

Food and nutrition security in Eurasia: Evolution, shocks and policies

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Abstract

Food and nutrition security is at the forefront of policy making around the globe. This study focuses on a number of Eurasian countries, namely the Russian Federation, Kazakhstan, Uzbekistan, Armenia, Tajikistan and Kyrgyzstan. From under-nutrition to various forms of malnutrition and obesity, these countries face different challenges when it comes to food and nutrition security. Over the last three decades, their situations have been affected by a number of important income shocks, including through falling remittances from relatively wealthier to poorer countries. This paper analyzes these developments and discusses how these countries have introduced policies to address food and nutrition security.

Keywords: food security, nutrition security, agricultural policy, food policy.

JEL classification: Q3, Q18.

1. Introduction

Food and Nutrition Security (FNS) has become an increasingly important policy objective for the international community. This is reflected in its recent inclusion in the Sustainable Development Goals (FAO et al., 2017), the start of the United Nations Decade of Action on Nutrition (2016–2025) and the endorsement of the Rome Declaration on Nutrition (FAO and WHO, 2014). Over the years there have been different attempts to define “food security” — or, more recently, “food and nutrition security.” An often used definition is that of FAO

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(see e.g. The State of Food Insecurity 2001) which defines food and nutrition security as

a situation that exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life.

The strong emphasis placed on nutrition in the 2030 Agenda is an important step towards achieving global development priorities and an opportunity for nutrition action in the Eurasian region, where malnutrition remains an important obstacle (FAO, 2017).

In the late 1990s, at the height of the economic instability that followed the transition from a centrally planned economy to market economy, the food security situation was very problematic across Eurasia (Liefert, 2004; Sedik et al., 2004; Babu and Reidhead, 2000). However, over the past 15 years much has changed. The economic transition in Eurasia has led to rapidly changing diet patterns and, as a result, a nutritional transition. Rising incomes since 2000 have substantially reduced poverty and undernourishment and improved food security. Yet undernourishment remains a problem in poorer countries of the Caucasus and Central Asia (Akramov and Shreedhar, 2012; Swinnen and Van Herck, 2012). Diets are also of low quality in many countries, resulting in micronutrient deficiencies. At the same time, as Eurasian countries become richer and work more sedentary, a new malnutrition challenge is emerging. Overweight and obesity are increasing while undernourishment remains present in some areas (Huffman and Rizov, 2007; Fursov et al., 2017).

In this paper we review the FNS situation in six countries in Eurasia: the Russian Federation, Kazakhstan, Uzbekistan, Armenia, Tajikistan and Kyrgyzstan. These Eurasian countries can be divided into three broad categories based on the state of food and nutrition security today. The Kyrgyz Republic, Tajikistan and Uzbekistan are mainly affected by undernutrition and micronutrient deficiencies. The problem of undernutrition is especially problematic in Tajikistan with over 30% of the population currently undernourished. Armenia and Kazakhstan face the triple burden of malnutrition as a considerable share of children below five remain stunted while obesity affects more than 20% of the adult population, and adults and children in both countries face severe micronutrient deficiencies. The Russian Federation mostly faces problems of over-nutrition with currently more than 23% of the adult population considered obese and more than 57% overweight.

We next discuss a number of important income shocks experienced by this region and later analyze the policy choices governments in these six countries have made to influence food and nutrition security. We identify two key aspects in which policy frameworks differ across countries. First, countries vary in how much emphasis policy makers place on self-sufficiency to achieve food and nutrition security. While policy makers in Armenia, the Kyrgyz Republic and Tajikistan have started recognizing the importance of trade, Kazakhstan, the Russian Federation and Uzbekistan continue to strongly emphasize food self-sufficiency. The second major difference in policy frameworks is the importance policy makers place on nutrition as part of overall food and nutrition security. Armenia and the Kyrgyz Republic have taken important steps towards integrating a “nutrition focus,” while the other countries have not (yet) integrated nutrition as a crucial element in their “food security” strategy. Global awareness and recognition of nutritional chal-

enges is growing. In the last section of our paper, we discuss several examples of successfully implemented nutrition policies and programs in the world.

2. The evolution of food and nutrition security

In general, countries face three types of FNS problems: undernutrition, micronutrient deficiencies and over-nutrition. Table 1 and Table 2 present several indicators of undernutrition and micronutrient deficiencies faced in the Eurasian countries. Despite the progress made across Eurasia in the last 15 years, currently only two countries, Russia and Kazakhstan, are below 2.5% prevalence of undernourishment.¹ Undernourishment remains a major challenge in many other Eurasian countries, such as Armenia and the Central Asian countries other than Kazakhstan. Undernourishment remains especially pervasive in Tajikistan where more than 30% of the population is estimated to have insufficient dietary intake to meet daily energy needs. The problem of undernutrition faced by Tajikistan is reflected in the high prevalence of childhood stunting and wasting, estimated to be respectively 26.8% and 9% in 2016.

All Eurasian countries have achieved significant reductions in poverty over the last decade with the largest poverty reduction rates observed in Uzbekistan, Kyrgyzstan and Tajikistan. Nevertheless, despite this progress, 27.1% of the population in Uzbekistan had to survive on less than \$1.90 a day in 2016 (Table 1). This high poverty count is reflected in high prevalence rates of childhood stunting, estimated to affect 19.6% of children below the age of five (see Table 1). Kyrgyzstan and Armenia have a substantially lower poverty count but still face considerable levels of childhood stunting, respectively 12.9% and 9.4%.

Table 1
Food security indicators.

Country	Poverty ratio at \$1.90 a day (2011 PPP, %)		Prevalence of under-nourishment (%)		Stunting (% of children < 5 y.o.)	Wasting (% of children < 5 y.o.)	Prevalence of anemia (% of children < 5 y.o.)		Prevalence of anemia in women of reproductive age (%)	
	in 2016	change from 2002	in 2016	change from 2002	latest years available	latest years available	in 2016	change from 2002	in 2016	change from 2002
Russian Federation	0.0	-0.7	<2.5	-1.9			25.7	-0.3	23.3	2.2
Kazakhstan	0.0	-6.9	<2.5	-3.2	8.0	4.1	29.3	-8.0	30.7	-2.1
Kyrgyzstan	1.4	-32.8	6.4	-9.4	12.9	2.8	38.3	-0.6	36.2	3.3
Tajikistan	4.8	-28.1	30.1	-13.1	26.8	9.9	31.3	-6.9	30.5	-6.6
Uzbekistan	27.1	-39.5	6.3	-12.6	19.6	4.5	36.6	-16.2	36.2	-9.1
Armenia	1.8	-13.3	4.4	-19.2	9.4	4.2	31.5	4.5	29.4	9.3

Note: Poverty data for Uzbekistan is for 2012; Data for stunting: Kazakhstan 2015, Kyrgyzstan 2014, Tajikistan 2012, Uzbekistan 2006, Armenia 2016; Data for wasting: Kazakhstan 2010, Kyrgyzstan 2014, Tajikistan 2012, Uzbekistan 2006, Armenia 2010.

