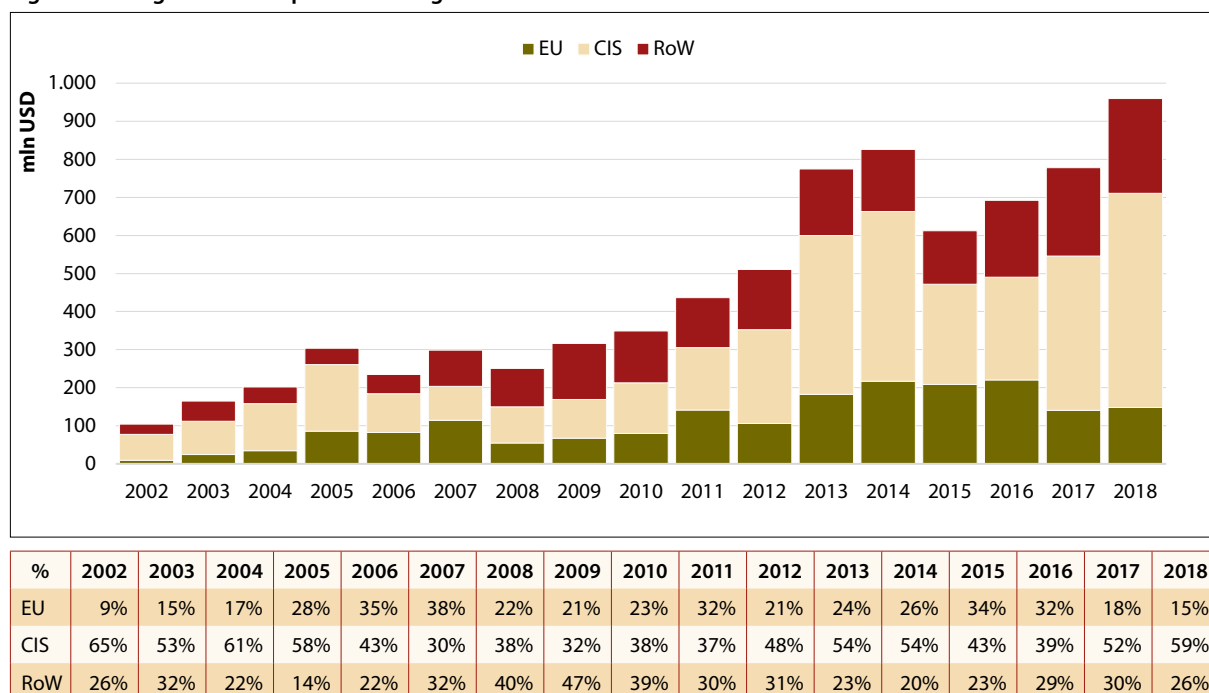
Georgia has a liberal foreign trade policy that is reflected in the country's tariff policies on imports, with an average applied MFN tariff of 2% and the simple average MFN agriculture tariff of 6.3% in 2015 (WTO, ITC and UNCTAD 2016). The country has FTAs with CIS countries, the EU, Turkey and China. In 2014, Georgia and the EU signed an Association Agreement (AA), including the integral Deep and Comprehensive Free Trade Area (DCFTA), which came into force in 2016.

Georgia is a net importer of agricultural products. During the period 2002–2018, the values of both Georgia's agricultural exports as well as agricultural imports have exhibited an upward trend. In 2018, the most important export destinations of Georgia's agricultural exports were Russia (25%), Azerbaijan (16%), Ukraine (9%), Kazakhstan (7%) and Armenia (6%) (Trademap 2020).

<sup>4</sup> <http://en.kremlin.ru/events/president/news/46404>

CIS countries are among the largest trade partners for Georgia, with a share of 59% and 23% of the country's agricultural exports and imports in 2018, respectively (Trademap 2020). Georgia's agricultural exports decreased by 23% in 2006 after Russia imposed an embargo on Georgian exports. Consequently, the share of exports bound for CIS countries decreased from 43% to 30%. After the embargo was ended in 2013, the share of CIS countries in Georgian agricultural export increased again, to 54% (Figure 3). In 2015, the share of CIS countries in Georgia's agricultural exports decreased from 54% to 43%, reflecting decreased exports to Russia by 45% due to its one-year ban on imports of agricultural goods in 2014 (President of Russia 2020)<sup>5</sup> as well as the 2014–15 ruble devaluation.

**Figure 3: Agricultural Exports of Georgia**



Source: Trademap, 2020

The EU accounts for a smaller share of the Georgian agricultural exports, varying between 9%–38% (Figure 3). In 2016, when the DCFTA came fully into force, the value of agricultural exports to the EU increased by 6%. Georgia's agricultural exports to the EU decreased by 36% in 2017, reflecting a significant decrease in hazelnut exports. The main reasons for this decrease were various fungal diseases and the Asian Stink Bug invasion in 2017, reducing hazelnut production (Deisadze, Mamardashvili and Zhorzholiani 2019).

Georgia is still highly dependent on the Russian market, exposing it to additional economic risk (e. g. the 2006–2013 Russian embargo). To diversify its agricultural export and reap the potential benefits of DCFTA, the country should undergo dynamic changes in agricultural value chains. Better education, improving information on EU markets, organizing tours for entrepreneurs from EU to Georgia, investing in trade infrastructure, setting up collection centers and focusing on quality improvements of agricultural goods are among the needed changes (Koester, 2017). Complying with EU food safety standards should be considered a long-term investment that will open export markets for Georgia's agricultural products not only in the EU, but in other countries with similar requirements (Von Cramon-Taubadel, 2014).

