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Economic and Agricultural Development after Transition in CIS Countries

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A B S T R A C T

After the collapse of Soviet Union in 1991, 11 former Soviet Republics signed an agreement to establish the Commonwealth of Independent States (CIS), and each country is committed to its transition based on market economy. The significant differences among the CIS countries can be observed at the levels of economic welfare, employment, and labor forces. In this study, we review the economic and agricultural situation in the CIS countries at the macro level during the transition. We also review the agricultural development in each country, including reformations, agricultural production, and marketing system with the SWOT analysis. Finally, we summarize the potential and strategies of each country for agricultural cooperation at the international level.

Keywords: Agricultural cooperation, Agricultural development, CIS countries, Economic situation

Introduction

After the collapse of Soviet Union in 1991, eleven former Soviet republics - Armenia, Azerbaijan, Belarus, Kazakhstan, Kyrgyzstan, Moldova, Russia, Turkmenistan, Tajikistan, Ukraine, and Uzbekistan signed an agreement of membership in Commonwealth of Independent States (CIS). Georgia joined to CIS two years later, in December 1993 and it was a member until 2009. Thus, except three Baltic States - Estonia, Latvia, and Lithuania, all former Soviet republics were members of CIS. Ukraine and Turkmenistan are viewed as associated states due to their unwillingness for ratification. Currently, only nine countries - Armenia, Azerbaijan, Belarus, Kazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan, and Uzbekistan ratified CIS Charter.

Among CIS countries significant differences can be observed in the level of economic welfare, the level of employment, accompanied by the mobility of labor in the CIS. Hence, CIS countries can be divided into donor countries and recipients of migrants. Russia has a leading role regarding its capacity of receiving migrants, and moreover, there is the highest demand in Russia for agricultural and food products. After the events in Ukraine, the attractiveness of Kazakhstan's macroeconomic environment can be assessed as the second one among CIS

Source: http://www.russiamap.org/map.php?map=political-cis

Fig. 1. A map of CIS countries.

countries (Drozdz et al., 2015). Other countries often play the role of labor donors, and their agricultural and food markets are highly dependent on the level of demand in the Russian market. Analysis of the institutional environment of the agricultural and food sectors also reveals significant development gaps. Almost in all countries, agricultural sector plays an important role. Recent macroeconomic changes in the countries analyzed depend heavily on political developments in Ukraine. This dramatically increased economic uncertainty in the region (Drozdz et al., 2015).

Regarding trade, Russia was and still is the primary recipient of agricultural and food products from analyzed countries. The establishment of Eurasian Economic Union in 2015 created favorable conditions for deeper integration of some countries in the region (notably Russia, Kazakhstan, Belarus, and Armenia). Other CIS countries such as Ukraine, Moldova, Georgia, and Azerbaijan declare European Union (EU) market orientation and seek for liberalized trade with the EU.

Economic and Agricultural situation in CIS countries

Economic situation

Ensuring of the stable economic development and reduction of the country's vulnerability to external shocks is the necessary conditions for the development of any economy, especially emerging markets. The overall population

of CIS countries equals to 288.9 million people, and almost 50 percent of it lives in Russia. Ukraine is the second most populated country. Among Central Asian countries, Uzbekistan is the most populated country with inhabitants of 31.8 million people. Population growth rate in Central Asian countries was higher compared to other CIS countries; it fluctuated between 1.4 percent in Kazakhstan and 2.2 percent in Tajikistan. Regarding Gross Domestic Product (GDP), Russia and Kazakhstan are the two CIS countries with their GDP of 1283.2 billion US dollars and 133.7 billion US dollars, respectively, which can be regarded as countries with significant bigger economies.

Table 1. Main macroeconomic indicators of CIS countries in 2016

CIS countries	Population (1000 persons)	Population growth (annual %)	Area (sq. km)	GDP (USD bn.)-2016	GNI per capita, US dollars	Income categories[1)]	Inflation, GDP deflator (annual %)	Exports of goods and services (% of GDP)	Imports of goods and services (% of GDP)	GDP growth (annual %)
Azerbaijan	9762.3	1.2	86600	37.8	4760	Lower middle income	14.6	46.5	43.7	-3.1
Armenia	2924.8	0.3	29743	10.5	3760	Lower middle income	0.5	33.1	43.3	0.2
Belarus	9507.1	0.2	207595	47.4	5600	Lower middle income	7.8	62.7	62.8	-2.6
Georgia	3719.3	0.1	69700	14.3	3810	Lower middle income	4.0	43.5	59.1	2.7
Kazakhstan	17797.0	1.4	2724902	133.7	8710	Upper middle income	10.8	32.6	29.2	1.0
Kyrgyzstan	6082.7	2.1	198500	6.6	1100	Low income	2.5	37.3 (2014)	73.5 (2014)	3.8
Moldova	3552.0	-0.1	33843.5	6.7	2120	Lower middle income	5.4	43.6	71.8	4.1
Russia	144342.4	0.2	17125187	1283.2	9720	Upper middle income	3.6	25.7	20.6	0.2
Tajikistan	8735.0	2.2	143100	7.0	1110	Low income	5.3	10.5 (2014)	42.3 (2014)	6.9
Turkmenistan	5662.5	1.7	488100	36.2	6670	Lower middle income	-4.8	73.3 (2012)	44.4 (2012)	6.2
Uzbekistan	31848.2	1.7	447400	67.2	2220	Lower middle income	7.6	20.6	21.5	7.8
Ukraine	45004.6	-0.3	600355*	93.3	2310	Lower middle income	17.1	49.3	55.5	2.3

Source: World Bank.
[1)]Based on World Bank Atlas method.

It is worthwhile to classify CIS countries according to the incomes of their population, which is usually measured by Gross National Income (GNI) per capita. Only Russia and Kazakhstan are regarded as middle-income countries, based on the *Atlas*[1)] method of the World Bank. Except for Kyrgyzstan and Tajikistan, all other CIS countries are

middle-income countries. The inflation rate was the highest in Ukraine and Azerbaijan - 17.1% and 14.6%, respectively. Among the CIS countries, Kazakhstan and Turkmenistan exported goods and services more than imported. Armenia, Georgia, Kyrgyzstan, Moldova, Tajikistan, and Ukraine are net importers.

High social and political tensions in CIS countries were observed during the early stages of the transition period. Wars and conflicts occurred in all parts of CIS countries. In the North Caucasus region: Ossetian-Ingush Conflict in 1992, First Chechen War in 1994 − 1996, War of Dagestan in 1999, Second Chechen War in 1999 − 2009. Other conflicts and wars also occurred in Central Asia: Civil War in Tajikistan in 1992 − 1997, Batkent conflict in 1999, South Kyrgyzstan ethnic clashes in 2010 in Osh region of Kyrgyzstan. In the Transcaucasia: The 1991 − 1992 South Ossetia War, Georgian Civil War in 1991 − 1993, Russo-Georgian War in 2008. In the European part of the former Soviet Union, most conflicts were in Ukraine: Euromaidan in 2013 − 2014 in Ukraine, Annexation of Crimea by the Russian Federation in 2014. In general, current political and social tension in CIS countries can be considered as stable compared to its early stages at least 5 − 10 years before except for War in Donbass region of Ukraine which is started in 2014 and still going.

Agricultural situation

Until the beginning of 1990s agricultural sector of the analyzed former Soviet republics had strict specialization and strong inter-dependence, which were established by central planners. The system was set to ensure a desired food security of the all USSR and guarantee employment of the certain share of rural population (Drozdz et al., 2015).

