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Sheep Meat Production Value Chains in the Kyrgyz Republic and Export Capacity to the EAEU Member States

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Abstract

Sheep meat is one of the main products of Kyrgyz agriculture. It is a traditionally valuable local food product with the vast domestic market. The paper explores the trends in developing of the sub-sector of sheep meat during the post-Soviet period with an emphasis on internal production features and policies. The added value chains analysis study collects information from 48 market units – livestock – specialized farmers, market middlemen, and slaughter houses. It helps to understand the limits of production capacity, explores the internal market structure and technological constraints to export potential of sheep meat on external markets of Eurasian Economic Union (EAEU) – Russia and Kazakhstan. The work also adds to the understanding of the current status of the veterinary situation in Kyrgyzstan, as well as technical requirements for export to EAEU. Current problems overview and recommendations for policy makers explain the perspectives of the sheep meat subsector for a next decade.

Key words

agriculture, sheep meat, added value chains, Kyrgyz Republic

JEL codes: Q12, Q13, Q18

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Abbreviations

AVD	Accompanying Veterinary Documents
State Inspectorate	State Inspectorate for Veterinary and Phytosanitary Safety under the Government of the Kyrgyz Republic
EAEU	Eurasian Economic Union
EEC	Eurasian Economic Commission
KIHS	Kyrgyz Integrated Household Survey
PF	Peasant Farm
PSF	Private Subsidiary Farm
SR	Small Ruminants
MoF KR	Ministry of Finance of the Kyrgyz Republic
OIE	Office International des Epizooties (International Epizootic Bureau)
VAT	Value Added Tax
NSC	National Statistical Committee of the Kyrgyz Republic
NSDS	National Sustainable Development Strategy
LLC	Limited Liability Company
SGP	Sheep and Goat Pox
GoKR	Government of the Kyrgyz Republic
PPP	Purchasing Power Parity
FEACN	Foreign Economic Activity Commodity Nomenclature
TR	Technical Regulations
CU	Customs Union

1. INTRODUCTION

This study was conducted by the Institute for Public Policy and Administration (IPPA) of the University of Central Asia (UCA) with the support of the United Nations' Food and Agriculture Organization (FAO).

Sheep farming is a traditional practice and one of the most important branches of agriculture in Kyrgyzstan. The sector employs nearly the entire rural population of the country. Despite its central place in the agricultural sector, however, sheep farming has negligible representation in the country's total exports, or even in the agricultural exports. Over the last 25 years, there has been a gradual reorientation from wool production towards the production of meat in Kyrgyzstan's sheep farming sector. The aim of this study is to analyze the current state of sheep meat production in the Kyrgyz Republic, identify main problems and obstacles to increasing production and exports of sheep meat, and provide recommendations to address these problems. This study does not cover problems related to wool production.

In analyzing the prospects for exports, it is important to take into account the particular features of the markets to which Kyrgyzstan exports its products. After Kyrgyzstan joined the Eurasian Economic Union, the most accessible markets are now Kazakhstan and Russia, though it is not easy to reach these markets due to regulatory requirements outlined in later sections of this study. Analysis of the export potential in this paper is limited to the markets of these two countries with the understanding that it is possible sheep meat could be exported from Kyrgyzstan to other countries as well.

This report is based on official statistics published by the National Statistics Committee (NSC) of the Kyrgyz Republic and other agencies, as well as on the findings of the field survey of value added chains conducted by UCA's IPPA. In the course of the survey, attention was focused on the larger and more commercially-oriented producers with greater capacity to increase production of sheep meat rather than small farmers.

This report is structured as follows: Chapter 2 provides an overview of the sheep sector in Kyrgyzstan, including technology and resources, the state of the internal market and external trade in sheep and sheep meat, and state policy in this area of farming. Chapter 3 contains the findings of the field survey of the value added chains in the major sheep-farming oblasts of Kyrgyzstan. Chapter 4 discusses the veterinary situation in the country, which is severely affecting the prospects for increased production and exports of sheep meat. Chapter 5 provides information on the export markets of Kazakhstan and Russia. Chapter 6 summarizes the main problems of the sector, and Chapter 7 provides recommendations to encourage the production of sheep in the Kyrgyz Republic and its export.

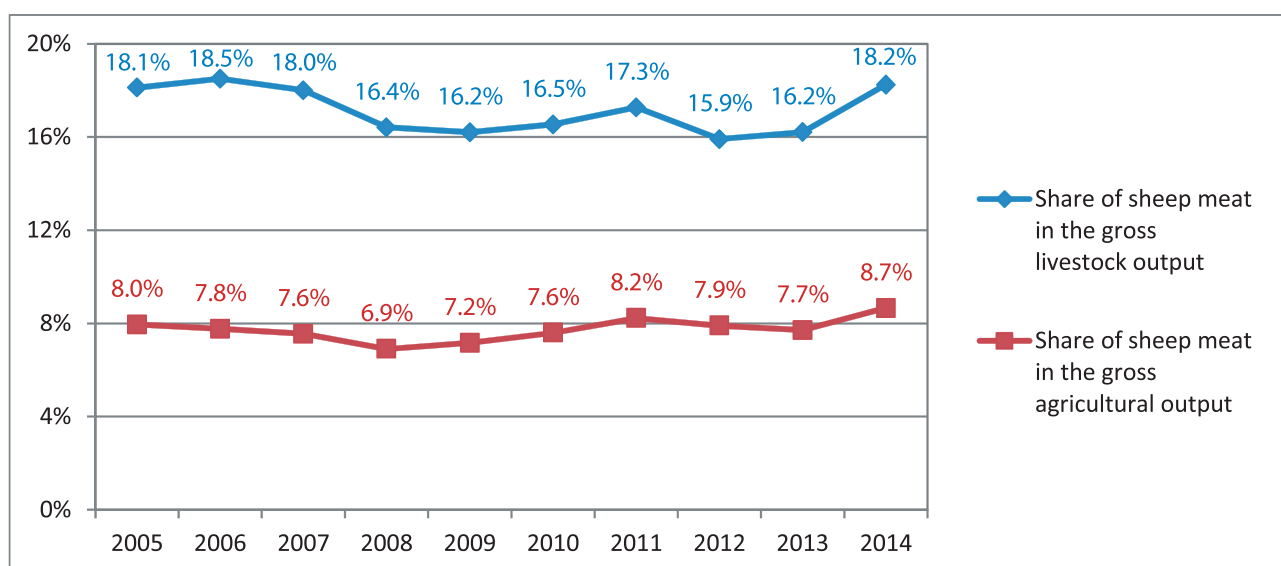
The views and opinions presented in this paper, as well as responsibility for its conclusions and recommendations, are those of the authors and do not necessarily reflect those of the UCA and FAO.