### Trade Diversification and Importance of Russia as a Trade Partner

To measure agricultural trade diversification trends in the South Caucasus region, Herfindahl-Hirschman Indexes (HHIs)<sup>6</sup> were calculated for the last 17 years (Table 1). Results show that the agricultural trade of Armenia and Azerbaijan is characterized by "highly concentrated" export markets, whereas Georgia's agricultural exports became "diver-

<sup>5</sup> <http://en.kremlin.ru/events/president/news/46404>

<sup>6</sup> HHI is a common measure of the diversification of trade value across destinations or products. In this paper, we focused on the dispersion of agricultural trade by destination (geographic diversification index).

sified” after 2008. As for import markets, Armenia’s and Georgia’s agricultural imports are “diversified”, whereas Azerbaijan’s imports are “moderately concentrated”.

**Table 1: HHI for Armenia, Azerbaijan and Georgia**

Year	Azerbaijan		Armenia		Georgia	
	Export	Import	Export	Import	Export	Import
2002	Highly concentrated	Highly concentrated	Highly concentrated	Highly concentrated	Highly concentrated	Highly concentrated
2003	Highly concentrated	Highly concentrated	Highly concentrated	Highly concentrated	Highly concentrated	Highly concentrated
2004	Highly concentrated	Highly concentrated	Highly concentrated	Highly concentrated	Highly concentrated	Highly concentrated
2005	Highly concentrated	Highly concentrated	Highly concentrated	Highly concentrated	Highly concentrated	Highly concentrated
2006	Highly concentrated	Highly concentrated	Highly concentrated	Highly concentrated	Highly concentrated	Highly concentrated
2007	Highly concentrated	Highly concentrated	Highly concentrated	Highly concentrated	Highly concentrated	Highly concentrated
2008	Highly concentrated	Highly concentrated	Highly concentrated	Highly concentrated	Highly concentrated	Highly concentrated
2009	Highly concentrated	Highly concentrated	Highly concentrated	Highly concentrated	Highly concentrated	Highly concentrated
2010	Highly concentrated	Highly concentrated	Highly concentrated	Highly concentrated	Highly concentrated	Highly concentrated
2011	Highly concentrated	Highly concentrated	Highly concentrated	Highly concentrated	Highly concentrated	Highly concentrated
2012	Highly concentrated	Highly concentrated	Highly concentrated	Highly concentrated	Highly concentrated	Highly concentrated
2013	Highly concentrated	Highly concentrated	Highly concentrated	Highly concentrated	Highly concentrated	Highly concentrated
2014	Highly concentrated	Highly concentrated	Highly concentrated	Highly concentrated	Highly concentrated	Highly concentrated
2015	Highly concentrated	Highly concentrated	Highly concentrated	Highly concentrated	Highly concentrated	Highly concentrated
2016	Highly concentrated	Highly concentrated	Highly concentrated	Highly concentrated	Highly concentrated	Highly concentrated
2017	Highly concentrated	Highly concentrated	Highly concentrated	Highly concentrated	Highly concentrated	Highly concentrated
2018	Highly concentrated	Highly concentrated	Highly concentrated	Highly concentrated	Highly concentrated	Highly concentrated

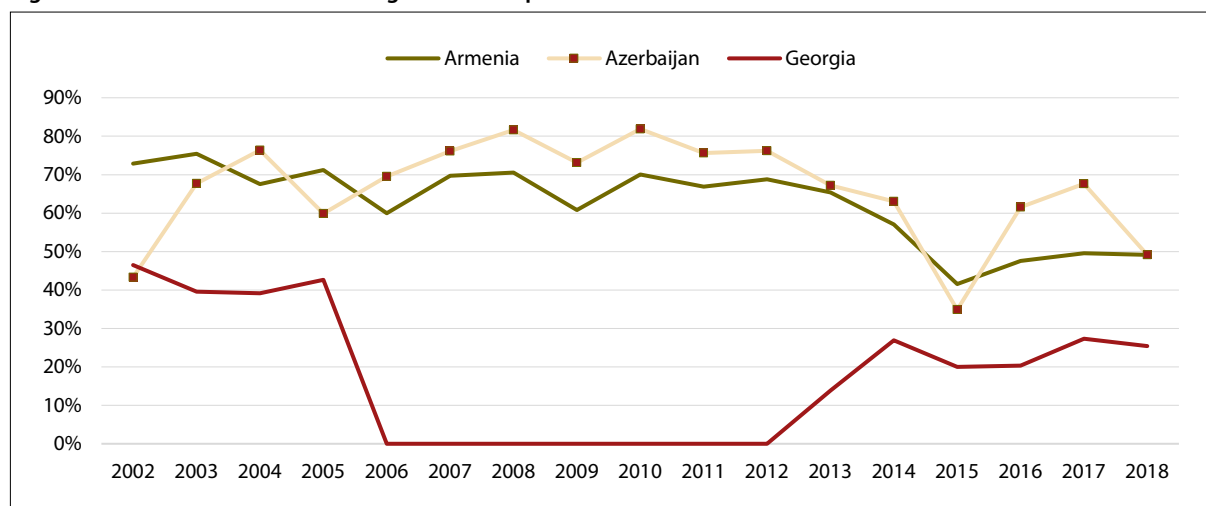
**Note:**

Color code	HHI value	Type of market
Lightest shade	less than 1500	“diversified”
Medium shade	1500–2500	“moderately concentrated”
Darkest shade	more than 2500	“highly concentrated”

Source: Authors’ calculations; Trademap 2020

Russian Federation tops the list of largest trading partner of Azerbaijan, Armenia and Georgia, and its share in total agricultural exports was 74%, 49% and 25%, respectively in 2018. Georgia did not trade agricultural products with Russia in 2007–2012 (Russia’s share is 0%) due to the embargo imposed by Russia; after the lifting of the embargo, Russia’s share significantly increased, but never again reached pre-embargo levels (Figure 4).