The disregard for market signals and natural advantages of the countries created irrationally functioning, low-productive and environment-unfriendly agricultural sectors, relying on guaranteed agro-food products' demand with artificial prices and labor surplus. The collapse of the Soviet Union created a socialist system and well-established trade relations. The fall in agricultural production followed as a typical reaction to introduced market forces, reduced subsidies and lower purchasing power of citizens. Governments run reforms to stimulate agricultural growth and increase in productivity, established new networks of trade partnerships to retain this sector as an important employer in the rural areas. These efforts were crowned with economic stability before the financial crisis of 2008. Latterly, political confrontation and consequences of the financial crisis made the development of agro-food sector of mentioned countries less predictable.

The role of agricultural sector in CIS countries is still significant that can be assessed by the share of the rural population, the share of agricultural employment, and the share of agricultural Gross Value Added (GVA) in the country's GDP (Lerman, 2009). The countries with most rural population are Tajikistan, Kyrgyzstan, and Uzbekistan. Almost half of the total population in Azerbaijan, Georgia, Kazakhstan, Moldova, and Turkmenistan

1) The *Atlas* conversion factor is used to reduce the impact of exchange rate fluctuations in the cross-country comparison of national incomes. See https://datahelpdesk.worldbank.org/knowledgebase/articles/378832-the-world-bank-atlas-method-detailed-methodology for more information.

are settled in rural areas. The share of rural population in Belarus, Russia, and Ukraine are lower than 30 percent. Labor force employed in agriculture is the highest in Georgia, whereas employees in Russia and Belarus are least occupied in the agricultural sector. Regarding agriculture's contribution to GDP, Tajikistan is found to be the most agrarian country with the share of 25 percent.

After gaining their independences, the structure of agricultural production changed in all CIS countries based on their agricultural policies in crop and livestock production systems. In Russia, in the production of cereals from 2003 to 2013, there was a general shift from the area under grains to oilseeds (Rylko et al., 2015). Also, there was a shift from the cultivating of spring to winter wheat. Moreover, there was a substantial growth of area under corn at the expense of less intensive and less technological grains, such as oats, barley, rye, etc. In general, from 2004 to 2014 wheat, sunflower, maize, barley, and vegetable production has been increased whereas production of potatoes and fruits decreased.

In the case of Ukraine, from 2004 to 2014 production of crops such as wheat, maize, sunflower seed, rapeseeds, potatoes, fruits, and vegetables increased. An increase of wheat, maize, sunflower seed, and rapeseeds production can be explained by Ukraine's response to the global market developments (Akhramovich et al., 2015, p.21).

In Transcaucasia CIS countries during 2004－2014, crop production patterns were different from European CIS countries. In these countries, fruits and vegetables were principal crops.

Wheat was the main crop in Central Asian CIS countries during 2004－2014. After Russia and Ukraine, Kazakhstan ranks the third position in the wheat production. From 2004 to 2014, the production of wheat increased by 1.3 times in Kazakhstan (Syzdykov et al., 2015). In Uzbekistan, wheat and cotton are two main strategic crops and production and marketing of these crops are under state procurement. From the first years of independence, agricultural policy in the country was driven by government's intention for an increase of wheat production volumes for ensuring food self-sufficiency. As a result, more areas were allocated for the production of wheat. From 2004 to 2014, wheat production increased by 1.3 times. Also, the government of Uzbekistan issued several acts aimed to diversify agricultural production towards the production of high value added products. Consequently, from 2004 to 2014, production of vegetables increased by 2.8 times and fruit production increased for 2.7 times.

After collapsing of Soviet Union, livestock sector in all CIS countries severely affected. From 2004 to 2014, except for Belarus, in all European CIS countries number of cattle decreased. In Armenia, the overall growth of animal production was not high. Livestock is responsible for about 40% of the gross agricultural output in Armenia (Urutyan et al., 2015). Households generate 93% of the animal production. Commercial farms produce the remaining 7% (mainly poultry). Livestock products seem to be more important in Central Asian CIS countries since production volumes increased in all these countries (Lerman, 2007, p.7). In Kazakhstan, meat production in 2014 grew by 22 percent; milk production grew by 11 percent, and finally, production of eggs increased by 85 percent (Syzdykov et al., 2015). From 2004 to 2014, livestock products also increased in Kyrgyzstan: the total meat production increased by 9 percent, at the same time, milk production increased by 24 percent. Production of meat in Uzbekistan increased by 78 percent in 2014 compared to 2004 as well as production of milk and eggs almost doubled from 2004 to 2014 (Yusupov et al., 2010).

Agricultural Policy and Institutional Environment

Agricultural policy is essential for the development of agriculture and rural areas. The agricultural policy in CIS countries has become quite differentiated. As manifested in a different number of models before the transition systems that still exist, such as various levels of support for market prices, liberalization of trade policies and the amount of funds available for agricultural policy. Nevertheless, the priorities of agricultural policy presented in strategic documents of CIS countries are very similar, with a high production-oriented character that emphasizes food security. Other priorities point to the central role of agricultural policy in development, for example, increasing competitiveness, productivity and export orientation. Strategic priorities can be similar and vary between countries in their emphasis, but the choice and scope of individual instruments vary (Drozdz et al., 2015). For example, over the decade of 2004 - 2013 Russian agricultural policies made quite a dramatic shift from relatively modest to very heavy regulation and state (first of all federal) budget support. In Russia, growing support to domestic agriculture was officially started in 2006, with launching National priority project in the field of agriculture. The Project was followed by the 2008 – 2012 Agricultural Program, which could be viewed as a remote analogue of the US Farm Bill, or EU CAP. According to both Project and Program, annual federal budget support to domestic agriculture has grown substantially, although from quite a modest "start-up" level. After rather successful completion of the Program, a new 2013 – 2020 Agricultural Program has been launched.

Similar to Russia, agricultural policy of Belarus is a part of the state social-economic policy that targets real GDP growth rates and wage increase (Akhramovich et al., 2015). The instruments of this policy are focused on the stimulation of domestic demand, and public support to the agricultural sector is one of its main elements. Focus on agriculture can be largely explained by political reasons and presence of value chains, which allow agricultural support channel to food and machinery industries. Implementation of the state agricultural policy is assigned mainly to the Ministry of Agriculture and Food of Belarus - the main state regulator in the agro-food sector. Thus, annually the Ministry of Agriculture states maximum prices of agricultural products (crop), purchased for state needs (list of products is set annually).

In Moldova, the most important mechanism for supporting agricultural production is subsidies provided by the National Agency for Payment and Interventions in Agriculture. Since 2006, the number of strategic documents on the sustainable development of the agricultural sector has been developed in the Republic of Moldova. However, their implementation did not result in significant changes in the development of agro-food sector (Moroz et al., 2015).

Agricultural policy and development strategies in Armenia for 2014 – 2025 are defined in the Sustainable Agricultural and Rural Development (SARD) Policy that is currently in the process of adoption by the Government of the Republic of Armenia. This policy is largely built on the SARD 2010 – 2020, but in the light of recent political and economic developments, in particular, entry to the Eurasian Economic Union and it aims assisting the smooth of transition to the customs union (Urutyan et al., 2015). The government of Armenia has selected a liberal way of supporting agro-food sector and prefers not to intervene in the market activities, and does not set any price

limitations on agricultural goods. Instead, it can set some taxes (indirect) or tariffs to support local producers of agricultural products and stimulate the local processing. A common and widely used support mechanism is direct subsidies to farmers and allocation of money for on-farm restructuring and support.