2. OVERVIEW OF THE SHEEP MEAT PRODUCTION SECTOR IN Kyrgyzstan

2.1. General characteristics of the sector

Sheep farming is a traditional sector of the national economy and one of the main branches of agriculture in Kyrgyzstan. It has provided the country with meat and wool for a long time. In Soviet times, sheep farming was focused mostly on the production of wool. In the period following the country's independence, the wool output has declined sharply, and production of sheep meat now dominates the sector. According to our estimates, sheep meat production contributed steadily 16-19% of the gross output of the livestock industry and 7-9% of the gross agricultural output over the last decade (Figure 1).

Figure 1. The Share of Sheep Meat in the Gross Livestock and Agricultural Output in Kyrgyzstan



Source: NSC, author calculations

In 2014, there were 5.8 million sheep and goats, or small ruminants, in Kyrgyzstan (Table 1). The population of small ruminants declined sharply in the 1990's. However, it has been growing steadily since 2006, increasing by an average of 200-250 thousand heads per year. Sheep farming is widespread across all oblasts of Kyrgyzstan, but the largest concentration of sheep is observed in Jalal-Abad, Osh, Naryn and Issyk-Kul oblasts.

Table 1. Stock of Sheep and Goats, at the year-end, thousand heads

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Batken oblast	415,9	422,5	427,1	433,7	441,4	454,2	473,9	468,7	473,5	475,3
Jalal-Abad oblast	641,1	689,4	757,6	858,5	938,4	997,0	1,090,1	1,121,2	1,207,0	1,221,1
Issyk-Kul oblast	587,9	602,5	629,8	655,4	686,6	747,5	771,4	796,4	834,1	876,0
Naryn oblast	662,0	701,2	737,7	774,9	854,9	871,2	916,0	940,2	974,3	990,6
Osh oblast	792,4	808,8	834,7	859,8	912,3	942,0	972,5	1,002,4	1,032,8	1,106,7

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Talas oblast	358,8	369,3	381,6	405,0	427,8	456,8	483,0	498,6	511,0	521,0
Chui oblast	395,4	430,1	459,5	494,4	531,5	546,4	559,3	574,9	587,0	616,7
Bishkek	5,6	5,8	6,2	4,0	5,3	5,1	4,3	3,7	3,6	3,5
Osh	15,2	15,2	15,2	15,1	15,4	15,6	16,0	16,4	16,7	17,5
Kyrgyz Republic	3,874,3	3,622,3	4,249,4	4,500,8	4,813,6	5,035,8	5,286,5	5,422,5	5,640,0	5,828,4

Source: NSC

At present, agriculture is dominated by small and micro enterprises (Table 2); large farms can be literally counted on the fingers of one hand (see the description of the main forms of business ownership in the agriculture of Kyrgyzstan in the Box 1 below). Accordingly, the basic stock of sheep and goats is concentrated in private peasant farms (PFs with 56.3% of the total population) and private subsidiary farms of citizens (PSFs with 43.2% of the population). The share of state and collective farms in the total stock of sheep and goats is only 0.5%. Given the very large number of private peasant farms (around 300 thousand) and rural households (around 700 thousand), the average number of sheep and goats in PFs and PSFs is 11 heads and 3-4 heads, respectively. The livestock is distributed unevenly among farms, with a relative few that have hundreds and even thousands of sheep.

Box 1. Forms of Business Ownership in the Agriculture Sector of Kyrgyzstan

The basic form of business ownership of agricultural production in Kyrgyzstan is a *peasant farm*). According to the Civil Code of the Kyrgyz Republic, this is “an independent economic entity having a legal entity status or carrying out its activities without establishing a legal entity, with its activities being based mainly on the personal labor of members of one family, relatives and other persons coproducing agricultural products based on the land and other property either owned by members of a peasant household on the right of joint ownership or obtained for use (rent).” Typically, such a farm does not establish a legal entity and only includes one household. These farms only pay land tax and are exempt from all other direct and indirect taxes related to economic activities.

Another common form of business ownership in the agriculture is a *sole proprietorship*. A sole proprietor is an individual entitled to entrepreneurial activity without establishing a legal entity. The legislation of the Kyrgyz Republic provides for two forms of doing business as a sole proprietor, or individual entrepreneur: (1) based on a certificate of state registration as an individual entrepreneur: an individual entrepreneur must keep simplified accounting books to reflect income and expenses on an accrual basis; such records are kept in a special book of income and expenses registered mandatorily with the territorial division of the State Tax Service of the Kyrgyz Republic; or

(2) based on a patent: a patent is a document issued by a tax authority to certify a taxpayer’s right to carry out a specific type of activity and pay taxes for this type of activity, as well as to confirm receipt of income during the period covered by such patent. A person who acquires a patent does not keep a special book of their income and expenses for the types of activities specified in a patent during the covered period; nor does (s)he

pay tax on this income or include such income into the aggregate annual revenue when declaring income at year-end, as in the case of an entrepreneur doing business based on a certificate of state registration. Due to the low cost of obtaining a patent and the exceptional ease of doing business on a patent, most entrepreneurs now use this form.

In agriculture, there are also a number of legal entities mostly organized as limited liability companies (LLCs) or cooperatives. Based on their size, farms are divided into small, medium and large enterprises. In the agricultural sector, a small enterprise is a farm with 50 employees or less and a turnover of up to KGS 500 thousand (USD 6.6 thousand) per year. A medium enterprise has 51-200 employees and an annual turnover in the range of KGS 500,000-KGS 2 million (USD \$26,300). A farm with more than 200 employees or annual turnover exceeding KGS 2 million is classified as a large enterprise.

2.2. Production process

Production cycle. Table 2 provides a structure of the sheep meat production cycle. Lambing, or the birth of lambs on a farm, usually takes place in February, when sheep are in the villages. At that time, they feed on winter pastures normally located very close to the village (referred to as village pastures) and get extra fodder, such as hay or grain. In the spring, when the lambs are growing and already capable of feeding on grazing fodder, sheep and goat herds are gradually moved, first to spring and autumn pastures, and then further to the alpine summer pastures, where the basic sheep feeding process takes place. As autumn sets in, herds start moving back. Upon their return to the villages, many sheep are slaughtered before they lose the weight gained during the summer. During the rest of the year, sheep are only slaughtered as necessary, or when there are favorable market conditions (see more details in Section 3).