**Figure 4: Russia’s Share in Total Agricultural Exports**



Source: Trademap 2020

## Conclusions

Agricultural trade in the countries of the South Caucasus is characterized by high dependency on regional markets. The composition of main export and import markets has remained more or less the same over the last 17 years (2002–2018), and CIS nations have been the main trade partners for export and import of agricultural goods of three countries during this time period. In 2018, the CIS share of agricultural exports was 51%, 78% and 59% in Armenia, Azerbaijan and Georgia, respectively. As for imports, in 2018 37% of agricultural goods entering Armenia originated in CIS countries, while the same indicators for Azerbaijan and Georgia are 11% and 23%, respectively (Trademap 2020). This trend is related not only to the proximity and the existence of traditional ties with nations of the former Soviet Union, but also to lower quality requirements and weaker competition in CIS markets compared to Western markets.

Even though the South Caucasian countries have chosen different directions in terms of their economic and political integration, Russia has remained an important trade partner for all three countries over the last 17 years. Agricultural export trends of Armenia and Azerbaijan have shown particularly high dependence on Russia in recent years; in 2018, 49% and 74% of their agricultural exports went to Russia, respectively (Trademap 2020). Russian embargo on Georgia's agricultural exports in 2006 led to a considerable decline in Georgian agricultural exports in 2007. Yet Georgia's agricultural exports to Russia were quickly resumed after the embargo was lifted in 2013, and Russia's share of the country's agricultural exports increased to 25% in 2018 (Trademap 2020). A notable decline in the agricultural exports of Armenia and Georgia in 2015, as well as a decline of Russia's share in agricultural exports of all three countries in that year, coincides with the period of strong devaluation of the Russian Ruble (2014–2015), hinting at the spillover effect of this devaluation on Russia's trade with the South Caucasus countries.

During the last two decades, the South Caucasus countries have also started to explore new trade partners. While the process of market diversification has been moderate in all three countries, it has been highest in Georgia and lowest in Azerbaijan. The more diversified trade of Georgia compared to its neighbors can be explained by diversification pressure created by the Russian embargo in 2006 as well as general aspirations of Georgia to become more integrated with Western countries. While all three countries trade with EU countries, the EU share of both agricultural exports and imports are highest for Georgia. Nevertheless, no consistent trend of increased agricultural exports to the EU could be observed for Georgia after DCFTA went into force (2016). In 2017–2018 this share even went down due to the decrease of hazelnut exports (the main agricultural export of Georgia to the EU). Obstacles in exporting to the EU are related not only to tariffs but also to non-tariff trade barriers. In this regard, both DCFTA (between Georgia and the EU) and CEPA (between Armenia and the EU) aspire to parity with EU regulations and standards. While this approximation is related to high initial costs (particularly for Georgia, which has stricter obligations with this regard), in the long run it has a potential to facilitate the development countries' agricultural sectors and food systems and increase their agricultural exports to EU countries.

### *About the Authors*

*Phatima Mamardashvili* is Assistant Professor at ISET and also serves as the head of the Agricultural Policy Research Center (APRC) at the ISET Policy Institute. Phatima received her Dr.Sc. degree from ETH Zurich (2013), her M.Sc. in Agricultural Sciences with a major in Food and Resource Economics from ETH Zurich (2009) and her Bachelor's degree in Agriculture from the Georgian State Agricultural University (2005).

*Salome Gelashvili* is Deputy Head of the Agricultural Policy Research Center (APRC) at ISET Policy Institute. She has a BA in Business Administration from Tbilisi State University (2009) and an MA in Economics from ISET (2011).

*Ia Katsia* is a senior researcher at the Agricultural Policy Research Center (APRC) at ISET Policy Institute. She received her BSc in Business Administration from Akaki Tsereteli State University in 2011 and holds a MA in Economics from ISET (2014).

*Salome Deisadze* is a senior researcher the Agricultural Policy Research Center (APRC) at ISET Policy Institute. She holds a BA in Economics and Business Administration concentration Macroeconomics from Tbilisi State University (TSU) and MA in Economics from ISET (2016). Currently, Salome Deisadze is a PhD student at TSU.

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## “The Cradle of Wine Civilization”—Current Developments in the Wine Industry of the Caucasus

By Sophie Ghvanidze, Linda Bitsch, Jon H. Hanf (all Hochschule Geisenheim University) and Miranda Svanidze (Leibniz Institute of Agricultural Development in Transition Economies (IAMO), Halle (Saale))

DOI: 10.3929/ethz-b-000442947

### Abstract

Wine has been cultivated in the Caucasus for thousands of years. Caucasian viticulture experienced its greatest evolution and development during Soviet rule. However, Gorbachev's anti-alcohol policy and the transformation processes in the 1990s led to a dramatic decline in wine production. For the last 15 years, the viticulture in this region has experienced rediscovery, renewal, and growth. Although Russia remains the largest and most important export market for the wines from Georgia, Armenia, and Azerbaijan, all three countries try to diversify export destinations and to penetrate non-CIS countries. The following article outlines the developments in the wine industry of these three Caucasian countries and identifies similarities between them.

### Introduction

The Caucasus mountain range, with a length of 1100 km, runs between the Black and Caspian Sea. It is located within the borders of Russia, Georgia, Armenia, and Azerbaijan. Despite the diverse cultural heritage and distinct national

identities, the region has been known as “the cradle of viticulture”. The archeological findings of 6,000 years old seeds in Georgia and a 6,100-year-old cave used as a winemaking facility in Armenia constitute the earliest recorded evidence of winemaking. Additionally, the presence of over 500 unique indigenous grape varieties in the region indicate the deep-rooted history of winemaking and wine production (Barnard et al. 2011). Thus, viticulture has played a major role in these countries for many thousands of years. In the 1980s, during the Soviet period the area under vine reached its peak of expansion.

In the mid-1980s, the mortality rate of the population—especially among males—was significantly higher than in the “West” due to alcohol abuse. Additionally, alcohol abuse caused massive economic issues. Consequently, Mikhail Gorbachev introduced an anti-alcohol campaign in 1985. This prohibitive law had led to extensive grubbing-up of vineyards and restrictions on alcohol production. Due to these measures, the land area covered by vineyards fell by more than 50% in Armenia, Azerbaijan and Georgia. After the dissolution of the Soviet Union in 1991, being accompanied by wars of secession, privatization processes, and economic crisis, the viticulture in the Caucasus experienced its lowest level of around 60,000 ha.