Sources: FAOstat, Food security indicators; FAO (2016); World Bank, World development indicators.

¹ The prevalence of undernourishment is an indicator that estimates the number of people whose food consumption is insufficient to meet dietary energy needs for an active and healthy life.

Table 2

Micronutrition deficiency indicators.

Country	Prevalence vitamin A deficiency (% of children < 5 y.o.)	Prevalence vitamin A deficiency (% adult)	Prevalence zinc deficiency (% adults)
Russian Federation	14.1	n.a	11.7
Kazakhstan	27.1	27.0	9.6
Kyrgyzstan	26.3	37.8	13.8
Tajikistan	26.8	31.1	66.8
Uzbekistan	53.1	38.4	24.4
Armenia	n.a	n.a	49.4

Sources: FAO (2015, 2016).

The prevalence of undernourishment in Kazakhstan is below 2.5%, on par with levels reported in high-income countries. Nevertheless, 8% of children below the age of five are still suffering from stunting in Kazakhstan.

As food becomes more readily available and undernutrition less prevalent, a new challenge is facing the Eurasian countries—micronutrient deficiencies or what has been termed “hidden hunger.” Poor diets can lead to an insufficient intake of nutrients, particularly iron, vitamin A, and zinc (FAO, 2017). Although micronutrient deficiencies occur in both rich and poor countries, they are more prevalent in the poorer countries of the Caucasus and Central Asia. Insufficient dietary intake of iron can lead to iron-deficiency anemia, which causes a decrease in the number of red blood cells and is associated with adverse outcomes including reduced productivity and cognitive function (Balarajan et al., 2011; Jáuregui-Lobera, 2014). Especially at young ages anemia can have dire consequences due to its effects on cognitive development (Grantham-McGregor and Ani, 2001; Haas and Brownlie, 2001; Lozoff, 2007). Reduced capacity to learn in childhood has been shown to affect later life outcomes (Hoddinott et al., 2008; Gertler et al., 2014).

Anemia is considered a public health problem when the prevalence level in the population exceeds 5%. Anemia—both in children and women of reproductive age—is a public health problem across many Eurasian countries. Prevalence levels of anemia for children below the age of five vary between 25.7% for the Russian Federation and 38.3% for Tajikistan. For women of reproductive age the prevalence level of anemia in the Eurasian countries varies between 23.3% for the Russian Federation and 36.2% for Uzbekistan.² Childhood anemia has significantly reduced in most countries since 2002, with the exception of Armenia, which experienced a 4.5% increase (see Table 1). However, analyzing in more detail the annual prevalence levels shown in Fig. 1 we find that, despite the large gains in the reduction of childhood anemia since the start of the economic transition period in the early 1990s, some countries have experienced a recent negative reversal. In Armenia, the prevalence level of childhood anemia started to increase again after 2003 from 27% to 31.5% in 2016. Despite Kyrgyzstan’s steep reduction of childhood anemia since the transition period, prevalence levels have moderately increased again since 2010 from 34.4% to 38.3% in 2016. The slight

² The World Health Organization defines prevalence levels of anemia between 20% and 40% to be of moderate severity for the overall health of the population.

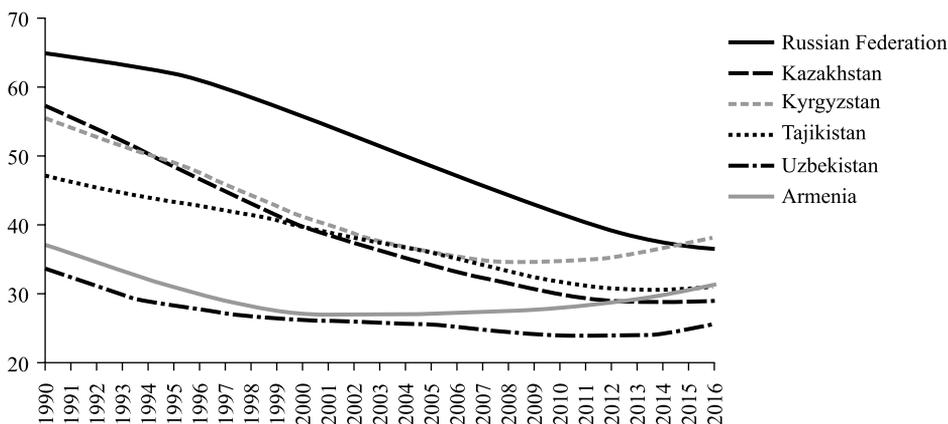


Fig. 1. Trend in childhood anaemia prevalence, 1990–2016 (% children below 5 y.o.).

Source: World Bank, World development indicators.

reversal in the reduction of childhood anemia in the Russian Federation started in 2014 when the country was hit by a dual oil and sanction shock. The prevalence level of childhood anemia in the Russian Federation increased from 24.1% in 2013 to 25.7% in 2016. In all other countries, the prevalence of childhood anemia has steadily declined since the transition period in 1999. Another area which remains especially problematic is the rate of anemia among women of reproductive age. In Russia, Kyrgyzstan and Armenia, the rates of anemia among women have increased since 2002, unlike the other FNS indicators. The cause of this increase is still unclear despite improvements in other FNS indicators.