Table 2. Estimated Annual Sheep meat Production Cycle

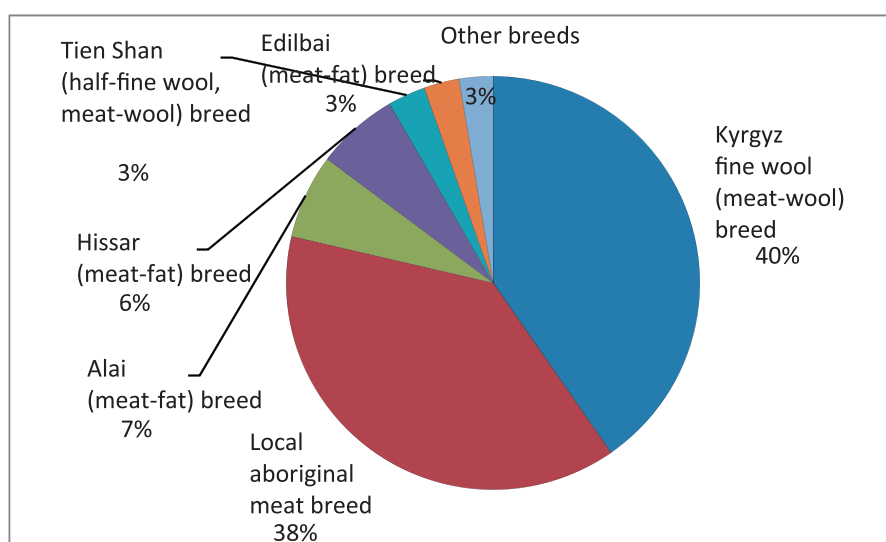
	February	March	April	May	June	July	August	September	October	November	December	January
Reproduction	Lambing							Breeding				
Livestock slaughter	Moderate		Episodic				Intensive			Moderate		
Grazing	Winter		Spring and autumn		Summer		Spring and autumn		Winter			
Additional fodder	Yes		No						Yes			

This is a standard model, and the sheep meat production cycle has its own specific characteristics across different oblasts of Kyrgyzstan and within different categories of farms. In particular, many livestock owners, particular with small flocks, do not move their sheep to distant pastures due to the lack of transport and funds, and because of the disappearance/degradation of the infrastructure (roads, watering places, etc.) on or around these pastures.

Instead they choose to keep their stock in the village pastures year-round, dramatically increasing the pressure on these pastures and contributing to their degradation.

Breeds of sheep. According to 2003 Agricultural Census data, the Kyrgyz fine-wool and local indigenous meat breeds of sheep prevail in Kyrgyzstan (Figure 2). The meat-fat breeds, such as Alai, Hissar, and Edilbai, as well as Tien Shan half-fine wool breeds, are less prevalent. Because of the virtual absence of focused breeding efforts, many of these species are on the brink of extinction (in particular, the meat-fat Aikol, Tien Shan half-fine wool and Alai medium-wool breeds).¹ State-owned breeding plants are responsible for maintaining sheep breeds. Four of them specialize in the breeding of Kyrgyz fine-wool breeds of sheep, and one is focused on the Tien Shan half-fine wool sheep breed. There are a total of 19,480 sheep (less than 0.4% of the total population), and the average wool clip per sheep is 3.74 kg.² However there are no breeding plants engaged primarily in the breeding of ‘meat breeds’ of sheep.

Figure 2. Sheep breed structure



One of the ways in which breed erosion can be measured is in the gradual reduction in the average weight of sheep and goats sold for slaughter, from 42 kg in 2005 to 38 kg in 2014 (Table 3), as well as in the reduction of the population of young sheep per 100 ewes, from 96 heads in 2005 to 93 heads in 2014 (Table 4). Another possible explanation of the weight reduction of sheep may be a gradual deterioration of the food supply (see below).

Table 3. Average Live Weight per Head of Sheep and Goats Sold for Slaughter, kg

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
KR	42	42	42	43	41	38	38	37	37	38
Batken oblast	41	43	40	40	41	39	43	38	38	38

1 Draft National Strategy and Action Plan in the area of Animal Genetic Resources in the Kyrgyz Republic for 2015-2026.

2 Livestock Breeding in Kyrgyzstan (status, problems and ways of improvement) <http://www.agroprod.kg/modules.php?name=Pages&page=56>.

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Jalal-Abad oblast	43	40	41	38	38	29	30	37	27	28
Issyk-Kul oblast	38	37	39	39	36	39	33	37	36	38
Naryn oblast	42	44	43	42	45	36	42	38	41	39
Osh oblast	43	45	45	44	46	43	43	45	45	50
Talas oblast	41	43	41	39	35	34	34	32	31	31
Chui oblast	45	45	46	45	45	45	42	42	42	44
Bishkek	38	39	38	29	39	26	27	32	29	45
Osh	33	32	31	31	32	34	33	33	37	37

Source: NSC

Table 4. Young Stock (Lambs and Goats), Number of Heads per 100 ewes

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
KR	96	96	96	96	95	95	95	92	94	93
Batken oblast	88	89	89	89	89	89	87	85	87	86
Jalal-Abad oblast	96	96	97	97	97	97	96	94	96	92
Issyk-Kul oblast	97	98	98	98	98	98	98	98	98	98
Naryn oblast	98	97	96	95	92	90	91	85	89	89
Osh oblast	92	91	93	92	93	91	92	89	91	89
Talas oblast	101	101	101	101	101	100	100	98	96	98
Chui oblast	100	100	100	100	100	100	100	100	100	100
Bishkek	99	99	99	99	94	99	94	98	98	96
Osh	94	94	94	95	95	78	79	93	94	93

Source: NSC

The fine, half-fine and medium-wool breeds of sheep may be raised for wool and sheep meat in almost all environmental and economic zones of Kyrgyzstan. However, the best results raising the Kyrgyz half-fine wool sheep are observed in the Issyk-Kul basin and the Chui and Talas valleys, which experience a comparatively dry and moderately warm climate, as well as short winter. Alpine areas with higher precipitation levels and many natural pasture forage resources are more suitable for breeding forward meat and half-fine wool breeds of sheep. In the highland areas of the Osh oblast (Alai valley), where environmental conditions are more severe, it is more feasible to raise fat-rumped (broad-tailed) breeds of meat-fat and medium-fine wool sheep, which readily feed on many species of vegetation native to the area.³

Pastures. The development of sheep farming in Kyrgyzstan is largely due to the large tracts of lowland and highland pastures occupying nearly a half of the country. The total area of pasturelands exceeds 9 million hectares (Table 5), of which 45% are summer (alpine) pastures, 32% are spring-autumn pastures, and 23% are winter pastures located near villages or set-

3 M. A. Alkadyrov, Ways to improve the economic efficiency of sheep farming in the Kirghiz SSR, Frunze 1990.

lements. As presented in the table below, summer pastures comprise more than half of the total pasture feedstock, whereas winter pastures account for only 12% of all pasture forage.