Agricultural policy reform has proved to be a lengthy and difficult process in Ukraine. Throughout the 1990s agricultural policy in Ukraine emphasized special government intervention in agricultural production, marketing, and finance, hindering land and farm reform (Lerman et al., 2007). A Strategy for Agriculture and Rural Development 2015－2020 was finalized in July 2015. Its overall objective is to increase agricultural competitiveness and sustainably promote rural development in line with EU and international standards.

Government policies in Azerbaijan are set out in the form of programs with set time frames and objectives enacted on the basis of presidential decrees (Khalilov et al., 2015). The country does not use framework strategic documents which define the long term priorities, but rather focuses on programs that tackle a variety of horizontal and vertical issues as well as emerging needs. The programs are used as the basis for establishment of institutions; state owned commercial entities as well as support programs required for their implementation. The main focus of the agricultural policies implemented in Azerbaijan is state support system to agricultural sector. For this purpose government has declared the agricultural sector tax free. Government subsidies cover crop and seed production, fertilizer, farm machinery and more recently livestock production (Khalilov et al., 2015).

Ministry of Agriculture of Georgia as the main institution responsible for the agricultural policy making presented the new "Strategy of Agricultural Development 2014－2020[2)]". According to this strategy, there are seven main objectives such as: (1) enhancing competitiveness of rural entrepreneurs; (2) institutional development; (3) amelioration and soil fertility; (4) regional and sectorial development - value chain development; (5) ensuring food security; (6) food safety, veterinary and plant protection; (7) climate change, environment and biodiversity.

Agricultural policy in Kazakhstan is implemented in accordance with the Program for the development of agricultural sector in Kazakhstan for 2013－2020 "Agribusiness-2020". The main strategic objective of the policy is to provide conditions for improving competitiveness of agricultural entities to become more profitable and less risky. There are 4 main directions of government policy in agriculture: (i) financial restructuring; (ii) improving of accessibility of goods, work and services for agricultural producers; (iii) developing of state support systems for agricultural producers; (iv) improving the effectiveness of the systems of state regulation in agriculture.

Recent development trends in Kyrgyz agriculture was analyzed by National Strategy of Sustainable Development (NSSD) of the Kyrgyz Republic for 2013－2017 and recognized serious issues in the development of the sector - land degradation, disinvestment in irrigation and other public infrastructure, insufficient private investments and access to financial resources in the sector, dependence on imports for key food products and barriers for Kyrgyz agricultural exports, insufficient processing of agricultural produce etc. In this regard, the NSSD sets four goals for the agro-industrial sector: (i) growth of output and production quality, provision for food security of the country; (ii) increase in efficiency and competitiveness of agriculture and the agro-processing

2) See www.moa.gov.ge/Download/Files/227 for more information.

industry; (iii) improvement in efficiency of use of government budget resources in the sector; and (iv) resolution of peasants' social issues.

Uzbekistan is one of the major producers and exporters of cotton in the world. While the importance of cotton has declined significantly and other products of agricultural sector such as grain, fruits, and vegetables have supported the steady growth of agricultural industry in Uzbekistan. Uzbekistan has taken institutional and structural reform for the sustainable development of the agricultural sector since the 1990s. The structural change was significantly influenced by a series of government efforts. Uzbekistan has adopted a number of laws to encourage agricultural growth and rural development. Recently, Uzbekistan's Development Strategy for 2017－2021 has been adopted and President of Uzbekistan Shavkat Mirziyoyev signed a decree "On Uzbekistan's Development Strategy[3)]". The document has approved Uzbekistan's Five-Area Development Strategy for 2017－2021 which was developed following comprehensive study of topical issues (including agriculture), analysis of the current legislation, law enforcement practices, the best international practices, and following public discussion. Issues related to agricultural development are highlighted in the Strategy and entitled as "Modernization and intensive development of agriculture" which in turn includes the following tasks: (i) expansion of production of eco-friendly products, achieving significant increase of export potential; (ii) diversification of agricultural production; (iii) encouraging and creating of favorable conditions for the development of farms; (iv) implementing of investment projects related to rural infrastructure; (v) carrying out R&D aimed at creating and introduction of new crop varieties and animal breeds with high productivity; (vi) adoption of systemic measures to mitigate the negative impact of climate change and drying of the Aral Sea to the development of agriculture and the livelihoods of people.

Agricultural Development and SWOT Analysis

The analyzed countries have a common legacy and started a transition to the market economy from the similar starting points. This fact allows stating that for the former Soviet Union countries distinguishing of typical environmental elements is possible. However, the current development of agricultural and food sectors differs significantly. This means that unique elements, defining specific characters of the environment, are introduced in the each country. The origin of peculiarities of agricultural and food sectors is determined by diversity of selected reforms and national agricultural and food policies, directions of foreign policy, geographical situations, geologic and climate conditions, etc. (Drozdz et al., 2015).

The main strength of agricultural and food sectors of the all analyzed countries, except Belarus, is suitable agro-climatic conditions, which allow developing the niche agricultural products. Russia covers the large area and occupies regions with different agro-climatic conditions. However, according to the current direction of the national policy conditions in this country enough good, which allow ensuring national food self-sufficiency and improve export of niche products.

3) See http://www.tashkenttimes.uz/national/541-uzbekistan-s-development-strategy-for-2017-2021-has-been-adopted-following-discussion for more information.

One of the main advantages of CIS countries is the relatively low input cost, ensuring higher competitiveness. It should be noted that the origin of this situation differs from country to country and is of a natural or artificial nature. Typically, labor costs in the agricultural and food sectors of the analyzed countries are lower than in countries with well-functioning market economies. Comparison of labor costs between countries shows significant wage fluctuations. The attractiveness of other factors can be determined by state support or special conditions in the domestic market. Some countries benefit from lower fuel and energy prices if they are net exporters of primary energy (for example, Russia and Azerbaijan), import them at a price below the average (for example, in Belarus) or state intervention (for example, Subsidies for fuel). Countries often benefit from developed domestic industries related to agriculture (for example, in Russia and Belarus there is a local fertilizer industry, machinery, etc.). National support policies often contribute to creating attractive initial costs in the agricultural and food sectors of these countries.

A strong decline in agricultural production and the initial stage of the formation of new trading networks after the collapse of the USSR provided a real challenge for the development of agriculture and the food industry. All countries, except for Belarus, Moldova, and Ukraine, have more or less significant potential for increasing the land area for agricultural purposes. The development potential of Belarus is limited by relatively low land productivity, adverse climatic conditions and the exclusion of some areas from agricultural use after the Chernobyl disaster in 1986[4]. Moldova and Ukraine have a high share of agricultural land in the structure of land and face a challenge of soil productive potential preservation. Unfortunately, the former Soviet Union countries also inherited common weaknesses, with deep-seated adapting values of the central planning system. They resulted in the slowdown of the agricultural and food sectors' development during the transition period.

Most of the typical shortcomings could be overcome by implementing sustainable policies for the development of agriculture and the food industry. However, the situation is complicated by budget constraints and lack of adequate funding from other sources, which prevents from progress, making moving from the actual to the potential state of the agricultural and food sectors unlikely. Low productivity, shortage of skilled labor and shortcomings of national agricultural education and research organizations are the most painful problems that need to be addressed. Most countries emphasize the importance of updating equipment and equipment development, infrastructure development and institutional development (Drozdz et al., 2015).

The main opportunities for potential development of the agricultural and food sectors are untapped domestic markets and the demand for niche products in the world market. It is expected that positive changes in the investment environment and the level of yield will shorten the gap between the fact and the potential of the agricultural and food sectors.