Other micronutrient deficiency indicators are shown in Table 2. Vitamin A deficiency in children below the age of 5 is a risk factor for blindness and mortality from measles and diarrhea (Stevens et al., 2015). Uzbekistan is the country with the highest prevalence level of vitamin A deficient pre-school aged children in the Europe and Central Asia region as 53.1% of children are affected by this micronutrient deficiency (FAO, 2015). Kazakhstan, Kyrgyzstan and Tajikistan face lower prevalence levels of childhood vitamin A deficiency at around 26%, which is still considered a severe public health problem. The Russian Federation faces a moderate prevalence level of childhood vitamin A deficiency at 14.1%. (see Table 2). Micronutrient deficiency is also present among the adult population. The prevalence level of vitamin A deficiency is particularly high for Uzbekistan, Kyrgyzstan and Tajikistan ranging between 31.1% and 38.4%. Another important micronutrient for food and nutrition security is zinc, which plays an important role in biological functions, including protein synthesis, cellular division and nucleic acid metabolism (Black et al., 2013). Zinc deficiency in women of reproductive age and during pregnancy has been shown to be an important risk factor with adverse long-term effects on growth, immunity, and metabolic status of offspring (King, 2000). The population of Tajikistan faces the highest risk of zinc deficiency in the Europe and Central Asia region, followed closely by Armenia (FAO, 2015). In 2016, it was estimated that 66.8% of the adult population in Tajikistan and 49.4% of Armenia's adult population was deficient in zinc. Prevalence rates of zinc deficiency are lower for the other Eurasian countries, between 24.4% in Uzbekistan and 11.7% in the Russian

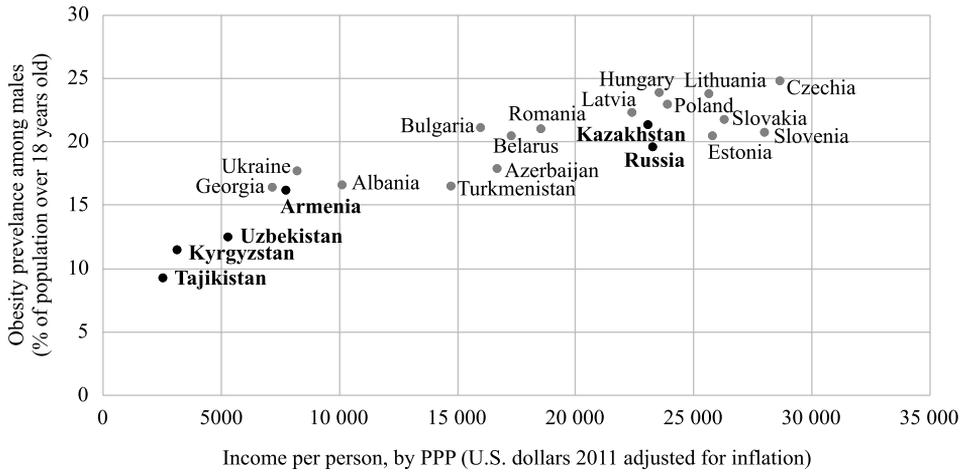


Fig. 2. GDP per capita vs prevalence of obesity among males (over 18 y.o.).

Note: Obese refers to individuals with a body mass index greater than or equal to 30.
Sources: WHO (2014); Gapminder.

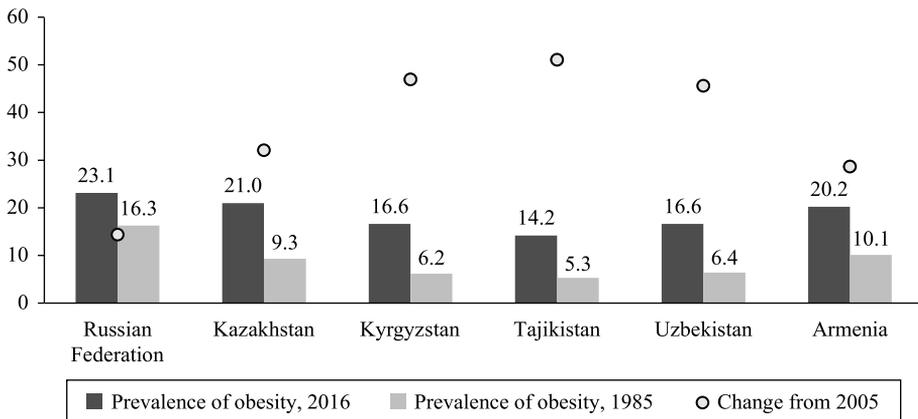


Fig. 3. Prevalence of obesity among adults in 2016 and 1985, and change from 2005 (%).

Note: Adult includes people of the age of 18 and older.
Source: WHO (2018).

Federation. Taken together, these figures on undernutrition and micronutrient deficiencies indicate that there is considerable heterogeneity in the types of food and nutrition challenges the Eurasian countries face today.

As per capita income grows, so too has over-nutrition, in the form of overweight³ and obesity (Fig. 2).⁴ Countries with higher incomes, such as Russia and Kazakhstan, are associated with higher obesity rates, compared to the lower income countries. Fig. 3 shows the current and retrospective prevalence of obesity among adults, and percentage change from 2005. Since 1985, the prevalence of obesity has more than doubled in most of the countries. Although the prevalence

³ Overweight in adults is defined as Body Mass Index ≥ 25 .

⁴ Obesity in adults is defined as Body Mass Index ≥ 30 .

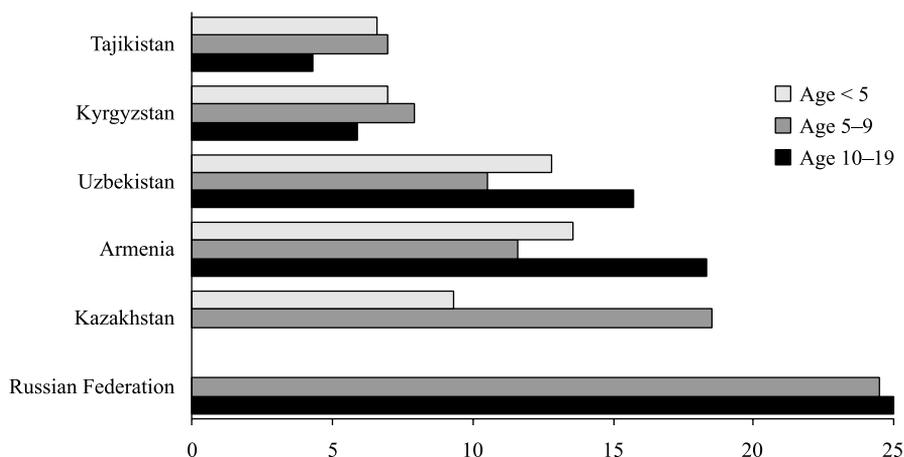


Fig. 4. Prevalence of overweight among children.