Table 5. Pastures in Kyrgyzstan

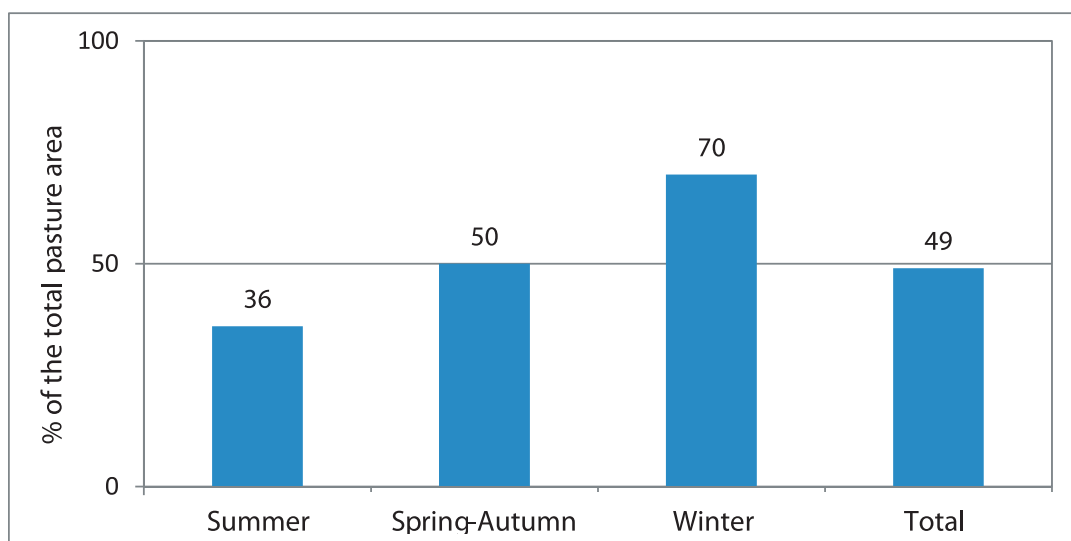
Oblast	Pasture area, thousand hectares				Feedstock, thousand tons (feed units)			
	Total	Spring and autumn	Summer	Winter	Total	Spring and autumn	Summer	Winter
Issyk-Kul	1,350	397	591	362	282	72	163	47
Naryn	2,795	900	1,130	765	376	95	210	71
Chui	859	292	448	119	325	114	189	22
Talas	633	252	205	176	132	42	64	26
Jalal-Abad	1,638	494	852	292	579	177	343	59
Osh	1,283	403	799	81	378	123	244	10
Batken	590	217	104	278	96	56	23	17
Kyrgyzstan	9,148	2,955	4,129	2,073	2,168	679	1,236	253

Source: Draft National Strategy and Action Plan in the area of Animal Genetic Resources in the Kyrgyz Republic for 2015-2026.

In Kyrgyzstan, pasture availability and access differs significantly between oblasts. The largest summer pasturelands are located in Naryn, Jalal-Abad, Osh and Issyk-Kul oblasts. In the densely populated Chui and Osh oblasts, there are relatively few winter pastures, which are overloaded.

Overload of village pastures and underload of summer pastures leads to their degradation. According to the available data (Figure 3), 49% of all rangelands have degraded, and winter pasture degradation is at 70%. According to the findings of a geobotanical survey of pastures conducted by specialists of the *Kyrgyzgiprozem* institute, more than 1.2 million hectares of pastures are shrubby; 1.3 million hectares are covered with poisonous rough-stemmed and badly eaten herbs; nearly 1.4 million hectares are covered with rocks; over 800,000 hectares are both shrubby and rocky; and 400,000 hectares are classified as hard-to-reach pastures (with a slope of more than 45°, heavy shrubs, and remoteness from highways) that are not currently used. A massive infestation is observed in spring-and-autumn and summer pastures, over 200,000 hectares of which are prone to soil erosion. It is apparent that the modern model of pasture management is not sufficiently sustainable.⁴

⁴ Draft Livestock Sector Development Concept of the Kyrgyz Republic for 2014-2023.

Figure 3. Pasture Degradation Degree in the Kyrgyz Republic

Source: KR Pasture Development Program for 2012-2015.

2.3. Sheep meat market in Kyrgyzstan

According to the NSC, sheep meat production has been increasing steadily (Table 6). In the period from 2005 to 2014, the average annual growth rate of production was 2.8%. Sheep meat accounts for 29.3% of the total meat produced in Kyrgyzstan (in carcass weight); 50.1% is beef and 20.6% are other types of meat. The largest output of sheep meat is in the Osh and Chui oblasts.

Table 6. Sheep and Goat Meat Output in Carcass Weight by oblasts, thousand tons

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
KR	46,4	46,5	47,2	47,2	48,8	50,4	50,1	51,1	51,8	59,4
Batken oblast	4,5	4,6	4,5	4,6	4,6	4,5	4,5	4,3	4,3	4,5
Jalal-Abad oblast	7,6	6,8	7,2	6,5	7,2	6,8	6,5	7,8	7,6	9,0
Issyk-Kul oblast	6,4	6,3	6,5	6,9	7,0	7,4	7,6	7,6	7,8	8,6
Naryn oblast	8,7	8,9	8,7	8,6	8,7	8,5	8,8	8,2	8,2	9,3
Osh oblast	9,7	9,8	10,0	10,0	10,3	10,8	10,8	11,5	12,2	12,4
Talas oblast	4,5	4,7	4,5	4,3	4,4	4,3	4,4	4,0	4,0	4,0
Chui oblast	4,8	5,1	5,6	6,1	6,5	7,9	7,2	7,5	7,5	11,4
Bishkek	0,1	0,1	0,1	0,1	0,02	0,1	0,1	0,04	0,04	0,03
Osh	0,1	0,2	0,1	0,1	0,1	0,1	0,2	0,1	0,2	0,2

Source: NSC

According to the Kyrgyz Integrated Household Survey (KIHS) conducted by the NSC, household consumption of sheep meat is slightly more than 3 kg per person per year (Table 7).⁵ This consumption varies greatly by oblast. In the mountainous oblasts of Naryn and Talas, where sheep farming is one of the key sectors of agriculture, sheep consumption is more than four times the national average, whereas in the predominantly crop-oriented oblasts of Batken and Osh sheep meat consumption is several times lower than the national average. While more than half of sheep meat consumption in the sheep-farming oblasts of Naryn and Talas is either produced by households themselves or received as a gift (from relatives), in areas largely specialized in crop farming and cattle breeding, as well as in the cities, most of the meat consumption is sheep meat purchased from third parties. This may indicate that the Kyrgyz domestic market of sheep meat is underdeveloped and insufficiently integrated.