It should be noted that market liberalization is understood as a threat to the national agricultural and food sector. The deeper penetration of foreign producers in domestic markets is named as the challenge. Experts also stressed

4) The *Chernobyl disaster*, also referred to as the *Chernobyl accident*, was a catastrophic nuclear accident. It occurred on 25 − 26 April 1986 in the No. 4 light water graphite moderated reactor at the Chernobyl Nuclear Power Plant near the now-abandoned town of Pripyat, in northern Ukrainian Soviet Socialist Republic, Soviet Union.

the importance of social and environmental issues for the future development of national sectors. The most visible social problem is the aging society in rural areas due to the high level of migration. This issue courses a shortage of labor force and changes in the national structure of agriculture. Some countries also faced soil degradation issues, which could significantly reduce the potential of the national agricultural and food sector (Drozdz et al., 2015).

According to the study conducted by Nivievskyi et al. (2015), agri-climatic and geographical endowments make Ukraine exceptionally positioned in the currently growing global food markets: 1/3 of the world-wide stock of the most fertile black soil, which is ideally suited for crop production, favorable temperature and precipitation regimes, and access to the year-round ice-free deep Black Sea ports (Table 2).

Table 2. SWOT analysis of Ukrainian agricultural and food sector

Strengths	Weaknesses
• Favorable agri-climatic conditions with 1/3 of the world's stock of the most fertile black soil; • Advantageous geographical position relative to major sales markets: Europe and CIS; • Year-round availability of ice-free and deep port capacities to handle large vessels; • Investments into the sector despite unfavorable doing business environment; high capital return; • Developed railway and main connecting roads infrastructure; • Relatively cheap labor • Competitive advantage (cheap feed and raw materials supply) for livestock and food processors due to the competitive crop sector	• Low productivity, high share of households in production; • Great number of conservatively disposed agrarians; • Lack of qualified staff (especially highly skilled); lack of modern technologies and modern managerial practices; • Underdeveloped national quality infrastructure (sps measures); shortage of elevator capacities and cold storage capacities; undeveloped marketing infrastructure in rural areas; • High dependence on agro-climate conditions, inefficient system of insurance of agricultural risks; underdeveloped agri-finance infrastructure; • Ad-hoc and opportunistic state agricultural policy; absence of equal level-playing field for all producers and sectors; • Continued delay of introduction of farmland market sales and purchases;
Opportunities	**Threats**
• Growing world population and increasing global demand for food products; • Increasing demand for alternative energy - market for agricultural raw materials; substantial scope for productivity increase in the sector; • Possibility of a large-scale agricultural production and substantial export potential due to the relatively low density of population per ha of arable land; • Global climate change and possibility of two crops seasons; • Underperforming agricultural science, research and development, and education systems; • Further integration of Ukraine into the international trade: Association Agreement between Ukraine and the EU; better investment climate • Shift from supply to demand-driven paradigm of international agriculture and westernization of diets • Technology transfers from the EU in general, including national quality infrastructure (sps measures), education, extension services; decreased losses due to better technologies;	• Decreasing content of nutrients in soils, erosion, worn-out melioration systems; • Imperfect system of budget support, delays in VAT refund to exporters; • Inadequacy of the expert training system, low level of integration into the international scientific community; • Continued ad-hoc and opportunistic state agricultural policy, quantitative restrictions of foreign trade; • Continued high administrative burden and unfavorable investment climate due to status quo in reforms; • Depopulation and urbanization of rural population, thus lack of labor for agriculture. • Status-quo in bringing the national quality infrastructure to the best world practices - threat for export expansion • Continued market protection from the Customs Union/Russia

Source: Adapted from Nivievskyi et al., 2015.

This excellent background allows Ukrainian agriculture to develop despite unfavorable investment environment, inefficient logistics and infrastructure, ineffective and rather counterproductive public services and agricultural policy. Moreover, Ukrainian agricultural and food sector has competitive advantage (cheap feed and raw materials supply) for livestock and food processors due to the competitive crop sector.

Agricultural and food sector of Armenia has its strengths, weaknesses, opportunities and threats (Table 3). Climatic conditions, sun and humidity provide good setting for growing a broad range of agricultural products, including early-season fruits and vegetables in Armenia. Alpine meadows and warm sun in the valley give a

Table 3. SWOT analysis of Armenian agricultural and food sector

Strengths	Weaknesses
• Favorable agri-climatic conditions allow growing a broad range of agricultural products, including early-season fruits and vegetables • Availability of cheap labor on farms that attract investments especially in the greenhouse sector; • High quality of grapes create an opportunity for the development of wine and brandy production, especially for foreign direct investment • Improved performance of food processing sectors due to foreign investments. Support programs from international donors. • Good reputation of Armenian products in CIS markets. Good potential for export increase • Agriculture is considered as one of the major and prioritized sectors of national economy; low level of monopolization; favorable tax environment for agriculture	• Small parcels of land managed by small scale farmers engaged in subsistence farming • Outdated farming and production systems leading to low productivity • In animal production poultry production is characterized by large volumes of eggs and poultry produced by commercial farms. Small number of cattle in the hands of small scale farmers • Low level of cooperation among producers, cooperative development not adequate • Low level of extension and advisory services • High cost of financing (agricultural loans have 14 − 16% interest rate) • Lack of modern machinery and infrastructure • Lack of skills in horticulture, agronomy, veterinary, food processing and technologies
Opportunities	**Threats**
• Increase of agricultural production through land consolidation and intensification of resource utilization • Introduction of new farming systems, good agricultural practices • Modernization of infrastructure, machinery and processing facilities • Improve access to finance • Export market orientation, diversification of export markets and products • Improve quality and food safety to comply with European standards • Improve investment and business climate to attract investments • Strengthen research-extension-agriculture links towards sustainable agriculture • Modernization of quality infrastructure and management to access new markets • Promote sustainable agricultural practices and mitigate environmental risks	• Abuse of natural resources, non-following sustainable agriculture principles may lead to environmental problems in mid- and long-term perspectives • Lack of political will to implement reforms and strategies • Quality and consistency of government strategies and their implementation • Frequency of natural disasters including drought, spring frosts and hail. Low level of disaster preparedness • Regional political instability, geographical isolation • Increasing global competition • Vulnerability of agriculture to global climate changes • Risks of animal diseases transfers in the region

Source: Adapted from Uratyan et al., 2015; FAO (2012a).

specific flavor to fruits and vegetables that are very famous and popular in the CIS countries.

SWOT analyses of agricultural and food sector of Azerbaijan can be summarized in Table 4. Azerbaijan has the financial capability to grant subsidies and invest in promoting agricultural export owing to a massive amount of oil export. Moreover, the country can produce fresh agricultural products all year round based on various climate zones. Another advantage is the production of high-quality organic farm products because the country has relatively many farms utilizing organic fertilizers. Among Commonwealth of Independent States (CIS) members, Azerbaijan has an international airport with the latest facilities (Heydar Aliyev International Airport in Baku) that leads to developing export of agricultural products (Khalilov et al., 2015).

Table 4. SWOT analysis of Azerbaijan agricultural and food sector

Strengths	Weaknesses
• Favorable agro-climatic conditions • Organic aspects of local products • Tax exemptions and state support in agriculture • Relatively cheap labor • Competitive advantage (cheap feed and raw materials supply) for livestock and food processors due to competitive crop sector • Developed railway and main connecting roads infrastructure	• Low productivity • High share of households production • Low access opportunities of the farmers to market • Lack of qualified staff (especially highly skilled) • Old machinery • Lack of modern technologies and modern managerial practices • High dependence on agro-climate conditions • Inefficient system of insurance of agricultural risks • Underdeveloped agro-finance infrastructure
Opportunities	**Threats**
• High growth rate of demand for products • High potential capacity of the market • Good macroeconomic environment (low inflation)\ • Depreciation of national currency • Access to knowledge • Support to agricultural insurance • Organic production • Ban to Russian market	• Aggravation of competition in domestic and foreign markets • Deeper penetration of the foreign producers to domestic market • Decreasing content of nutrients in soils, erosion, worn-out melioration systems • Urbanization of rural population, thus lack of labor for agriculture • Lack of specialists for new areas • High custom rates for foreign products • Dependence on Russian market

Source: Adapted from Khalilov et al., 2015.