Sources: WHO (2017); Nutrition Landscape Information System (NLIS); Childhood Obesity Surveillance System.

of obesity among adults is highest in Russia (23.1%), the change from 2005 levels has been the smallest (15%)⁵. The Central Asian countries have experienced the greatest increase in the prevalence of obesity since 2005. Somewhat paradoxically, this is particularly true for Tajikistan, the poorest country, although it still has the lowest levels of obesity among the six and also faces undernutrition. The problem of over-nutrition does not only affect the adult populations in the Eurasian countries. Children below the age of five are at increasing risk of overweight⁶ with prevalence levels ranging from 6.6% in Tajikistan to 13.6% in Armenia (Fig. 4). There is no data available on the level of childhood overweight for the Russian Federation.

Based on the state of food and nutrition security today, the Eurasian countries can be divided into three broad categories (FAO, 2016): (1) those primarily affected by undernutrition and micronutrient deficiencies; (2) those facing the triple burden of malnutrition, characterized by residual undernutrition, persisting micronutrient deficiencies and increasing rates of obesity; and (3) countries primarily affected by over-nutrition. Countries such as Kyrgyzstan, Tajikistan and Uzbekistan belong to the first category as they face a high prevalence of undernutrition and a double-digit prevalence of stunting, but a relatively low obesity prevalence. The problem of undernutrition is especially problematic in Tajikistan with more than 26% of the children below the age of five stunted and 9.9% wasted (see Table 1). Furthermore, all three countries face severe public health problems caused by large micronutrient deficiencies in both child and adult populations (see Table 1 and Table 2).

Countries such as Armenia and Kazakhstan face the triple burden of malnutrition, as a considerable share of children below the age of five are stunted (9.4% and 8% respectively), while obesity affects more than 20% of the adult population

⁵ Zohoori et al. (2001) reported that, in 1992, the prevalence of overweight and obesity was already at above 35% and almost 20% among the population older than 30 years in Russia.

⁶ Overweight is defined as BMI-for-age > +1 SD in school-age children and adolescents 5–19 years (%).

(see Table 1 and Fig. 3). Both countries furthermore face severe micronutrient deficiencies in both child and adult populations (see Table 1 and Table 2). Indeed, children and adolescents are increasingly likely to be overweight or obese in both of these countries. The latest data for 2017 shows that 9.3% of children below the age of five and more than 18% of adolescents are overweight in Kazakhstan as shown in Fig. 4. In Armenia, child obesity is even more severe, with 13.7% of children below the age of five classified as overweight. Similar to Kazakhstan, more than 18% of the adolescent population in Armenia is at risk of overweight (see Fig. 4). Russia is in the last category, mostly facing problems of over-nutrition with currently around 23.1% of its adult population classified as obese and 57.5% as overweight. Moreover, overweight in school-age children between five and nine years old is estimated to be 24.5%, while the prevalence of overweight for adolescents (10–19 years old) is reported to be 25% as shown in Fig. 4.

3. Income, shocks and food and nutrition security

The most obvious reason behind the changes in the FNS indicators is income (economic decline and growth). Food products account for a large portion of household expenditures among low income households in Eurasia. In most Central Asian countries, food accounts for almost 60% of household consumption for the general population and just under 70% for low income households. In Russia, 36% of household income is spent on food, while in Armenia it is 34%. Clearly changes in income will affect food expenditures and thus food security.

As indicated earlier, many Eurasian countries experienced a significant economic decline in the 1990s. Since 2000, there has been a reversal of the economy with significant growth, although the income growth rates differ substantially between the countries (Fig. 5). Income has come from economic growth in the countries themselves and from spillover effects of income growth in richer countries through remittances. Remittances are a very important source of income (Fig. 6). In Kyrgyzstan and Tajikistan they equal up to 30% of GDP. Russia is the main source of remittances for many Eurasian countries. The share of remittances coming from Russia range from around 60% in Armenia, to almost 80% in Kyrgyzstan and Tajikistan, and virtually all remittances in Uzbekistan.

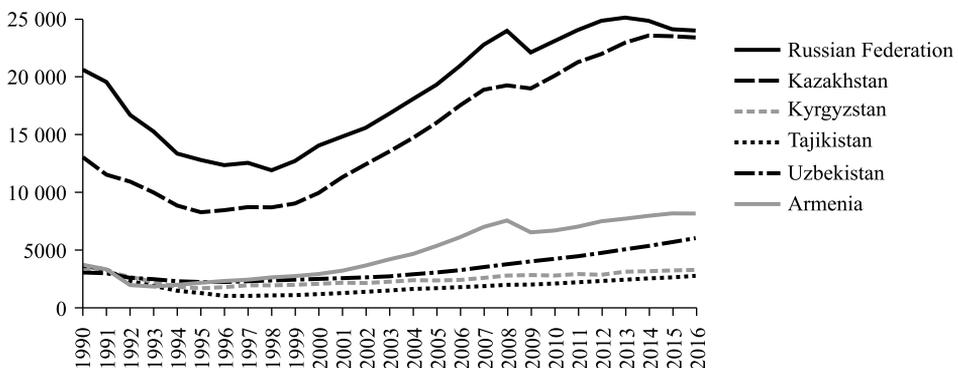


Fig. 5. GDP per capita, PPP (constant 2011 international dollars).

Source: World Bank, World development indicators.

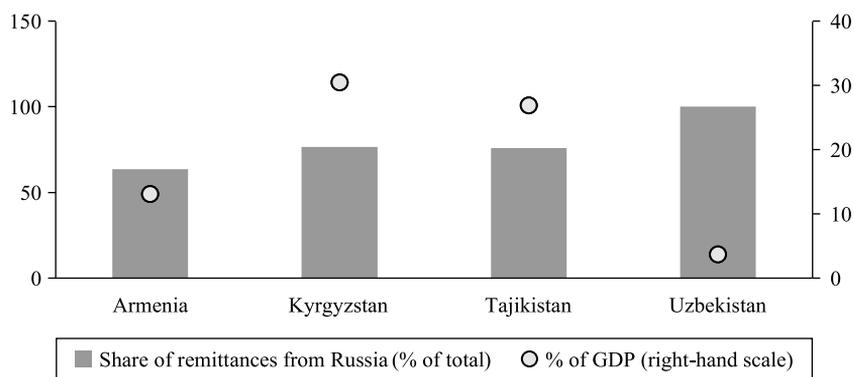


Fig. 6. Importance of remittances from Russia.