Over the last fifteen years, the area covered by vineyards has rebounded and the production of wine in volume has risen. Moreover, the wine quality has increased considerably to meet the requirements of new export markets that have been tackled alongside the traditional export markets of the former Soviet Union. The aim of this article is therefore to outline the recent these developments in the three Caucasian countries, and to identify similarities.

## Developments in the Wine Industry of the Caucasus Region

### *The Wine Industry in Armenia*

Before becoming a part of the Soviet Union, Armenia produced mainly wine and table grapes. Within the Soviet Union, Armenia had to focus on brandy production (80–90% of grape production was used for brandy) (Khachtryan & Oppen 1999). This led to a big change in the Armenian wine culture (Bitsch, Ghvanidze & Hanf 2019).

The grape production area has gone through a tremendous decline after its 1980 peak of 36,200 ha. During the Soviet-times, Armenia processed more than 200,000 tons of grapes annually mostly for brandy, as well as some wine and sparkling wine. The major part of the production was consumed in Russia and the Soviet Union (Johnson & Robinson 2013). Nowadays, the vineyard area stretches over 17,000 ha (NSS 2016), from which around 2,500 ha are used for winemaking, while the majority (14,500 ha) is still used for brandy and table grape production (Urutyanyan 2017). The share used for table wine production is stable, but a steady increase in productivity is noticeable (NSS 2016). Overall, there are 35 wineries producing and selling table wine. This number has more than doubled within the last 10 years, as in particular more small-scale wineries were established (Bitsch 2017).

In 2017, overall, 66,544 farmers cultivated grapes on an average plot size of 0.23 ha (Urutyanyan 2017). Many smallholders cannot manage to finance winemaking facilities and/or get access to the market to sell the high-valued final products. Therefore, the farmers are heavily dependent on selling their grapes to the few operating wineries (Hanf et al. 2019). Most of the sales are organized through oral agreements or contracts based on quantity and trust (Hanf et al. 2016; Bitsch 2017). However, there is a current trend among wineries towards in-house grape production to control grape quality and yields, as well as variety (Hanf & Marquardt 2014; Bitsch 2017).

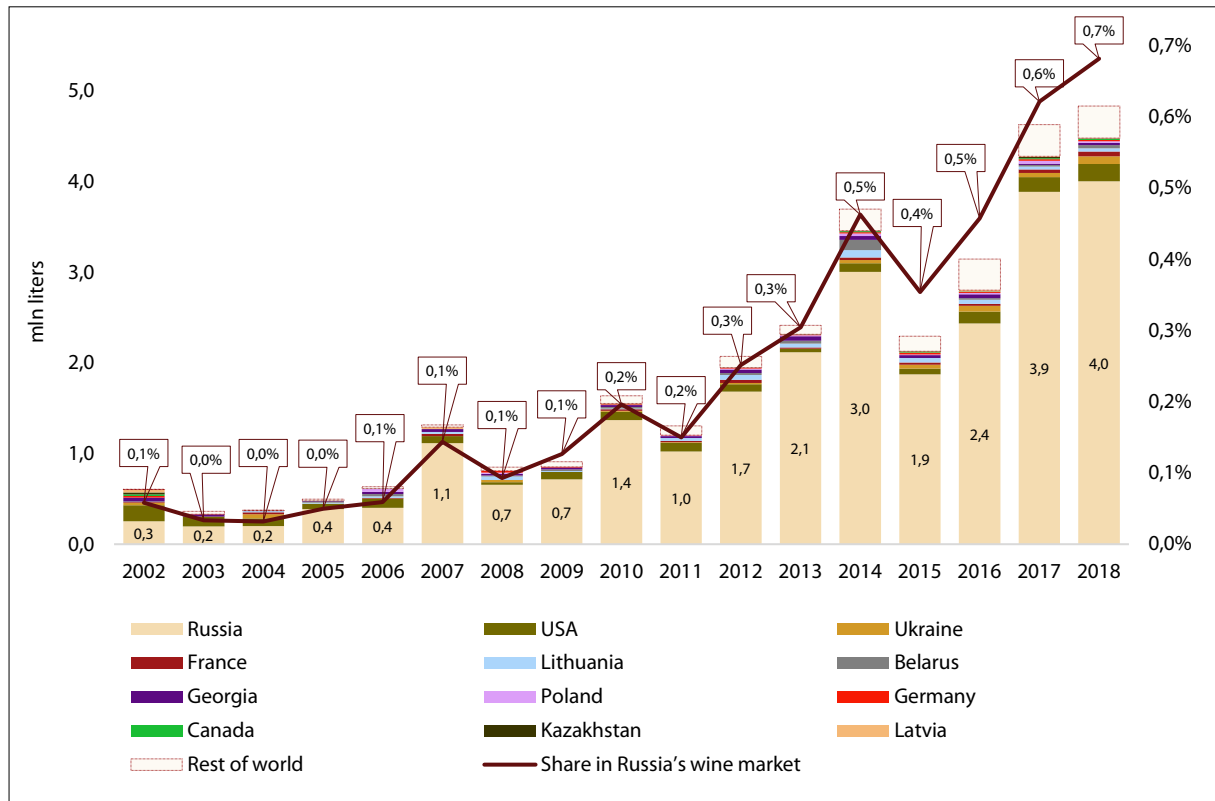
Nowadays, the wine industry is still a key industry for Armenia and is emerging and developing positively (VWFA 2019). Until now, though, most Armenian wine-producing companies strongly focused on wine exports, as export developments were overall positive. Russia is by far the most important export market, accounting for 90% of all exports followed by the USA, Ukraine, France, Lithuania and others (Figure 1 overleaf). Since Armenian wine exports are so undiversified, economic shocks occurring in the Russian market directly affect Armenia’s wine export dynamics. The strong devaluation of the Russian Ruble in 2014 resulted in a large decrease of Armenian wine exports (up to – 40% in one year). However, the wine exports recovered, market share was regained and wine exports are increasing again.