Table 7. Sheep Meat Consumption by Households in 2013

	Total, kg/year per capita	Source, % of the total consumption			
		Purchased	Produced in their own PSF	Received as a gift	Other
KR	3,2	54,2	27,8	17,6	0,4
Batken oblast	0,7	57,7	3,6	38,7	0,0
Jalal-Abad oblast	2,8	84,4	6,7	6,9	2,0
Issyk-Kul oblast	2,5	56,2	23,2	20,6	0,0
Naryn oblast	14,8	45,4	42,1	12,0	0,5
Osh oblast	1,3	80,0	6,8	13,2	0,0
Talas oblast	13,2	45,0	27,6	27,4	0,0
Chui oblast	2,9	67,7	21,6	10,7	0,0
Bishkek	3,0	83,7	0,0	15,6	0,7

Source: NSC data on KIHS in 2013, own calculations

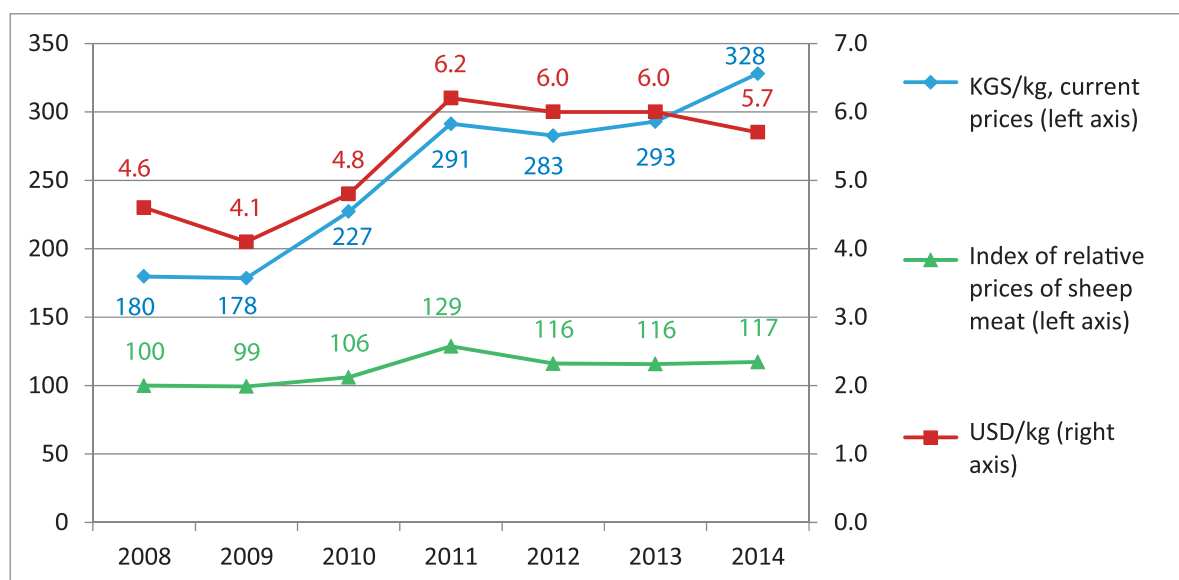
The increase in sheep meat production and consumption over the last decade was accompanied by a rise in sheep meat prices (Figure 4). The average price of a kilogram of sheep meat in 2014 increased 82% from 2008 i.e. this price grew by an average of 10.5% per year in this period. However, this rise in price is mostly linked to general inflation. The relative price of sheep meat, as compared to the basket used to calculate the Consumer Price Index (CPI), has increased 17% over this period, although it remained almost unchanged in 2012-2014. The increase in the relative price may be associated with the rise in demand, which may be attributed to the citizens' improved welfare in Kyrgyzstan: according to the World Bank's clas-

5 It should be noted that the data provided in Table 7 are based on the findings of a household survey, i.e. on the information reported by households themselves. This may include sheep meat consumption at home, but not necessarily fully reflects the consumption of sheep meat in other situations, such as in the public catering system or at weddings, funerals and other major events, in which Kyrgyz households participate quite often.

If we assume that the sheep meat produced in Kyrgyzstan is almost entirely consumed within the country (exports and imports are very small; see Table 8) within the same period when it is produced (because of the lack of industrial refrigeration facilities, the storage capacity of sheep meat is quite limited), the indicators of per capita consumption of sheep meat in Kyrgyzstan may increase 2-3 times.

sification, Kyrgyzstan moved from a classification among the group of low-income countries to the group of middle-income countries in recent years.

Figure 4. The national average retail price of sheep meat (December)



Source: NSC

2.4. Foreign trade of sheep and sheep meat in Kyrgyzstan

Currently, the scale of sheep and sheep meat exports in Kyrgyzstan is insignificant (Table 8). Export of live animals is somewhat more significant than meat exports, but it is episodic in nature and constitutes an extremely small percent of the total population. Main export destinations are neighboring countries (Kazakhstan, Tajikistan, and Uzbekistan) and the countries of the Persian Gulf (Iran, Kuwait, Qatar and the UAE). There is a ban on the export of animals and meat to Russia and Kazakhstan (see Section 5). However, according to market participants (see Section 3), there is an informal export of live sheep to Kazakhstan, though on a small scale; data on exports to this country, as provided in Table 8, may be a partial reflection of this phenomenon. At present, there is virtually no import of sheep and sheep meat to Kyrgyzstan.

Table 8. Export and Import of Sheep and Sheep Meat in Kyrgyzstan

	2011		2012		2013		2014	
	Quantity ⁶	Value, USD thousand	Quantity	Value, USD thousand	Quantity	Value, USD thousand	Quantity	Value, USD thousand
<i>Live sheep and goats (FEACN code 0104)</i>								
Total export	26,2	1,610	14,4	1,191	14,5	1,243	-	-
Iran	1,0	68	-	-	-	-	-	-
Kazakhstan	3,4	371	3,6	438	5,3	643	-	-

6 Thousands of heads of live animals; tons of meat.

	2011		2012		2013		2014	
	Quantity ⁶	Value, USD thousand	Quantity	Value, USD thousand	Quantity	Value, USD thousand	Quantity	Value, USD thousand
Tajikistan	5,5	515	6,5	563	5,1	456	-	-
Uzbekistan	2,1	188	1,5	117	0,8	71	-	-
Qatar, Kuwait, UAE	14,1	468	2,9	74	3,3	73	-	-
Total import	-	-	0,03	3	0,01	1	0,02	1
<i>Sheep or goat meat, fresh, chilled or frozen (FEACN code 0204)</i>								
Total export	105,8	524	7,5	48	4,4	26	0,0	0,2
Iran	95,2	459	-	-	-	-	-	-
Tajikistan	7,2	45	5,5	36	3,0	18	-	-
Uzbekistan	3,4	20	1,9	12	1,2	7	-	-
Qatar, Kuwait	-	-	-	-	0,2	0,4	0,0	0,2
Total import	20,0	21	-	-	-	-	1,0	3

Source: UN Comtrade database

2.5. Public policy

The fact that livestock breeding, including sheep farming, is one of the most important sectors of the economy is reflected in government policy. Considerable attention is given to livestock in *the National Sustainable Development Strategy for 2013-2017*, which stresses the need for the consolidation of livestock into larger farms with at least 500 heads of small ruminants, the importance of creating economic incentives for breeding, and other necessary measures for the industry's development.