Azerbaijan has a relatively low level of prejudice towards foreign companies and allows businesses to save operation costs thanks to the procedure for starting up business swiftly as well as for opening and closing business. On the contrary, regarding internal weaknesses of Azerbaijan, there are several constraints exist. First, it takes too much logistics expenses and time due to severance of international marine transport to the western world. Second, with the development of logistics based on oil export, the country has a weak infrastructure for export of commodities other than oil. Third, time can be delayed due to vestiges of bureaucracy in the procedure of import and export such as customs clearance; and fourth, with a high-interest rate, the country's access to the official financial sectors such as banks is limited (USAID, 2009).

The main strength of the Georgian agriculture and food sector lies in its diversity of climate conditions and fertile soil as well as long-standing tradition of agricultural production (Table 5). Being a traditional agricultural country,

Georgia can offer some unique agricultural products to the rest of the world, which should serve as a visit card of the Georgian agri-food production. Kvevri Wine is only one of the examples of unique agricultural tradition that Georgia can offer to the rest of the world. Georgia has a natural advantage in the production of hazelnuts which currently is the largest agri-food export product. The production volumes of hazelnuts have not reached their maximum yet and there is a room for improvement through better cooperation among farmers. Regarding logistics, good road and sea freight links with South Caucasus and Caspian, Black Sea ports as well as good air freight links with China, UAE, Kuwait, Ukraine and Europe can be considered attractive for foreign investors.

Table 5. SWOT analysis of Georgian agricultural and food sector

Strengths	Weaknesses
• Diversity of climate conditions and fertile soil • Natural advantage in the production of hazelnuts • A policy, strategy and action plan for development is in place • Rural Development and Agriculture are high priority issues for the current government • EU is highly engaged in leading the policy reform and improving responsiveness by the Government • Georgians in general are tightly linked to the rural environment and many invest in rural areas	• Outdated skills of farmers and lack of know-how • Fragmented land • Obsolete infrastructure in the villages • Low quality of roads • Farmer organizations are weak and with limited role in the society, currently in an relatively unfriendly policy environment
Opportunities	**Threats**
• Providing farmers with various educational courses • Development of fisheries and poultry farming • Improving access to the service of qualified agronomists and veterinarians • Control of animal diseases; improving species of plants and animals • Providing business consulting in order to develop new business projects; providing small farmers with business loans and grant programs • Fighting against counterfeit products (wine and honey) • Development of irrigation systems • Establishing cooperatives of small and medium farmers • Renewal of agricultural equipment, increasing access to new agricultural machinery and introduction of new technologies • Activating the agricultural land legalization process • Reducing probabilities of natural disasters • Development of greenhouses • Development of agricultural insurance products for local farmers	• Migration and brain drain • Natural threats (heavy rains, frost, hail, etc.) • Epidemic diseases (mainly diseases of pigs and cattle) • Pollution of the environment due to the usage of chemicals; instability of export market • Reliable food supply of main commodities at risk due to collapsed national production and supplies from traditional suppliers in times of climate related shortages; • Domestic supplies of milk and meat products at risk from an endemic disease situation • Lack of political will to take appropriate measures in land reform - fragmented holdings and unused land

Source: Adapted from Bluashvili and Sukhanskaya, 2015; FAO (2012b); Kharaishvili et al., 2015.

On the weak side of agriculture, outdated skills of farmers and lack of know-how clearly stand out. Fragmented land is another mostly cited weakness of Georgian agricultural production, reaching higher productivity levels in agriculture with the average size of land plots at 1.2 ha seems quite impossible. Another major weakness of primary

agriculture is obsolete infrastructure in the villages. After the turbulent 90s, most water and energy supply, storage and farm infrastructure was destroyed. Access to the basic infrastructure in villages remains a serious weakness of the agricultural production. According to the Geostat, as of 2013, only 52.4% of Georgian households had tap water at home, by the regional breakdown this picture becomes more dramatic. Only 20.8% of families in Samegrelo region have tap water in their yards. Despite the recent large scale gasification programs, only 52% of Georgian households have access to natural gas. Quality of roads is another challenge for the development of primary agricultural production.

According to Syzdykov et al. (2015), SWOT analysis of Kazakhstan's agri-food sector is summarized in Table 6. Kazakhstan is abundantly endowed with land. More than 80% of the area is classified as agricultural land, most of

Table 6. SWOT analysis of Kazakhstan agricultural and food sector

Strengths	Weaknesses
• Vast and diverse land resources, allowing to produce wide range of agricultural products • Rich land reserves (pastures) that have a considerable potential • Traditional specialization on wheat production. Kazakhstan is one of the world's leaders in wheat and wheat flour exports • Geographical position close to the growing markets of China, Russia and India • Developing government support programs • High potential of organic production • Cheap labor force	• Small scale production, around 80% of livestock is in private households that constrains the development of the sector • Low productivity compared to other countries with similar climatic conditions • Lack of skilled labor force • High dependence on wheat production • Extreme continental climate and droughts decrease the yields dramatically and make the whole territory of Kazakhstan an area of risky farming • Obsolete equipment and high credit pressure • Most of the machinery in Kazakhstan is obsolete and high credit pressure does not allow most of agricultural producers buy or lease new machinery • Transport infrastructure, namely the roads, warehouses are underdeveloped • Lack of investment due to high risks • Low level of introduction of new technologies
Opportunities	**Threats**
• Increasing global demand for food. Kazakhstan can potentially become one of the major food supplier • Stabilization of wheat yields by introducing short rain crops, moisture saving technologies • Potential for increasing productivity of crop and livestock production • Diversification into oilseeds, fodder crops and other more value added crops • Development of low cost pasture based livestock breeding • Import substitution and development of export potential • Development of infrastructure • Entering new markets with the accession into WTO. Kazakhstan joined the WTO as 162nd member November 30, 2015 • Transfer of the technologies from developed countries	• Increased competition on the international market after accession into WTO • Climatic changes both short term (droughts, frosts) and long term (global warming, deficit of water resources, degradation of land) • Spillover effect of the political relationships between Russia and EU • Global and regional crises and recessions • Outbreaks of animal diseases, also due to the accession of Kyrgyzstan into European Economic Union

Source: Adapted from Syzdykov et al., 2015.

which (70%) is occupied by pastures. Although the lands were adversely affected by the Soviet era initiatives and lack of investments in the post-soviet period, vast and diverse land resources allow to produce wide range of agricultural products. The program "Agribusiness-2020" has introduced new form of government support in order to improve access to credits, which is subsiding the interest rate for the credits. Nowadays second tier banks offer the credits to agricultural producers at the interest rate of 15% on average. The government can cover up to 8% of the interest rate; the farmer pays the rest 7%.

SWOT analysis of Kyrgyzstan's agri-food sector is mostly based on the report conducted by JICA experts and summarized in Table 7 (JICA, 2013). According to Sydykova and Rodríguez (2014), natural and climatic conditions create possibilities in order to provide farmers and processors with required quantity of livestock, feed, and seed. Significant share of agricultural products are produced with minimal use of chemical fertilizers and pesticides. Livestock are fed on natural pastures. It gives additional opportunities for the Kyrgyz Republic to organize the production oriented to segment of environmentally friendly products.