The local demand for wine is steadily increasing (VWFA 2018; Harutjunjan et al. 2020). The growing number of wine bars and restaurants and availability of imported and domestic wines in supermarkets and restaurants in Armenia’s capital Yerevan underline this evolution. Nowadays, especially the young population, seems to be interested in wine and is willing to spend money on it (BBC 2019; Harutjunjan et al. 2020).

### *The Wine Industry in Azerbaijan*

At the beginning of the 1980s Azerbaijan was one of the major wine producers of the Soviet Union, with over 200,000 ha vine cultivation. The produced wine was exported to Armenia and Georgia. Due to the “anti-alcoholism campaign”

Figure 1: Wine Export of Armenia (volume)



Source: Comtrade (2020)

as well as the transformation process the area under cultivation was reduced to merely any production at all in the beginning of the new millennium (Musayev & Akparov 2013). Since then the area under cultivation has increased again (Hanf 2015).

In 2014, in Azerbaijan, a total area of 16,115 ha of agricultural land was covered by vineyards (SSCRA 2014). About 40% of the total grape production, corresponding to approximately 65,000 tons of grapes, is used to produce wine and 40% is consumed as table grapes (Burchell et al. 2014). 10,000–15,000 tons of these grapes are used for the production of sparkling wine and brandy (SSCRA 2014).

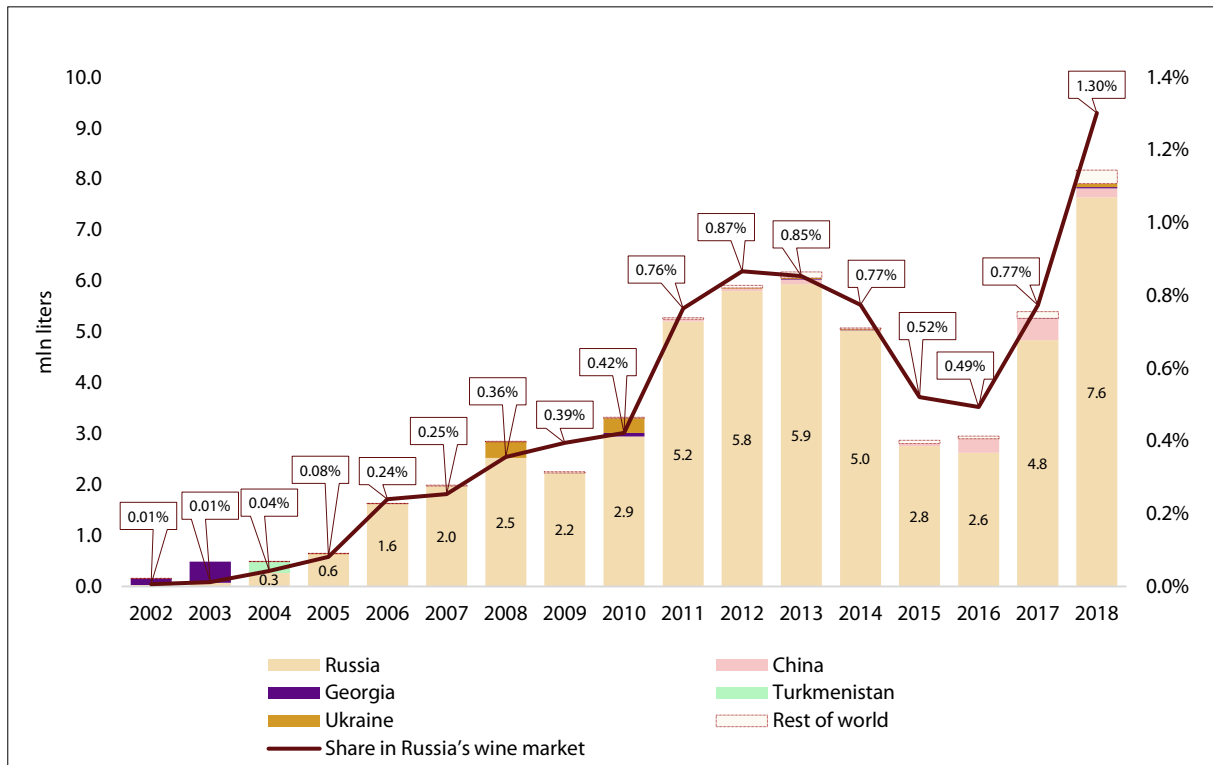
The vast majority of grapes (87%) are grown by very small grape producers (less than 1 ha). The remaining 13% are grown by seventeen large-scale wine producers (Hanf 2016). Total wine production in Azerbaijan is about 200,000 hl a year, but the yearly consumption is only 100,000 hl, resulting in a surplus of about 100,000 hl (Hanf et al. 2014).

The majority of wines consumed in Azerbaijan are domestically produced; only 15,000 hl of wine is imported annually. The main part of wine imports (12,000 hl) originates from Moldova, followed by France, Belgium, Italy, the United Kingdom, and Germany (SSRCA 2014).<sup>1</sup>

According to FAO, Azerbaijan exported nearly 40% of its total wine production in 2011. The vast majority of this wine leaves Azerbaijan in the direction of Russia (FAO Statistics 2014). However, Azerbaijan wine exporters have started searching for new markets and have expanded wine exports to China (Figure 2 overleaf). Due to the domestic overproduction of wine, a general willingness to increase exports can be observed (Hanf et al. 2014).