There are also sectoral strategies and concepts highlighting problems in the sheep farming sector and proposing ways of addressing them. These include:

- The National Strategy for the Development of Livestock Breeding in the Kyrgyz Republic for 2011-2015 approved by the Resolution of the GoKR No.367 dated 07.05.2011;
- The Pasture Development Program of the Kyrgyz Republic for 2012-2015 approved by the Resolution of the GoKR No.89 dated 02.10.2012;
- Draft Concept of the Fine-Wool Sheep Farming Development in the Kyrgyz Republic for 2015-2020;
- Draft Concept of the Livestock Sector Development in the Kyrgyz Republic for 2014-2023;
- Draft National Strategy and Action Plan in the area of Animal Genetic Resources in the Kyrgyz Republic for 2015-2026.

All of the existing sectoral policy documents contain an analysis of the current problems in the industry: breeding, forage and pastures, infrastructure, the quality and availability of veterinary services and related issues, access to markets, the small size of economic actors and the lack of economy of scale, and institutional constraints. These documents also propose a

wide range of measures to address the existing problems, including the active involvement of public authorities. Unfortunately, none of these policy proposals is adequately resourced, because the state budget does not have even a fraction of the funds required to implement them. Essentially, most of the currently existing problems are associated with the chronic underfunding of those public goods and infrastructure required by the industry. Another important source of problems are institutional challenges, such as pasture management issues targeted by reforms outlined in the Pasture Development Program.

It should be noted that, as of early 2016, there is no effective sectoral document of livestock policy: all of the above strategies, programs and concepts either have not been formally adopted, or their duration has expired.

The meat production and processing development prospects are covered in the Halal Industry Development Concept of the Kyrgyz Republic approved by the Resolution of the Government of the Kyrgyz Republic No.385 dated June 22, 2015. This document outlines the basis for the development of the halal industry in the country and sets goals, objectives and main directions of development, such as the creation of the necessary regulatory environment and infrastructure, the prioritization of the “green economy”, and the need to overcome systemic problems in the area of epidemiology, veterinary, sanitary and phytosanitary systems. This Concept is only the first step towards the further development of the internal structure of the production of halal products with the potential of export of meat, predominantly to Muslim countries.

3. ADDED VALUE CHAINS IN THE PRODUCTION OF SHEEP MEAT

3.1. Methodology of the survey

Qualitative research with elements of quantitative methods was carried out to study the value chains.^{7,8} The study was conducted during November and December 2015. Four oblasts of Kyrgyzstan were selected for the study: Jalal-Abad, Naryn, Issyk-Kul, and Chui. By the end of 2014, 3.7 million heads (71% of all sheep in the country) were concentrated in these oblasts (Table 1). Chui oblast (including Bishkek) was selected not because of the number of sheep, but because it is the main gateway for the movement of livestock between oblasts and the consolidation and processing of sheep before they are moved to slaughterhouses in Bishkek for potential export.

In each oblast (cluster), three groups of market actors were selected as respondents: 1) farmers actively involved in sheep farming; 2) intermediary brokers/buyers; and 3) slaughterhouses. Technically, no official exporters of meat to Kazakhstan and Russia are registered in Kyrgyzstan because of the veterinary situation in the country and the related bans on imports of livestock and meat from Kyrgyzstan initiated by Kazakhstan and Russia. Twelve respondents were interviewed in each oblast (Table 9). Since the situation differed

7 The fully representative quantitative study would require much more time and resources. However, some elements of clustering the sheep meat market players have been applied with a view to cover a wide range of respondents and ensure random selection of respondents in each cluster- oblast.

8 This survey was carried out with the active involvement of M. Omosov, which is deeply appreciated by the authors.

significantly in each of the oblasts, strict criteria were not established to dictate the size of each group within a single oblast.

Table 9. Total Number of Respondents by Oblast and Type

	Oblasts				Total number of respondents
	Naryn	Jalal-Abad	Issyk-Kul	Chui	
Farmer	7	6	6	4	23
Intermediary/buyer	4	4	4	4	16
Slaughterhouse	1	2	2	4	9
Total	12	12	12	12	48

Source: survey findings

The “snowball” method was used to select respondents. In some oblasts, livestock markets were used as a starting point in the search for respondents; surveys among villagers were also used. Most of the respondents (sheep farmers) agreed to participate in the survey, whereas owners of large herds of sheep were evasive and declined to participate in an interview. We managed to interview only one large sheep farmer in Jalal-Abad oblast. In Jalal-Abad, Uzbek owners of slaughterhouses flatly refused to participate in the survey. It is unclear if this was a consequence of the ethnic conflict that occurred in Southern Kyrgyzstan in 2010.

The survey took a little over six weeks. The geographical distribution of respondents is provided in the Annex, wherein towns covered by the survey are highlighted.

3.2. Main findings of the survey

3.2.1. Pastoralists

Livestock farmer profile. Although the study was aimed at farmers we found only one farmer engaged in sheep breeding only. All other respondents indicated that they also worked with cattle and horses. The share of sheep in the total livestock population was, on the average, 56%,⁹ varying from 29% to 100%. Thus, it is fair to say that raising a mix of livestock (sheep, cattle and horses) is the typical approach to livestock farming.

Livestock farmers are primarily men (91%) approximately 40 years of age, with around 12 years of livestock farming experience. All respondents indicated that sheep farming was the hereditary occupation of their fathers. So in addition to making a profit, farmers are motivated to work in the livestock sector as a way of carrying on family traditions. The vast majority of farmers have secondary or vocational secondary education (35% each), whereas 30% have complete or incomplete higher education. Almost all farmers are married with children, and some have grandchildren.