Source: World Bank, Migration and remittances data.

In the past decade, some economic shocks have affected poor households' incomes and thereby their food security. In the late 2000s the combination of increasing food prices (starting in 2007 and culminating in the spring of 2008) and the global financial crises (2008–2009) exposed the region to significant adverse economic and social impacts. The economies in Eastern Europe and Central Asia were forecasted to experience the deepest contraction among all emerging and developing economies (EBRD, 2009). The impact in 2008 and 2009 was indeed severe: economic growth slowed down and real GDP decreased in all countries in 2009. Part of this was a decline of the local economy and part a significant fall in remittance payments, which mostly affected the poorer Eurasian countries (Brownbridge and Canagarajah, 2010).

The impact of the global food crisis was much more complex and heterogeneous than initially claimed (Headey and Martin, 2016; Swinnen and Squicciarini, 2012). However, in all Eurasian countries (as in most emerging and developing countries around the world), the global food crises triggered several policy actions to counter the price movements (Pieters and Swinnen, 2016). Many governments, in particular in developing and emerging countries, intervened to reduce the effect of the global food price spikes (Barrett, 2014; Naylor, 2014; Pinstrup-Andersen, 2014). Governments used price and trade policies to counter global price movements and to insulate the domestic market from the international price spikes (Demeke et al., 2009). At the same time food price spikes triggered media and policy attention towards the broader issues of hunger and rural poverty.

In general, Eurasian exporting countries banned, taxed or restricted food exports, while importing countries reduced import tariffs. All major grain exporters in the region (Kazakhstan, Russia and Ukraine) implemented export restrictions to secure their domestic supply of grain and protect their local consumers from increasing food prices (Sedik, 2011). For example, Kazakhstan imposed an export tariff on wheat in early 2008, and increased it to an export ban in April of the same year (Dollive, 2008). In September 2008, the Kazakh government abolished the export ban on wheat, but in September 2010, they introduced an export ban on oilseeds, vegetable oils and buckwheat. The Russian government imposed in January 2008 a prohibitive export tariff of 40% on wheat exports outside its customs union. In February 2008, Russia tightened the export

restraint, extending the export tax to its customs union to prevent the circumvention of the tariff by export through Kazakhstan or Belarus. In July 2008, the Russian government reduced the export tariff. Following the 2010 drought, the Russian government introduced a ban on flour, wheat, barley and corn exports in September 2010. Jones and Kwiecinski (2010) argue that the impact of the export restrictions on food prices in Russia was limited as consumers were not shielded from the rising food prices.

Several of the poorer Central Asian and Caucasus countries in the region rely heavily on imports from Russia, Ukraine and Kazakhstan for staple foods, especially for cereals, one of the main components of the diets of all countries in the region (Fig. 7 and Fig. 8). Hence, export restrictions by the major grain producers in the region were expected to have a negative impact on the FNS situation of the grain importing countries in the region. However, Sedik (2011) argues that the impact on total food supply of the poorest importing countries was rather limited because of a rapid shift towards more import of flour and other cereals (Table 3). Grain importing countries reduced import constraints to facilitate grain imports. For example, in May 2008 the Azerbaijan government removed customs on grain and rice imports. In Moldova, the government removed the import duty (5%) on wheat and the 20% VAT on imported grains (FAO, 2011). These measures have similar effects to the export restrictions imposed by exporting

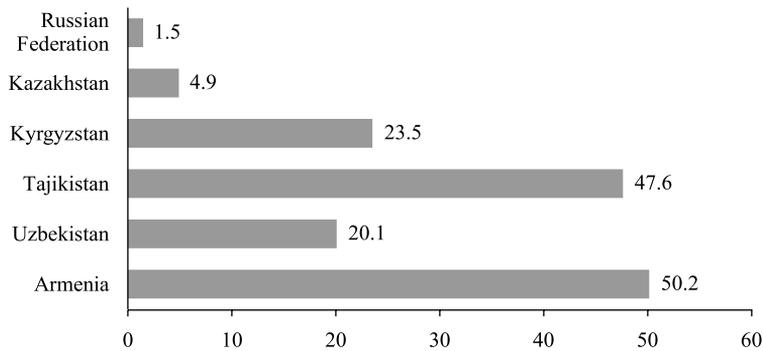


Fig. 7. Cereal import dependency ratio (% average 2006–2016).

Source: FAOstat.

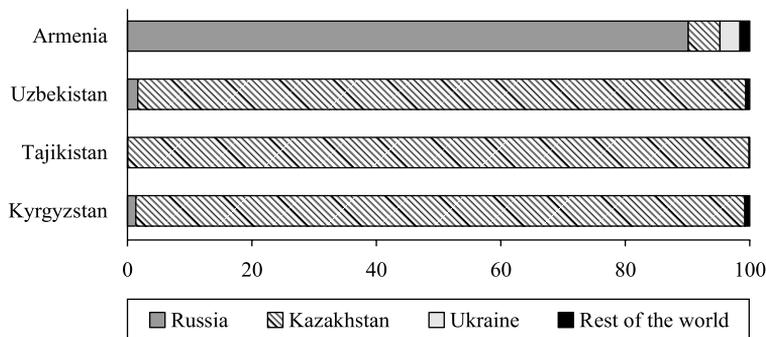


Fig. 8. Wheat imports by source country (% of total wheat imports, average 2006–2017).

Source: ITC calculations based on UN COMTRADE statistics.

Table 3

Evolution of imports in 2007–2008 (% change in import quantities).

	Wheat	Flour of wheat	Total cereals
Armenia	–40	507	–34
Kyrgyzstan	–27	70	–7
Tajikistan	–9	9	5

Source: FAOstat.

countries: in the short-run they are expected to lower domestic prices, while on the world market they lead to higher prices. These countries also introduced trade policies to discourage (prevent) exports in order to ensure the domestic food supply. For example, in June 2009, the Kyrgyz government introduced export duties on wheat, flour, vegetable oil and some seeds (FAO, 2011). Tajikistan introduced an export restriction for locally produced wheat to neighboring countries (World Bank, 2011). Throughout the region, governments also intervened in other ways to minimize food price inflation. For example, in 2008, the Russian government implemented price controls on the prices of primary products, such as bread, milk, sunflower oil and eggs (OECD, 2009). In Georgia, the Tbilisi municipality opened grocery stores, giving a 20% discount on basic products for vulnerable households (World Bank, 2011). In Kyrgyzstan, the government sold bread and other primary products at lower prices to the poor (Suimbaeva, 2009). In Uzbekistan, the government kept the prices low by selling more flour from state resources (World Bank, 2011).