<sup>1</sup> It is not clear why Georgian wine imports do not appear in this statistic since the results of store checks show that the biggest proportion of foreign wine sold in supermarkets and restaurants originates from Georgia. Georgian wine may be listed among the category "Other countries" but it seems that the amount of imported Georgian wine is bigger than the ones from France or Italy. Moldovan wine, in contrast, could not be found in any shops or restaurants sampled. In the GIZ-expert workshop, it was established that most probably Moldovan wine is used for re-export to Russia and other countries and thus, does not appear in on- or off-trade sales channels in the domestic market. Some experts think that this re-exported volume of Moldovan wine might be substituted by genuine wine from Azerbaijan. However, it seems as this re-exported wine is rather cheap bulk wine exports. As UK is re-exporting particularly wines from New World countries, UK can be understood as a proxy for wines from the New World. (Hanf et al. 2014).

Figure 2: Wine Export of Azerbaijan (volume)



Source: Comtrade (2020)

### The Wine Industry in Georgia

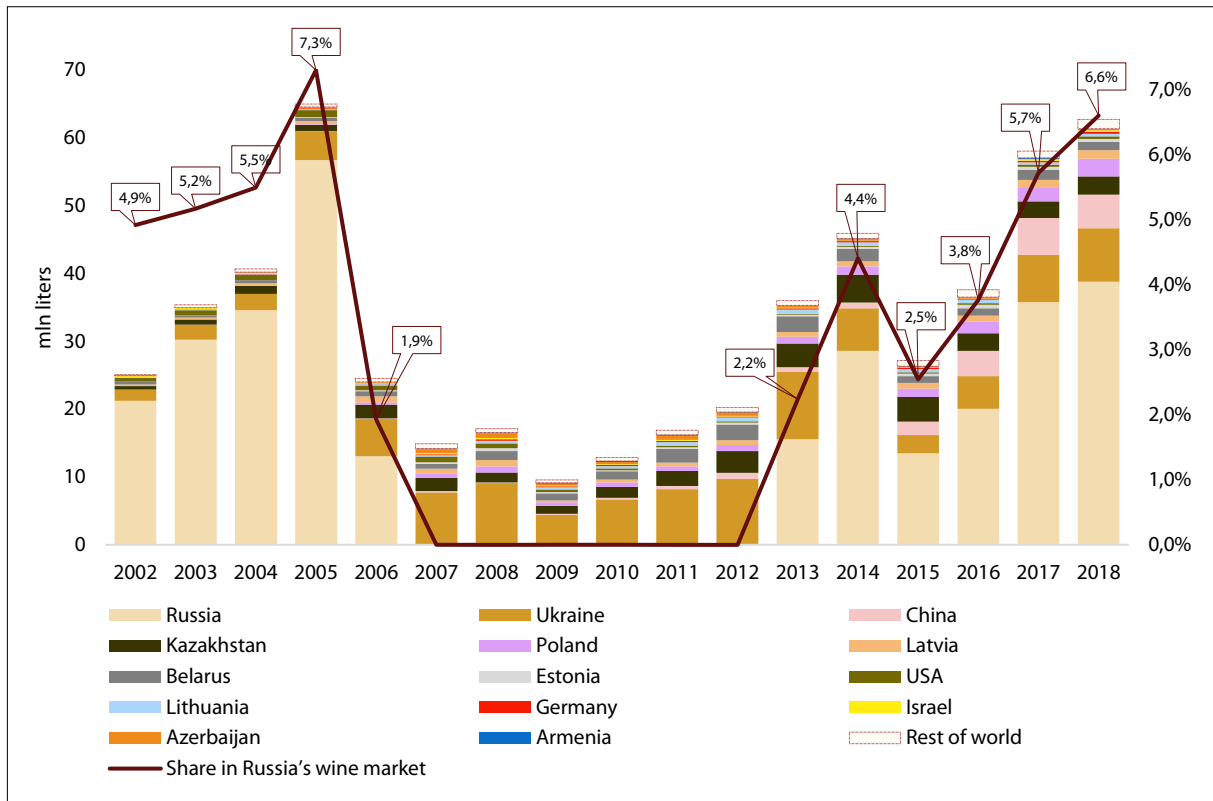
In the mid-1980s, 160,000 hectares of wine was cultivated in Georgia. Due to the above-mentioned prohibitions and transformation process, the area under cultivation declined to 62,000 ha at the end of the 1990s (FAOSTAT in DWVG, 2010). Today, 55,000 ha of vineyards are being cultivated (OIV 2019).

Nearly 36,000 households, small wine-grape growers owning up to 1 ha are currently involved in viticulture and grape production (NSO 2020; Kvariani & Ghvanidze 2015), mostly producing grapes for home processing, for their own consumption and for informal sale in their rural areas<sup>2</sup> (Anderson 2012). The quality of the grapes of small-holder producers does not meet the requirements of the commercial wineries. While they struggle to sell their surplus grapes, the commercial wineries increasingly plant their own vineyards to ensure the quality of grapes (Kvariani & Ghvanidze 2015).

Officially, in 2017, Georgia produced 117,000 liters of wine (Wine Institute 2017). The Georgian wine industry has experienced rapid expansion over the past six years. The entire industry is going through a period of rediscovery, renewal, and growth. The number of registered wineries has increased from 80 in 2006 to 961 in 2018 (GNW in Granik 2019).

During the Soviet period, Russia and other Soviet countries were the most important export destinations. After Russia imposed a wine embargo on Georgian wine in 2006, Georgia lost 87% of its export market and Georgian wine exports fell by 62% compared to the previous year (Figure 3 overleaf). Despite the significant negative effect of the Russian embargo on the Georgian wine industry and the entire economy of the country, it offered at the same time the opportunity to Georgian winemakers to improve the quality of their wines and to diversify their export markets (Ghvanidze 2012). Georgian wine penetrated non-CIS countries such as the USA, China, UK, Germany, and Poland (Figure 3). Since 2012, when the Russian market was reopened, the majority of Georgia's wine exports again shifted mostly to Russia; however, its share has fallen from 87% in 2005 to 62% in 2018. The Georgian National Wine Agency reported that in 2018 Georgia exported 86.2 million bottles of wine to 53 countries, the highest value in 30 years (Agenda.ge 2019).