Almost none of the farmers interviewed (with the exception of two respondents) have the status of registered entrepreneurs. Their annual revenues are usually considerably under-

⁹ A livestock unit is one head of cattle; sheep were converted into conventional livestock units: 1 sheep = 1/8 of cattle; horses were converted at a rate of one to one.

reported, which is evident when considering the number of livestock transactions taking place. For their business, farmers use their own working capital, but some indicate the use of credit resources (22%). Three-quarters of livestock farmers are confident in the growth of their business in the short term. In the long term, opinions vary: 43% believe in the growth of their business while the same share of respondents cannot answer this question definitively.

Herd and the production cycle. A sheep farmer has an average of 226 sheep older than one year,¹⁰ 60% of which are ewes. A group of 100 ewes bring an average¹¹ of 85 lambs (67 to 100 heads).¹² This gives farmers an annual crop of 40% of the original stock of sheep at the beginning of the year. In addition to sheep older than one year, 40% of sheep at the beginning of the year (by February) are lambs under the age of one from the previous year's lambing. By the year's end (November/December), virtually all farmers have lambs under the age of one year. The difference in the population of lambs at the beginning and end of the year is more than twofold.

Farmers themselves almost never buy sheep. Farmers actively use adult sheep and lambs for sale (30% of the available stock at the beginning of the year and crop) and consumption (6.7%).¹³ In addition, farmers lose sheep to diseases, theft and unforeseen cases (4.7%). In 2015, the livestock of the surveyed farmers decreased by 12%. According to farmers, the main reasons were high prices on forage and sheep meat at the beginning of the year, both coercing and incentivizing them to sell more sheep than originally planned. At the same time, farmers described 2015 as a more favorable year in terms of livestock feed, resulting in lower sales of sheep in winter.

Both farmers and other market participants in the sheep meat sector experience the concept of "high" and "low" season. The periods and the definitions of these terms vary for different types of market participants, and for farmers from different oblasts. The high season is the period of mass arrival of sheep from the distant mountain pastures (*jailoo*) to stay for the winter; it begins in August and September. The low season is the period from December or January until spring when farmers sell sheep that have fattened already during the autumn-winter period. From spring to autumn, sheep meat consumption declines. It is believed that the taste qualities of sheep are better in the high season. It is also believed that sheep from Naryn and the mountainous part of Jalal-Abad oblast have more valuable flavor characteristics as a result of staying in the mountain pastures in the spring and summer.

During high season, a significant portion of the herd of sheep is made up of both adults (over 1 year), and lambs born earlier in the year (the period of mass lambing falls mostly at February). In the autumn, the livestock is separated into two groups: the sheep that a farmer will keep for the next season, and the sheep that he will try to sell to make a profit and provide for the wintering of the remaining livestock. Farmers keep stud rams and ewes, as well as part

10 In the range of 70 to 1,600 sheep. These values are about 10-12 times as high as the national average.

11 Simple arithmetic mean value is used hereinafter.

12 These data are of the same order as the official statistics for the entire country, but do not coincide with them because of the use of different sources and methods of data collection.

13 It should be noted that consumption refers to the slaughter of sheep, as well as all other types of livestock, at home. This is due to the fact that consumption of sheep has national traditional character, and the skills of livestock slaughtering at home are common in the rural population. It is noteworthy that the slaughter at home is prohibited by the law, as reflected below in the section on veterinary situation.

of the young gelded rams (that are physically stronger) and gimmers (among the lambs up to one year-old), for the winter. Farmers prefer to keep gimmers under the age of one year for breeding.

Farmers try to sell both adult animals and lambs up to one year of age, as long as they are in a good fat condition after the summer season. Farmers usually slaughter adult ewes for such reasons as infertility, weakness, and aging, as well as the bulk of young gelded rams at the age of less than one year. Stronger animals (primarily rams) are put on feed for sale the next spring, when the expected prices on sheep are higher than in the autumn, due to both the costs of fattening sheep for farmers and the gaining of weight. In the spring, sheep are sold mainly to cover current expenses and to provide for sowing.

Farmers prefer to sell adult sheep since their price is higher: on average USD \$68.10 per head.¹⁴ Lambs under one year of age are sold at the price of USD \$40.40 per head. The selling price per head of sheep varies depending on oblast (see Table 10).

Table 10. Price of Sheep Sold by Farmers Across Oblasts

	Price per head of sheep, USD	Price per head of lamb (under 1 year), USD
Naryn	73,8	49,4
Chui	71,8	34,4
Issyk-Kul	72,4	36,3
Jalal-Abad	65,2	39,4
Average price	68,1	40,4

Source: survey findings

Sale prices depend on a number of factors and, above all, on an individual farmer’s need for cash. Other factors, such as availability of feed on the market, are also important. If the volume of feed is large and hay prices are low, farmers prefer to keep more animals until spring. If the volume of feed is small, this is a reason to sell more animals in the fall, until their fat condition after the summer fattening in pastures has deteriorated. Due to hay shortages, it is very difficult to sell sheep in winter when they are thinner. Market prices are thus characterized by high volatility because of the feed situation; it is difficult for farmers to predict the price ratio in the high and low seasons, and their solutions are often not the most efficient. Another reason for price fluctuations is the fluctuations in the domestic demand for sheep meat. During economic downturns, consumers may reduce their consumption of sheep meat. Given that many small producers are not capable of storing or exporting meat, thereby ensuring consistent supply of sheep meat to the market, the fall in demand will inevitably lead to a fall in prices.

Sheep maintenance costs. Veterinary costs are USD \$0.26-4.00 per head of sheep and the average cost is USD \$0.87 per head.¹⁵ Farmers usually vaccinate their livestock twice a year,

14 Hereinafter, cost values are converted into US dollars at the official exchange rate of the Kyrgyz som to the US dollar effective of December 1, 2015: KGS 75.86/USD 1.

15 These values are inconsistent with the costs provided in Section 4. The costs of larger farmers are much higher than those of the surveyed households.

and usually find veterinarians on their own. The farther or more remote the oblast, the more difficult it is for farmers to find veterinarians. Veterinary services are more accessible in Chui and Issyk-Kul oblasts, and less available in Naryn and Jalal-Abad oblasts, located farther from the capital city. Almost all farmers (with only one exception) report no outbreaks of diseases in livestock within their rural municipality (*aiyl aimak*).¹⁶ However, farmers were more willing to speak about the situation in the larger surrounding area (*rayon*), and cited cases of both infectious and non-infectious animal diseases, such as foot-and-mouth disease (FMD), smallpox, pasteurellosis, dyspepsia, echinococcosis, pneumonia, and darters.