The food and nutrition security situation in the Eurasian region took another turn in 2014 when the European Union and other Western countries levied travel bans and asset freezes on Russian individuals believed to be implicated in the crisis in eastern Ukraine. Harsher financial sanctions on Russian financial institutions and energy conglomerates followed soon after in July 2014. The intensification of the imposed sanction regime coincided with the dramatic fall of the international oil price in the summer of 2014 and a collapse of the ruble, plunging the Russian economy into recession. The Russian ruble lost at least 50% of its value against the US dollar in less than 18 months. This depreciation was unprecedented since 2001 and even the decline of the Russian currency during the world economic crisis of 2008–2009 dwarfed compared to the 2014 depreciation (Dreger et al., 2016). GDP contracted –2.8% in 2015. Strong economic linkages of the other Eurasian countries with the Russian economy through remittances and economic relations (and also because the other dominant economy, Kazakhstan, too suffered from falling revenues from oil exports) resulted in an economic downturn and worsening food security throughout the region (Fig. 9).

These developments should also be considered together with Russia's accession into the World Trade Organisation in 2012. The WTO accession implied significantly easier market access conditions for other countries to the Russian market, and thus increased competition for Russian producers of commodities such as meat, dairy, and fruit and vegetables. The counter-sanctions against Western countries, however, also included import bans for several of these products into Russia, protecting their domestic agricultural markets. The Russian Federation thus used the counter-sanction regime also as a trade policy. The self-imposed food embargo did come at a cost to the Russian Federation. Crozet and Hinz

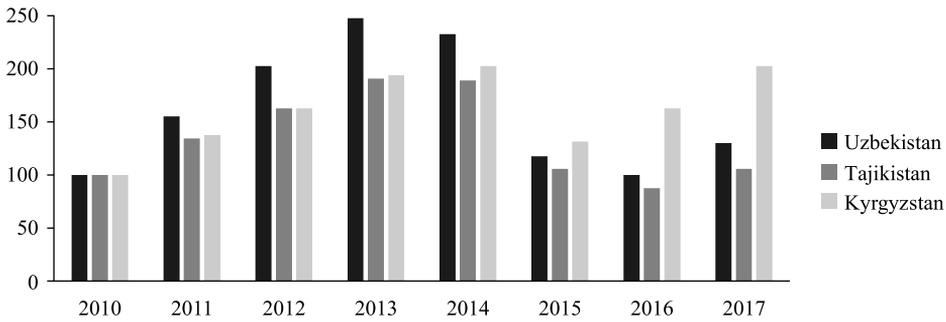


Fig. 9. Total remittance inflow from Russia, 2010–2017 (index 2010 = 100).

Source: Akramov et al. (2018).

(2016) estimate the trade loss for the Russian Federation between 2014 and 2015 to be \$70 billion, or 15% of total Russian trade. While domestic producers saw their incomes increased, Russian consumers faced the cost of the embargo as food inflation decreased disposable incomes and hence led to a decline in overall food security. Data from Rosstat shows how the average share of disposable income spent on food increased from 33.2% in 2013 to 37.4% in 2015. Monastyrenko and Hinz (2017) find that food prices in the Russian Federation rose by 25.72% between January 2014 and 2016.⁷

To summarize, in the last three decades Eurasian countries have experienced a number of setbacks to their FNS through income shocks. First was the economic decline in the early years of transition followed by a recovery in the early 2000s. The second major shock came with the increased prices and financial crisis in the late 2000s. To protect their local consumers, Eurasian countries resorted to various policy interventions. Major grain exporters introduced export restrictions and/or bans, while major importers reduced import constraints. Other policy interventions included price controls for primary products. Yet another major hit came with the introduction of sanctions against Russia, which followed with counter-sanctions by Russia against Western economies. It is important to note that these income shocks affect FNS in the Eurasian countries not only directly, but also through falling remittances from relatively wealthier to poorer countries.

4. Food and nutrition security policies in Eurasia

Numerous programs, policies, and strategies exist with the explicit or implicit objective of achieving food and nutrition security. Also, at the policy front, there is substantial heterogeneity in the existing policy framework concerning the topic of food and nutrition security. These include macro-economic policies and regulations that affect investments and economic growth. They furthermore include

⁷ These authors find that the self-imposed embargo induced a rise in the average price of banned food items of 4.2% over this 2-year period with a maximum increase of 9.1% reported in January 2015. Negative price shocks were found to be heterogeneous and higher for districts that were more reliant on food imports before the embargo. Moreover, given that three quarters of the Russian population lives in urban areas, the impact of rising food prices is likely to be more severe for poor urban households who lack the possibility to switch to their own production (Bezemer and Headey, 2008).

policies that affect the production side and value chains, such as agricultural subsidies, trade regulations, land reforms, etc. Policies that more directly target the consumer side include food safety policies, which regulate what type of foods are permitted to be traded, sold and consumed. They also include health policies. In many countries, nutrition programs that are organized and implemented fall under the authority of ministries of health rather than under the “agricultural and food policy” umbrella.

Other food and nutrition security policies are legal and regulatory initiatives. These approaches differ and have also changed significantly over time. In particular, countries interpret food security in different ways and have emphasized (and implemented) different policies to achieve it. Table 4 provides a list of the current FNS related policies in a number of Eurasian countries. To date, some Eurasian countries (Armenia, Kyrgyzstan, Russia, and Tajikistan) have stand-alone laws on food security. Kazakhstan and Uzbekistan do not. Food security in these two countries is mentioned as part of their overall national security goals, and/or as part of their agricultural development goals. Besides these differences, there are two key aspects in which the country policy frameworks differ. The first major difference stems from the way countries view the availability aspect of FNS, with some putting more emphasis on *self-sufficiency*, while others also recognize the importance of trade. The second major difference is related to the amount of emphasis the countries (do not) put on nutrition in the context of food security.

Table 4

Current FNS related policies in Eurasian countries.