2 Neither production nor sales of homemade wines are included in the country's official statistics.

**Figure 3: Wine Export of Georgia (volume)**

Source: Comtrade (2020)

A transformation of wine consuming culture can be observed in today's Georgia, especially among the young generation. They consider wine not only as a beverage for toasts during social gatherings, but they are also interested to explore more about the provenance of wine stemming outside of Georgia. The number of wine bars, as well as institutions, offering training classes for wine professionals and enthusiasts is rapidly increasing (Granik 2019). Moreover, the rising numbers of tourists and the rapidly growing process of urbanization will stimulate further demand for Georgian commercial wines in the domestic market.

## Conclusion

South Caucasian countries have a long history of winemaking. Notwithstanding Gorbachev's "dry law" and the decline in wine grape production associated with the 90s economic recession, winemaking is gaining further interest in the region even today. However, viniculture had to follow a different path of development in the Caucasian countries during the communist period. In particular, Armenian wine grapes were designated primarily for brandy production, whereas Azerbaijan had to focus on table grapes and Georgia was appointed as a wine-producing republic. Therefore, while the history of winemaking remained unbroken in Georgia and the country preserved its wine culture, Armenia and Azerbaijan had to revitalize their wine sectors after the dissolution of the Soviet Union.

Wine production became increasingly popular in the South Caucasus region during the last decade, accompanied by the emergence of many small-scale wineries as well as large wine producers in Armenia, Azerbaijan and Georgia. However, since the market for bottled wine is only gradually evolving in the region, local demand still falls short of supply. Consequently, wine has taken a leading position in agricultural exports, particularly in Armenia and Georgia, where the share of alcoholic beverages accounts for 35% and 50% of total agricultural exports, respectively (Comtrade 2020).

As wine from Georgia, brandy from Armenia, and table grapes from Azerbaijan were very popular in the Soviet Union, wine exports from these countries mainly followed the same trend even after those countries gained independence. Although Russia is still the largest export market, the demand for wine from the South Caucasus region is slowly but steadily increasing in non-CIS countries as well. Given the recently-experienced economic shocks in Russia accompanied by declining wine exports, it would be to Caucasian wine producers' advantage to diversify export destinations and ensure long-term stability of their export revenues.

*See overleaf for information about the authors and a bibliography.*

### About the Authors

*Sophie Ghvanidze* is a lecturer at Geisenheim University in the chair of International Marketing Management. She holds a Ph.D. Degree in Agribusiness from Georg-August-University Göttingen and an MA degree in International Management from the University of Applied Sciences Bochum.

*Linda Bitsch* is a PhD student at Geisenheim University associated with the chair of International Marketing Management. She received her MS degree in International Wine Business from the Justus-Liebig-University Giessen.

*Jon H. Hanf* holds the chair of International Marketing Management and is the Head of all Wine Business Programs at Geisenheim University. He accomplished his habilitation as well as received his PhD from Justus-Liebig-University Giessen.

*Miranda Svanidze* is a research associate at the Department of Agricultural Markets at IAMO. She holds a PhD degree from Martin-Luther University, Halle and an MA degree in Economics from the International School of Economics at Tbilisi State University (ISET), Georgia.

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## Grain Import Dependency and Food Security in the South Caucasus

By Miranda Svanidze and Linde Götz

(both Leibniz Institute of Agricultural Development in Transition Economies (IAMO), Halle (Saale))

DOI: 10.3929/ethz-b-000442947

### 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 undernourishment<sup>1</sup> 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 <sup>a</sup>	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 ratio<sup>2</sup> 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-

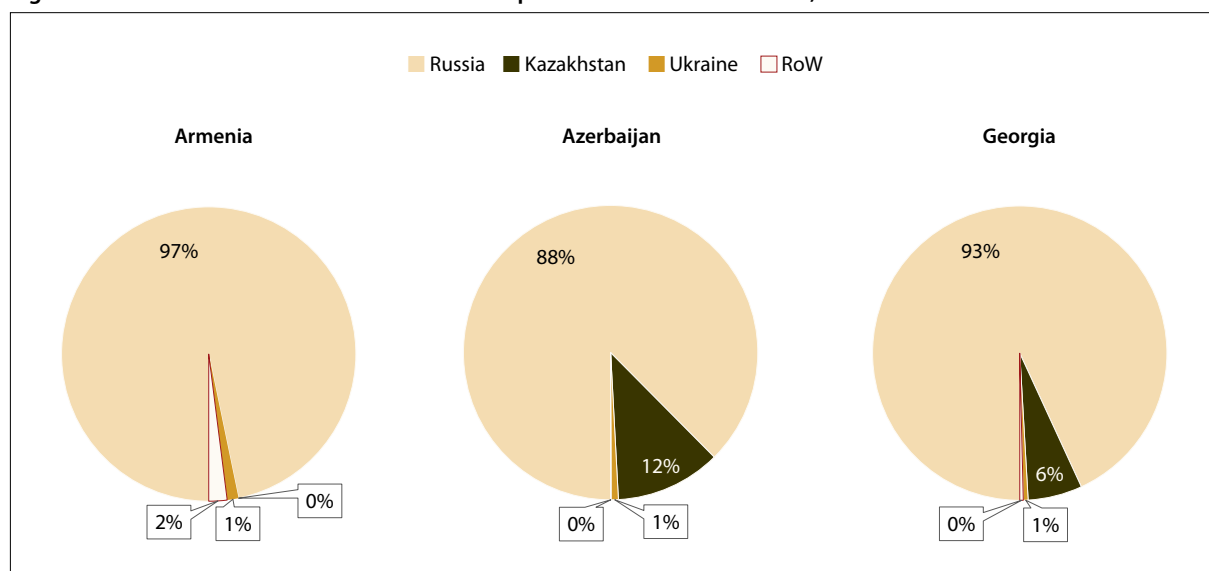
1 Percentage of the population whose food intake is insufficient to meet dietary energy requirements continuously.