Table 7. SWOT analysis of Kyrgyzstan agricultural and food sector

Strengths	Weaknesses
• Importance of livestock sector in the national policy • Suitable natural and climatic recourses for livestock sector, presence of pastures • Environmentally favorable region • Presence of sufficient labor force at the production stage; there are a number of meat processing companies producing sausages for the local and regional markets • The Kyrgyz Republic was meat supplier for the entire former Soviet Union and it has a good reputation as a country which has high quality meat; steady demand for fresh meat in domestic market; the Kyrgyz Republic exports meat products to Kazakhstan, Russia, Tajikistan, Iran	• Lack of initiatives on the part of farmers; unstable feed supply; lack of logistics between farmers and processors (slaughter floor); absence of contemporary cattle slaughter points • Small-scale production; low technical level of meat processing companies • Sanitarian inspections are not carried out properly; there are no inspectorates, restricting uninspected meat
Opportunities	**Threats**
• Traders could be involved in order to establish links between regions having livestock surplus and fattening farms; possibility to create contemporary cattle slaughter points • Production of environmentally friendly products that meet international standards; taxes based on patent; increase the level of production to provide with fresh meats other markets in Central Asian countries • Creation of Veterinary association; development of production and develop import substitution policy • High demand for cattle in Kazakhstan; develop legal cattle trade in Kazakhstan's market; develop young stock market in Dubai; growing demand for meat production in Russian, Tajikistan	• Inefficient use and degradation of pastures; reduced product competitiveness in comparison with cheap Chinese meat; absence of integrated approach across the value chain (from the farmer to the buyer) could make matters worse as a whole • Lack of inspection, poor sanitary conditions led to spread of disease outbreaks; the "shadow trade" and bribes; government of the Kyrgyz Republic do not control uninspected meat • Increase in imports of meat and meat products from China, Russia, Kazakhstan; increased number of packaged meat from Turkey and Germany • New requirements and regulations of the Customs Union which restrict the volume of export

Source: Adapted from JICA, 2013; Sydykova and Rodríguez, 2014.

SWOT analysis of Uzbekistan's agri-food sector is summarized in Table 8. Uzbekistan has an advantage of a warm climate which creates favorable conditions for a long growing season. From early stages of independence, national policies aimed to increase food self-sufficiency and thus increased the land areas for grain. Similar to other CIS countries there is an abundant and cheap farming labor in rural parts of Uzbekistan. Investments in the intensive horticultural production of both fruit and vegetables are one of the recent primary policies of the government. The Government set clear priorities for development of the subsector in many legislative documents. In particular, agro-processing industry in growth trends since 2000 with the new policy endeavor empowered by the Presidential Decrees.

Table 8. SWOT analysis of Uzbekistan agricultural and food sector

Strengths	Weaknesses
• Favorable climatic conditions • Willingness of national policy to increase food self-sufficiency • National-level adaptation and capacity building is a high priority • Abundant and cheap farming labor • Abundance of agricultural genetic resources • Recent agricultural policy aimed at diversification of agricultural production. Agro-processing industry in growth trends since 2000 with the new policy endeavor empowered by the Presidential Decrees • Great supply potential of fruits and vegetables for processing	• Lack of irrigation water, soil salinity. • Cotton-oriented and import and export regulated policy • Farmers in Uzbekistan are not adequately adapted to current climate, particularly regarding efficient use of irrigation water • Poor agricultural technology, lack of mechanization • Lack of skilled labor force and entrepreneurship • Obsolete facilities and equipment in agro-processing sector coupled with insufficient storage and logistic system • Absence of stable raw material procurement system for the needs agro-processing sector
Opportunities	**Threats**
• Located in the center of Eurasian trade market • High economic growth (7 – 8 percent per year) • Increase of multi-sector investment of foreign companies • Huge production and export potential of horticulture. Seasonal niche markets of processed agro/food products in Russia and Europe. Expanding markets in Asia.	• Possession of disputes between neighboring countries due to lack of water resources. Water shortages could severely limit irrigation water availability • International pressure such as the abolition of the order system, especially in cotton harvesting season • Trends in the opening of agricultural import and export markets. Consumers' increasing concern on quality and safety of food. • Requirements of international quality standards such as ISO 9001 for processed foods • Harmonization with national and international regulatory frameworks

Source: Adapted from Song Nam-Sul 2014; Sutton et al., 2013; Lee et al., 2013a.

Weaknesses of agricultural and food sector of Uzbekistan are a lack of irrigation water, soil salinity; poor agricultural technology, lack of mechanization; lack of skilled labor force and entrepreneurship; obsolete facilities and equipment in agro-processing sector coupled with insufficient storage and logistic system; cotton-oriented and import and export regulated policy. And one of the main opportunities for agricultural development is to boost value added production through increasing production volumes of fruits and vegetables as well as increasing the

number of agro-processing industries.

A large proportion of existing agro-processing industries are operated with obsolete and worn-out equipment, mostly originated from the period of the Soviet Union. Approximately, 35 percent of the agro-processing companies survive under this circumstance in Uzbekistan, requiring tremendous investment. In many cases, the products produced by these enterprises located in rural areas are not competitive regarding quality. Moreover, the agro-processing industries in Uzbekistan are not operated by highly-qualified workers. Besides, entrepreneurship is emerging as another constraint in this sector. Entrepreneurs confront many challenges, especially the uncertainty that exists over access to finance, advice and information, and strong markets. In Uzbekistan, therefore, competent entrepreneurship in agro-processing companies needs to be nurtured to meet the challenge in the era of globalization (Lee et al., 2013a).

Among the exported agricultural products, a significant proportion is composed of fresh vegetables, fruits, melons, and beans (79.8%). This situation calls for better use of the existing capacity of enterprises for processing, preservation, and packaging of agricultural products. Russia is the leading importer of fruits and vegetables, and the main exports of fresh fruit and vegetables to Russia are fresh and dried grapes. Only the small amount of fruit and vegetables are exported to the European markets because of the limited access to transportation, because Uzbekistan is a landlocked country located far away from the market, and the nation's system of standardization and certification of products is imperfectly established. Food exports to the EU are also limited by the fact that Uzbekistan still cannot fulfill technical standards and does not meet EU standards on food safety and phytosanitary control (Lee et al., 2015a).

Potential and Strategies for International Agricultural Cooperation

The most important areas of the national agricultural and food sector with the highest potential of development in the immediate future vary across CIS countries.

Ukraine has very good agro-climatic conditions but the performance of the agricultural sector is relatively low (though it is enough high, compared to the analyzed countries) (Nivievskyi et al., 2015). The lag is determined by the domination of low capital intensity farms. These farms cannot afford investing in modern machinery, high-quality seeds, plant protection and fertilizers. Fertile soils partly compensate these drawbacks and make Ukraine competitive in large number of agro-food products (cereals, flour, oilseeds, vegetable and animal fats, vegetables, fruits, residues of food industry, animal fodder, dairy products, etc.). Cheap feed and raw materials supply for the livestock sector and the processing industry are also important driving forces of the agro-food market development. Some research on the identification of organic production potential was conducted and significant efforts to develop the institutional framework of this niche markets were made. Untapped potential of the organic market could be an attractive perspective for the development as Ukraine has fertile soils, which could give a competitive advantage. The huge debt for natural gas and interruptions of energy supply could encourage investing in the development of biomass production in the immediate future.