Country	Name of the policy document (year adopted)	Is <i>self-sufficiency</i> part of the food security concept?	Is <i>nutrition</i> part of the food security concept?
Russian Federation	Food security doctrine (2010)	Yes	No
Kazakhstan	<i>No stand-alone law on food security.</i> Food security is mentioned in the Law about grain (2001). Since then in various other laws.	Part of agricultural development strategy	No
Kyrgyzstan	The Law of the Kyrgyz Republic “On food security of the Kyrgyz Republic” (2008) Amendment to the Law to include “healthy nutrition” as part of the food security issues (2017).	No	Yes
Tajikistan	Law on food security (2010)	Yes	No
Uzbekistan	<i>No stand-alone law on food security.</i> Food security is mentioned as part of the Concept of national security (1997).	Part of agricultural development strategy	No
Armenia	Law on ensuring food security (2002) National food security concept (2011)	Part of agricultural development strategy	Yes

Sources: Official documents.

The strongest emphasis on self-sufficiency is in Russia, Kazakhstan and Uzbekistan. Their food security laws list several key foodstuffs (such as grains, sugar, vegetable oil, potatoes, meat, milk and table salt) along with their recommended targets for self-sufficiency. For example, Russia's *Food security doctrine* (2010) uses the following criteria to assess the state of food security in the country: of the total commodity resources on the domestic market, no less than 95% of grain; 80% of sugar; 80% of vegetable oil; 85% of meat and meat products; 90% of milk and milk products; 80% of fish products; 95% of potatoes; and 85% of table salt should be produced domestically. In Kazakhstan, the threshold for self-sufficiency levels for vital food products is set at 80%.⁸ Uzbekistan has pursued a rigid self-sufficiency policy since independence and continues to implement state-run production and procurement of certain strategic commodities to fulfill food self-sufficiency goals.

Policy instruments that are used in these countries to achieve self-sufficiency include: (i) producer support for agricultural inputs; (ii) trade interventions to favor domestic production and protect the country from imports, or discourage exports to protect domestic consumers from soaring prices; (iii) price controls for basic food items; and (iv) market interventions and management of commodity stocks (FAO, 2015). There are differences among countries in the mix of policy instruments and the degree to which they are used to attain food self-sufficiency.

The emphasis on self-sufficiency is somewhat less in Tajikistan and Armenia. Tajikistan's legal food security definition was adopted in 2010 and closely follows the FAO definition. That said, while it includes the FAO's four pillars of food security, it also includes an 80% self-sufficiency target for key foodstuffs. Similarly, Armenia introduced the *National food security concept* in 2011. This document also closely follows the FAO definition and emphasizes the multidimensional nature of food security and highlights the importance of addressing all four pillars of food security (Haratunyan, 2018). Nevertheless, it should be noted that self-sufficiency targets for key foodstuffs in Armenia are still part of its agricultural development goals and are planned to be raised from the currently attained levels of 60% to 74–76% by 2021.⁹

The lowest emphasis on self-sufficiency in food security is in Kyrgyzstan. In Kyrgyzstan's latest revision of the *Law on food security in Kyrgyz Republic* (2008), self-sufficiency does not feature as an explicit part of the food security definition, but is only mentioned in the supporting documents as a means of assessing the level of self-sufficiency rather than as a target to be obtained.¹⁰ The specific policy instrument focus here is more on macroeconomic stability; investments in infrastructure; ensuring a reliable and stable food supply by both producing food domestically and recognizing that imports are necessary for food security and social development; supporting the agricultural sector within a liberal trade environment; finding new markets for agricultural products; and promoting exports (FAO, 2015).

⁸ The Law on state regulation of development of agricultural complex and rural territories states that "food independence is considered insecure if the annual production of vital food products in the state is less than 80% of the annual demand of the population for such types of food in accordance with physiological norms of nutrition" (2005, Article 19-3).

⁹ <https://armenpress.am/eng/news/870152/armenia-takes-measures-to-increase-food-self-sufficiency-level.html>

¹⁰ On monitoring and indicators of food security in Kyrgyz Republic Decree No. 138 from March 3, 2009.

Table 5

Current nutrition related policies in Eurasian countries.

	Name of the policy document (year adopted, or implementation period)
Russian Federation	Development of Healthy Lifestyle for 2017–2025
Kazakhstan	National program for Development of the Health Sector of Kazakhstan “Densaulik” and Action plan for 2016–2019
Kyrgyzstan	Food Security and Nutrition Program and the Action plan for 2015–2017 (currently under revision)
Tajikistan	Nutrition and Physical Activity Strategy (2014)
Uzbekistan	Concept and Strategy on Healthy Nutrition for the Population of Uzbekistan 2015–2020
Armenia	National Strategy for Ensuring Food Security and Nutrition (2018)

Sources: Nutrition Landscape Information System of World Health Organization; Official documents and ECFS Country Studies.

In all countries, a variety of nutrition-related policies and programs have been present since independence. Numerous feeding and fortification programs have been implemented in the Eurasian countries by their governments and the donor community.¹¹ Some programs specifically target macronutrient deficiencies while others, often more recently developed, promote healthy nutrition in order to reduce micronutrient deficiencies and combat health risks caused by over-nutrition. For example, many countries have addressed the issue of iron deficiency, the most common cause of anemia globally,¹² through flour or salt fortification measures.

Table 5 provides a non-exhaustive list of some of the main policies and programs related to nutrition in the Eurasian countries. Most countries have treated nutrition as a separate issue from food security and very few consider nutrition to be an integral part of their food security objectives. That said, some countries are making progress in addressing nutritional problems and combining them with food security goals. Again, there are important differences among the countries. Kyrgyzstan and Armenia have made most progress towards including nutrition as a key element in their food security policy frameworks—at least on a legislative level. In 2015, Kyrgyzstan adopted the *Food Security and Nutrition Program* with an action plan for the 2015–2017¹³ period. The program intended to expand issues of food security to encompass nutrition and move away from the traditional tools for managing these issues in the country (FAO, 2016a). However, with no budgetary support from the Kyrgyz government, most of the planned actions were left unimplemented (Tilekeev, 2018). In 2017, Kyrgyzstan amended the law *On food security* to include the concept of “healthy diet” (FAO, 2017). Armenia’s *National food security concept* from 2011 includes measures to develop public policy to promote healthy nutrition. Food security and nutrition goals are also reinforced by Armenia’s *National strategy of ensuring food security and nutrition* released in January 2018 (Haratunyan, 2018). However, the amount of budgetary expenses allocated towards nutrition is not