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.

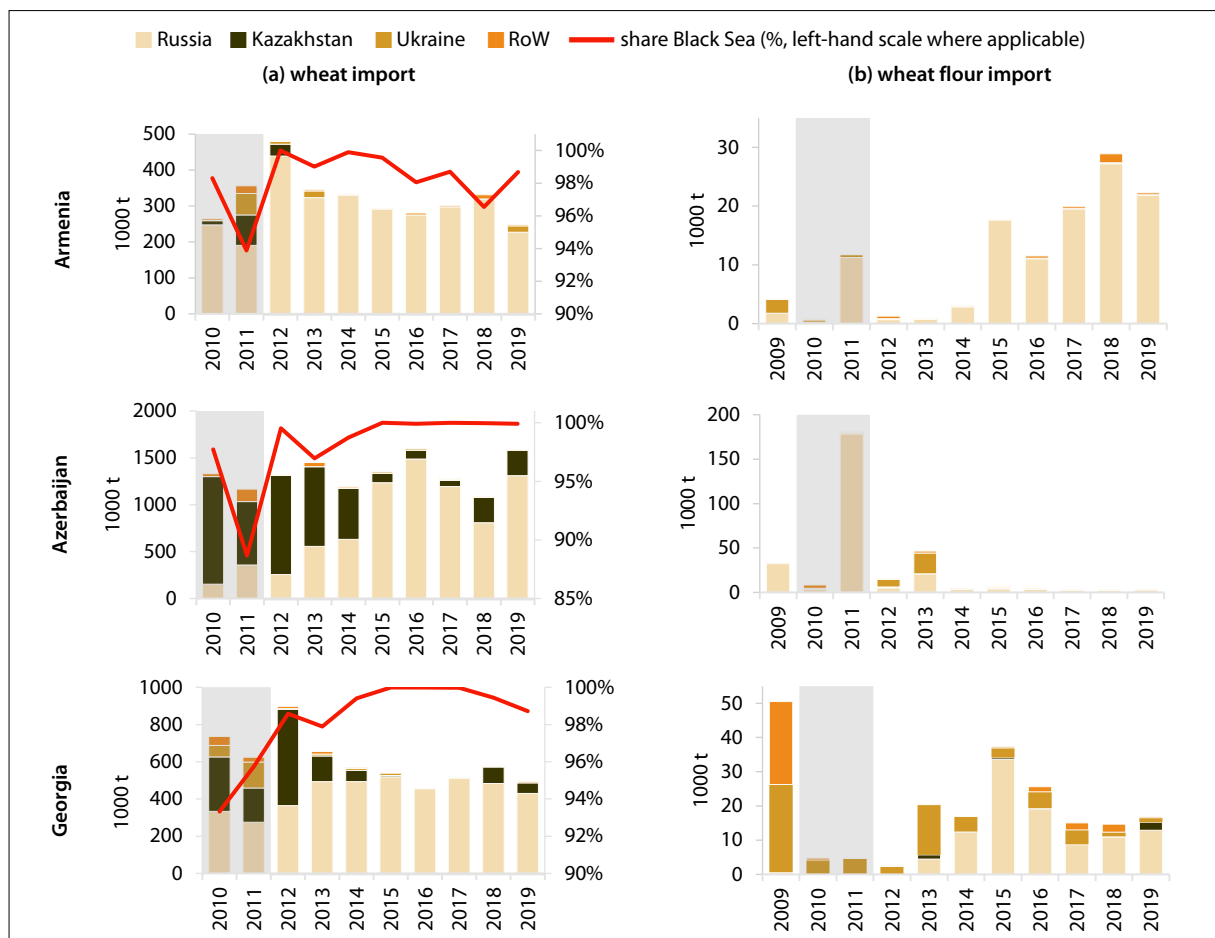
## Wheat Markets During the Crisis

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.

### About the Authors

*Miranda Svanidze* is a research associate at the Department of Agricultural Markets at IAMO. She holds a PhD degree from Martin Luther University, Halle and an MA degree in Economics from the International School of Economics at Tbilisi State University (ISET), Georgia.

*Linde Götz* is deputy head of the Department of Agricultural Markets at IAMO and lecturer at the Martin Luther University, Halle. Her research focuses on agricultural markets and the food supply chain in the countries of the former Soviet Union. She obtained her PhD from the University of Göttingen and an MSc degree from the University of Minnesota (USA).

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**Layout**

Matthias Neumann, Research Centre for East European Studies at the University of Bremen, [fsopr@uni-bremen.de](mailto:fsopr@uni-bremen.de)

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The Caucasus Analytical Digest (CAD) is a bimonthly internet publication jointly produced by the CRRC-Georgia (<http://crrc.ge/en/>), the Research Centre for East European Studies at the University of Bremen ([www.forschungsstelle.uni-bremen.de](http://www.forschungsstelle.uni-bremen.de)), the Center for Security Studies (CSS) at ETH Zurich ([www.css.ethz.ch](http://www.css.ethz.ch)), the Center for Eastern European Studies (CEES) at the University of Zurich ([www.cees.uzh.ch](http://www.cees.uzh.ch)), and the German Association for East European Studies (DGO). The Caucasus Analytical Digest analyzes the political, economic, and social situation in the three South Caucasus states of Armenia, Azerbaijan and Georgia within the context of international and security dimensions of this region's development. All contributions to the Caucasus Analytical Digest undergo a fast-track peer review.

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Layout: Cengiz Kibaroglu, Matthias Neumann, and Michael Clemens

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Research Centre for East European Studies • Country Analytical Digests • Klagenfurter Str. 8 • 28359 Bremen • Germany

Phone: +49 421-218-69600 • Telefax: +49 421-218-69607 • e-mail: [fsopr@uni-bremen.de](mailto:fsopr@uni-bremen.de) • Internet: [www.laender-analysen.de/cad/](http://www.laender-analysen.de/cad/)