In addition, Ukraine's agriculture is still performing well below its potential. Given its fertile black soils and supportive climate, Ukraine is capable to reach the average yields in the EU, i.e. to increase them by about two times. By closing this productivity gap Ukraine's agriculture could make a much larger contribution to the country's economy and welfare. This will require more capital-intensive agriculture, financed by unleashing the potential domestic and foreign investments into the sector. At the moment, the inflow of Foreign Direct Investment (FDI) and total capital investments into Ukraine's agriculture is low in comparison to other sectors considering agriculture's contribution to the GDP.

Key constraints to investment and growth in agriculture are well formulated in the recent World Bank Agricultural Policy Review for Ukraine (World Bank 2013), i.e.:

(i) Policy and Business Environment Constraints: ad hoc policy making and resulting uncertainties for investors; lack of transparency in the implementation of policy; and privileged treatment of favored enterprises and sub-sectors, resulting in uneven playing field for enterprises.
(ii) Private Sector Markets for Land, Finance, Inputs and Services: constrained access to land, finance, private agricultural services and technology, especially for small and medium sized enterprises.
(iii) Public Infrastructure and Services: inefficiencies and gaps in public infrastructure, logistics, technical knowledge and managerial skills; significant gaps in public institutions and efficiency of public services and regulatory agencies, resulting in high costs of doing business.

The driving force of the agricultural and development of food sector's potential in Russia is a state policy of import substitution. Such a policy is inefficient and costly from the economic point of view, but it should certainly increase production of particular agro-food products (i.e. fruits, vegetables, and meat and dairy products). Some positive impact on agriculture-related industries is also possible. Though the coverage of the domestic market gaps in pork, vegetables and fruits production could be quick, production development in agricultural inputs, beef and dairy will take time. The significant growth in the agricultural and food sector is expected. Agricultural land restructuring and increase in productivity, which is below the average of countries with similar agro-climatic conditions, will reduce the gap between the fact and the potential of the sector. Russia probably will strengthen production and export of grain and oilseed, which have the natural competitive advantage. Though the organic product market is an attractive niche, the institutional environment is not favorable for the rapid development of this area. Biomass potential will not be developed as it excludes valuable arable lands from production and endangers on national self-sufficiency and food security issues.

The situation of Belarus distinguishes from the rest of the countries. Belarus has no potential to increase arable area as land is almost fully utilized. The performance is close to neighbor countries of the EU with the exception of some products (for example, rapeseed, wheat, maize, barley, etc.). The moderate potential of development is seen in yields increase and regulation of the structure of the cultivated crops. A reasonable growth of vegetables (cabbage,

carrot, onion, and cucumber), apples and strawberries is possible due to demand in domestic and Russian markets. The development potential of the livestock sector is an attractive direction. The most promising areas are dairy products and related beef production, pork and poultry production. The growing demand for organic products in the domestic market shows that this production also could be an attractive niche in the immediate future. Privileged prices for energy do not encourage investing in the further development of biomass production.

Moldova has good climate conditions and fertile soils, however, yields are below the EU average. Old equipment and machinery, labor force qualification issues and traditional production technologies determine low yields and productivity. The most attractive commodities with export potential are sunflower, walnuts, wheat and maize. Moldova has potential in wine and fruit production that could be realized approaching new markets. Land degradation issues are very important due to over-intensive and unsustainable use of land. The development of the organic product market could be one of the important tools to keep land in production longer. However, this type of farming requires a well-functioning institutional environment and support. Some potential in biomass production could be covered as the government plans to increase consumption of this type of energy.

Yields in Armenia still have a potential for development. Absence of irrigation, poor farmers' skills, old machinery and farm plots' fragmentation are the main factors, which influence economic results. Armenia has a good position in the markets of tomatoes, cucumbers, peaches, apricots and grapes. Berries sector is growing and experts mark its' potential in the organic niche (Bluashvili and Sukhanskaya, 2015). Country made a notable progress in the development of organic production. Certification system allows labeling and selling products as organic even in foreign markets. Fish and crustaceans production is competitive due to low production costs. Armenian tobacco industry lacks local tobacco, which is cheaper than imported one. Wine and brandy production has growing potential; however, sector is vulnerable as the high share is exported to Russia.

Productivity and yields in Azerbaijan are lower in all sectors of agriculture. Crop rotation, shift to modern technologies and the enlargement of the planted areas are among the most important factors to increase potential of the agricultural and food sector. The highest potential for growth has fresh fruits (apples, pomegranates, citrus, etc.), tubers (potatoes), vegetables (cucumbers, tomatoes, cabbages, gherkins, etc.) and animal products (canned meat, eggs, wool, leather, etc.). The government of Azerbaijan plans to increase yields and arable areas of maize, sugar beet, and industrial crops. The potential growth of vegetable, fruits and livestock sector will be achieved increasing productivity (Khalilov et al., 2015). Azerbaijan does not cover the local demand for meat, milk and fish. That is why the livestock sector provides a good potential for growth. Some progress on the development of the organic market is achieved; however, the well-functioning institutional environment would make this niche more attractive. The rapid development of biomass production in energy-independent country is unlikely (Khalilov et al., 2015).

Georgia has the lowest yields for almost all agricultural commodities. The situation could be changed with significant investments in human resources and technological development of the sector (Onugha et al., 2013). The increase in yields and the enlargement of planted area treated as a potential for growth. The highest potential of

development has grapes. This product is important for national wine industry, which has good export potential. Apples, hazelnuts and apricots were mentioned by experts as products with growth and export potential. Some progress in the area of organic production was made and further development could be an attractive niche. Increase in biomass production has low possibility as this area is not supported by the government.

Yields in Kazakhstan are significantly lower than in countries with the similar agro-climatic conditions. The potential growth could be achieved investing in machinery, plant protection and fertilizers, irrigation systems (Syzdykov et al., 2015). Kazakhstan is a leading country in wheat and wheat flour export. This specialization has growth capacities as yields are very low. Linseed, rapeseed, soya beans and grain maize have export growth potential. Kazakhstan also has export potential for beef and sheep meat. The organic market is on the initial stage of the development and has no significant demand in the domestic market. Though the potential of production development is high, the current institutional environment will not encourage remarkable changes in this area. The development of biomass sector in the country is also questionable.

In Kyrgyzstan about three quarters of all poor and four-fifths of the extreme poor live in rural areas. Yet, rural institutions and public services are underdeveloped in many rural areas, and standards for provision of particularly social services such as social protection, are lacking. In a country that heavily depends on agriculture and where majority of the rural residents are women, there is lack of services or access to the existing ones for families, and especially female-headed households (Mogilevskii et al., 2017). The lack of decent employment opportunities for youth and working-age adults resulting in an outward migration trend further aggravates the poverty situation in rural areas. In addition, extreme food poverty changes are observed in rural and conflict-affected areas, where insufficient food-energy intake rose significantly after 2010 (Swinnen et al., 2011).

An “agricultural development strategy” in the Kyrgyz Republic can only be successful if it is part of a broader development and (rural) social policy strategy. First, a key element to enhance agricultural productivity is an increase in economic growth. Growth of the non-agricultural economy will pull surplus labor out of the agricultural sector, an evolution which is necessary to increase agricultural productivity and consequently increase agricultural incomes. The creation of a stable political and economic climate is also a necessary condition to attract foreign capital in the agricultural and food processing sector since political and economic instability is mentioned to be one of the most important existing constraints for foreign investment.