¹¹ Nutrition landscape information system of World Health Organization provides information on policies related to nutrition and their implementation periods in each country. <http://apps.who.int/nutrition/landscape/report.aspx?iso=KAZ&rid=1620>

¹² <http://www.who.int/vmnis/indicators/haemoglobin.pdf>

¹³ The food security and nutrition program for 2018–2022 is currently under revision.

clear. Hence, while both countries have explicitly integrated nutrition in their legal texts, the implementation strategy has been weak with limited budgets allocated. Tajikistan has shown some “mixed signals” on this issue. Depending on the policy document, nutrition is considered both separate from, and integral to, food security. On the one hand, the *Nutrition and physical activity strategy* from 2014 addresses nutrition as a separate issue. This document was implemented under the initiative of the WHO in cooperation with three national working groups (inter-sectoral, MoHSPP¹⁴ and the legal sector). It, however, lacks proper implementation due to intra-ministry quarrels and a lack of health staff (Oriol, 2018). The *National development strategy for 2016–2030*, on the other hand, highlights the important link between food security and nutrition. In the three other countries (Russia, Kazakhstan, Uzbekistan) nutritional issues are handled separately from the food security agenda.

In summary, there is significant heterogeneity in the policies used to achieve food security, and in particular in the emphasis on the need for food self-sufficiency and the integration of nutrition into the food security policy paradigm. There are “clusters” of countries with Kazakhstan, the Russian Federation, and Uzbekistan strongly emphasizing food self-sufficiency and ignoring nutrition in their food security policy; while the Kyrgyz Republic and Armenia are on the other side of both policy choices. Tajikistan is “in the middle” on both policy dimensions.

5. Nutrition policy: Global experience

Tackling nutrition and obesity-related health problems is high on the policy agenda for governments worldwide. Some successful examples of implemented nutrition policies include school meal programs and specific policies aimed at reducing the consumption of trans fats and salt.

Consumption of trans fats leads to a number of adverse health outcomes such as increased risk of cardiovascular diseases and some forms of cancers (WHO, n.d.). In 2003, Denmark became the first country to introduce a complete ban on the sale of products containing trans-fats. Later, countries such as Austria, Hungary, Iceland, Norway and Switzerland introduced similar policies making Europe one of the leading regions combatting the sales of trans-fat products. According to WHO, the ban in Denmark resulted in: (1) a significant reduction of trans-fat intake to one tenth of the previous levels across all age groups, (2) compliance to new standards across almost all products in one year, (3) improvement in nutritional profile of foods and use of healthier fats, (4) a significant decrease in mortality from cardiovascular deceases, which may be partly due to lower consumption of trans-fats (WHO, n.d.).

Other important examples of successful implementation of nutrition policy are initiatives to reduce salt consumption, one of the leading causes of major cardiovascular diseases and increased blood pressure. Finland (in the 1970s) and England (2003) were among the first to successfully implement salt reduction policies which resulted in a significant drop in salt consumption among the population (WHO, n.d.). These policies focused on product reformulation, consumer awareness, clear labeling, and monitoring.

¹⁴ Ministry of Health and Social Protection of the Population.

Alarming rates of childhood obesity and overweight compelled policy makers to launch initiatives aimed at creating healthier school environments by restricting sales of certain foods and drinks, setting nutrient standards for food and implementing fruit schemes (WHO, n.d.). Some specific examples include: the School Nutrition Law implemented in Slovenia that sets standards for food and bans vending machines on school property, prohibition of sugar and artificially sweetened drinks in schools in Latvia, provision of free or subsidized fruits and vegetables in schools across different EU countries. Various forms of nutritional awareness programs are implemented in Argentina, Canada and New Zealand.¹⁵ These policies and programs are associated with various positive outcomes such as healthier diets, improved weight outcomes, more physical activity and better nutritional habits beyond school gates among children (WHO, 2018, n.d.).

Overall, global awareness and recognition of nutritional challenges is growing. According to the latest review by the WHO (2018), the number of countries reporting the presence of coordination mechanisms for their national nutrition policies and plans is increasing. Nevertheless, to establish coherent and effective policies to promote healthier diets and nutrition, countries should strive to (a) develop country specific programs and solutions based on scientific evidence (b) put more effort into impact evaluation and monitoring of programs in order to increase the accountability of these projects and policies, (c) set clear financial commitments, operational steps and accountability, (d) implement country specific nutritional programs in concert with others as well as wider developmental goals (WHO, 2018, n.d.; Chen et al., 2013).

6. Conclusion

The Sustainable Development Goals 2030 agenda has brought FNS to the forefront of development challenges. Throughout the Eurasian region, malnutrition remains an important obstacle to development. In this paper we review the evolution of FNS in six Eurasian countries: the Russian Federation, Kazakhstan, Uzbekistan, Armenia, Tajikistan and Kyrgyzstan. Rising incomes since 2000 have substantially reduced poverty and undernourishment and improved food security. Yet, undernourishment remains a problem in the poorer countries of the Caucasus and Central Asia. Diets are also of low quality in many countries, resulting in micronutrient deficiencies. At the same time, as the Eurasian countries become richer and work more sedentary, they are increasingly experiencing another challenge of malnutrition. Overweight and obesity are on the rise while undernourishment is still present in some societies. This region has experienced a number of important income shocks in the last three decades including the transition period in the early 1990s, economic recovery in the early 2000s, increasing food prices and financial crisis in the late 2000s, and more recent events involving sanctions against Russia in 2014. The Eurasian countries discussed in this paper differ in terms of policies used to influence food and nutrition security. Two key differences are identified in their strategies. First, some countries place more emphasis on self-sufficiency to achieve food and nutrition security, while others recognize

¹⁵ For more specific details refer to FAO (2016).

the importance of trade. Secondly, countries differ considerably in how much emphasis they place on nutrition as part of their overall “food security” strategies. Kazakhstan, the Russian Federation, and Uzbekistan strongly emphasize food self-sufficiency and do not include nutrition in their food security policies. Kyrgyzstan and Armenia have moved away from food self-sufficiency as a policy goal to instead embrace trade policies and nutrition targets to achieve FNS. Tajikistan is “in the middle” on both policy dimensions.

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