It is crucial to invest in rural education and agricultural extension services (also targeting small household and peasant farms). Investment in (rural) education and extension services would contribute to several objectives, consistent with the overall objective of rural development, such as the improvement of the productivity of existing enterprises, the growth of new enterprises, and a shift of underemployed farm labor to other activities, thereby increasing labor productivity of the remaining farms. Investments to improve rural education could also reduce the incentives for young people to leave the rural areas. A successful agricultural development strategy also needs to be integrated with a regional development strategy. Crucial elements are a good investment climate and improved infrastructure. Infrastructural development is important for a number of factors (see below), including attracting of

investments. The creation of non-farm employment is crucial to create alternative employment for agricultural labor.

In Uzbekistan the water delivery system for irrigation is basically sound at the macro level, although parts of it need upgrading and renewal. Most of the land is irrigated through surface or furrow irrigation procedures, which are cheap to install and operate but inefficient in terms of water use. This matters because of the overall scarcity of irrigation water, most of it being obtained from river flows originating outside Uzbek territory (IFAD, 2017). Rural labor productivity is markedly lower than the levels commonly achieved elsewhere, owing to limited investment in modern technology and human capital. A good basic education standard provides a sound basis for improvements in essential knowledge for specialized production and agribusiness management. There has been a recent surge in investment in intensive horticultural production of both fruit and vegetables. The Government set clear priorities for development of the subsector in Presidential Decree No. 2460 dated 29 December 2015. Support for this initiative has mobilized public investment (including major donors) and private investment to shift out of lower-value wheat and cotton and into horticulture, mainly with an export focus. More than 25,000 ha of new fruit orchards have been established over the past four years. The value of fruit and vegetable exports now represents over 50 per cent of agricultural export earnings. Farm incomes, and the productivity of land, water and personnel employed have all improved as a result (IFAD, 2017).

Significant challenges affecting rural smallholder families include their limited access to land and irrigation water. Limited access to productive assets, good infrastructure, energy, modern technology and knowledge for coping with natural disasters and climate change challenges are also drivers of low rural productivity. Smallholders are also normally excluded from government support for official production of wheat and cotton, and thus have higher input costs. Problems include lack of liquidity, the high cost of foreign exchange and poor access to it, and a regulatory environment that hinders smallholder activities owing to their limited engagement with banks and other institutions, lack of formal business organization and a shortage of collateral. Many smallholders lack knowledge and access to capacity-building to enable them to operate commercially viable farming ventures and other small enterprises.

With regard to institutional structure for rural development, policies and targets are determined by the Government and announced by the Head of State, and then implemented through the Cabinet of Ministers. The Complex of the Cabinet of Ministers for agriculture and water issues is led by the Prime Minister. This Complex coordinates the work of the Ministry of Agriculture and Water Resources (MAWR) and the national State Committee on Land Resources. Additionally, a special commission directs reforms in the agrarian sector, chaired by the Prime Minister, with members including the Ministers for MAWR, Finance, and Economy, and the chairpersons of the committees on land resources, banks and others.

The MAWR is responsible for developing strategies and implementing reforms in the agrarian sector, developing sectorial and regional development programs, conducting market research, providing information to farmers and assisting in attracting foreign and domestic investment in agriculture. The MAWR's Rural Restructuring Agency

(RRA) is responsible for implementing projects financed by various international financial institutions such as IFAD, the World Bank, the Asian Development Bank (ADB) and others. The RRA is responsible for implementing the IFAD-supported HSP and DVCDP.

One of the MAWR's strengths is that it is represented in each region. The regional departments are headed by the deputy governors of each region, thereby providing synergies and authority with regional and lower-level administration. This enables MAWR to have direct contact with farmers, and to monitor the performance of rural investments. The main weaknesses of the MAWR are related to the previous centrally planned systems with the firmly directed approach to management. Contracts to produce cotton and certain other crops reduce farmers' options to manage their land as they perceive opportunities. Obsolete equipment and outdated knowledge also impair the ability of MAWR to support improved agricultural productivity and quality. There are opportunities for rural growth in both export and domestic markets. The growth of horticultural exports is already well documented and is strongly backed by private and public investment.

Import statistics also reveal major import-substitution opportunities for wheat products, barley, edible oils and sugar, which are mostly produced by large-scale private farms. There are also significant opportunities for *dekhqa n*[5] farms in the production of meat, dairy, freshwater fish and horticultural products, including potatoes, to satisfy local demand. Annual meat imports are valued at US$69 million, poultry products at US$43 million, fish at US$7.1 million and pistachio at US$7.8 million (IFAD, 2017). All of these products could be profitably produced locally, but this would require major improvements in the application technology employed for irrigation systems, to ensure highly efficient water use and a low risk of salinity and erosion. Uzbekistan is also an importer of plant seeds and nursery seedlings. These could be multiplied locally with the proper supervision.

There are many opportunities to boost the growth of rural productivity and incomes, related to the need for agricultural technology modernization; more efficient use of irrigation water; adoption of climate-resilient agronomic systems; and investment in the knowledge and capacity of farmers to apply improved techniques and business principles more effectively.

Conclusion

After the collapse of Soviet Union in 1991, eleven former Soviet republics signed an agreement in Commonwealth of Independent States (CIS). Georgia joined to CIS two years later and was member until 2009. Currently, only nine countries ratified the membership of CIS Charter. After the gaining independency, each former republic has committed its own transition based on market economy. The significant differences among CIS countries can be observed in the level of economic welfare, the level of employment, accompanied by the level of labor forces in CIS.

Hence, CIS countries can be divided into donor countries and recipients of migrants. In this regard, Russia

5) Derived from "Uzbekistan -Strengthening the Horticultural Value Chain", World Bank, 2012.

leading significant role according to its capacity of receiving migrants and there is heist demand for agricultural and food products. Other countries often play the role of labor donors, and their agricultural and food markets are highly dependent on the level of demand in the Russian market (Drozdz et al., 2015). Almost 50 percent of the whole CIS country's population lives in Russia and Ukraine is second most populated country. Among Central Asian countries Uzbekistan is most populated country. It is worthwhile to classify CIS countries according to the incomes of their population, which is usually measured by Gross National Income per capita. Only, Russia and Kazakhstan are considered as middle income country among CIS countries based on the World Bank indicators.

Until the beginning of 1990s agricultural sector of the analyzed former Soviet republics had strict specialization and strong inter-dependence, which were established by central planners. The system was set to ensure a desired food security of the all USSR and guarantee employment of the certain share of rural population (Drozdz et al., 2015). The role of agricultural sector in CIS countries is still significant that can be assessed by the share of the rural population, the share of agricultural employment, and the share of agricultural Gross Value Added (GVA) in the country's GDP (Lerman, 2009). The countries with most rural population are Tajikistan, Kyrgyzstan, and Uzbekistan. After gaining their independences, the structure of agricultural production changed in all CIS countries based on their agricultural policies in crop and livestock production systems. Wheat was the main crop in Central Asian CIS countries during 2004−2014. After Russia and Ukraine, Kazakhstan ranks the third position in the wheat production. From 2004 to 2014, the production of wheat increased by 1.3 times in Kazakhstan (Syzdykov et al., 2015). In Uzbekistan, wheat and cotton are two main strategic crops and production and marketing of these crops are under state procurement. From the first years of independence, agricultural policy in the country was driven by government's intention for an increase of wheat production volumes for ensuring food self-sufficiency.

The most important areas of the national agricultural and food sector with the highest potential of development in the immediate future vary across CIS countries. Every CIS country has its good potential to develop at near future. There are many opportunities across the CIS countries to boost the growth of rural productivity and incomes, related to the need for agricultural technology modernization; more efficient use of irrigation water; adoption of climate-resilient agronomic systems; and investment in the knowledge and capacity of farmers to apply improved techniques and business principles more effectively.

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