Expenditures associated with pastures are divided depending on pasture types: village pastures and remote pastures. However, the situation varies in different oblasts. Farmers in Chui and Issyk-Kul oblasts report expenditures for the village pasture fee¹⁷ (USD \$0.26 per head per year and, in one case, USD \$6.60 per household), while in Naryn and Jalal-Abad oblasts, farmers did not mention such expenditures. In addition to the village pasture fee, farmers also mentioned the costs of shepherd services. On average, grazing on village pastures lasts 6 months per year, and the annual cost of grazing on village pastures is estimated to be USD \$4.46 per head. This is primarily attributed to the cost of shepherd services.

All farmers reported expenditures on livestock grazing in distant pastures. A considerable number of farmers pay the pasture fee collected by pasture committees, of which farmers are often members. Annual pasture fees vary from USD \$0.33 per head in Chui oblast to USD \$0.09 per head in Jalal-Abad oblast. The average term of grazing in distant pastures is 6.5 months. In addition, as in the case of village pastures, major costs are associated with shepherd services, which is USD \$0.26 to \$1.30 per head per month. On average, the annual cost of distant grazing is USD \$3 per head.

Expenditures on feed consist of the costs of purchasing feed grain (47% of farmers), hay (30%) and salt (100%). The total cost is USD \$4.77 per sheep. This amount includes only the sheep of those farmers who indicated that purchasing feed was among their expenditures. None of the farmers mentioned artificial insemination services.

The costs of keeping sheep vary across oblasts (see Table 11). In Chui oblast, the cost of purchased feed is more than 3.5 times as high as the same feed in Naryn oblast. This is because consumers in Bishkek (the large market close to Chui oblast) tend to consume sheep meat more evenly during the year, which necessitates a regular, reliable supply in the winter when livestock requires extra additional fodder. The average cost of keeping a sheep during the year is USD \$13.15.

Table 11. Average costs of farmers per 1 sheep, USD

	Veterinary services	Village grazing	Distant grazing	Grain	Hay	Salt	Total
Naryn oblast	0,26	0,00	1,14	0,74	3,54	0,24	5,92
Chui oblast	1,39	6,08	2,94	5,07	6,34	0,12	21,95
Issyk-Kul oblast	0,80	3,55	4,09	0,83	4,16	0,22	13,65

¹⁶ Rural municipality.

¹⁷ Pasture fee is the fee for access to pastures.

	Veterinary services	Village grazing	Distant grazing	Grain	Hay	Salt	Total
Jalal-Abad oblast	1,10	0,00	3,68	0,34	3,44	0,18	8,75
Average	0,87	4,47	3,04	0,85	3,73	0,20	13,15

Source: survey findings

Channels for sheep sales. Farmers sell sheep on their own through the following channels (simultaneous use of more than one channel is possible):

- In their own village (56% of farmers), i.e. sheep farmer sells sheep to his/her fellow villagers not specializing in sheep farming for subsequent slaughter;
- Intermediaries/resellers (56%);
- In a dedicated livestock market (87%), both to consumers and intermediaries/resellers.

When selling to an intermediary, a farmer knows little about the ultimate destination of the livestock he sells. In most cases, a farmer thinks that a reseller sells sheep somewhere in Kyrgyzstan (61%), within the oblast (18%), in the nearest town (7%), or outside of Kyrgyzstan (7%). In individual cases, farmers believe that their livestock is sold somewhere in their own village (4%) or to a slaughterhouse (4%). In most cases (52%), farmers are not interested in the final destination of their livestock.

When purchasing sheep, buyers assess the quality of the product based on visual inspection of an animal. Most consumers (83%) ask sellers to produce papers on livestock.

Figure 5. Searching for sales channels by farmers



The majority of farmers find the price of sheep low (53%); at the same time, many farmers (35%) believe that the price depends on external factors beyond their control.

Meanwhile, 44% of respondents report they have never tried to seek better terms for the sale of their products (see Figure 5).

The sale of sheep is based on verbal agreements. None of the farmers mentioned the existence of any written contract for the sale of livestock; all payments are made in cash.

In response to a question about cooperation in the sale of sheep, no farmer was able to give specific examples. The only example of any cooperation between farmers cited by livestock producers was the exchange of rams in order to upgrade the breed. Typically, the exchange is based on a visual examination of the rams.

The way in which sheep are bought and sold is somewhat different in the Issyk-Kul oblast. In this oblast, most sales take place in the summer, due to the influx of tourists into Issyk-Kul Lake resorts. During this period, there is virtually no sheep meat from other oblasts in the market, because a large quantity of livestock is in remote outruns. This allows for the sale of large quantities of Issyk-Kul sheep in the summer.¹⁸ From autumn onward, there are no significant sales in the oblast until the spring. In the spring, major sales are made through resellers to Bishkek and Chui oblast.

A considerable share of farmers delivers sheep to market on their own by hired transport. The trade is lucrative primarily in the high season; during other periods, farmers sell sheep to resellers as the need arises. Between 5 and 10 sheep is the minimum lot for sale, and farmers consider 10-20 sheep the best lot. Selling a larger lot is considered a wholesale transaction that implies a discounted price on the whole lot. Big sales are typical of the high season. To increase sales, farmers also try to provide sheep for the customers of nearby restaurants, cafés, and hotels. However, sale in the markets and to dealers/resellers is the major method by which farmers sell sheep. Two large farmers with herds of livestock numbering 400 and 1,600 sheep reported sales outlets that included a hotel, café, and a shop. This was an exception, however.

3.2.2. Intermediary buyers

Profiles of intermediary brokers. As is the case with sheep breeding, the sale and purchase of sheep mostly involves men. The average age of an entrepreneur working as an intermediary buyer is 40 years old. In most cases (73%), he is a sole business owner. Most respondents have been engaged in this business for more than 10 years. Previous experience reported by the entrepreneurs is broad, and ranges from household activities, private business ownership, and employment in the private sector and/or work abroad. The share of people with higher or incomplete higher education among entrepreneurs is higher than that among farmers: 47%; the remaining 53% have secondary general or vocational secondary education. Almost all are married with children. Unlike farmers, they identified profit as the main reason for engaging in the business.

Two-thirds of dealers do not have any official business registration. Few registered entrepreneurs prefer to work on a patent basis. All entrepreneurs indicate trade in sheep as the main type of their business. Nearly a third of all entrepreneurs also indicate trade in other livestock, such as cattle and horses, as well as the fattening of all kinds of cattle.

18 It should be noted that neither intermediaries/resellers, no slaughterhouses had ever reported availability of refrigeration equipment, so they are not capable of creating a stock of meat in the autumn or spring for the sale during the summer.

Most entrepreneurs work alone or with a partner. Only one entrepreneur mentioned hiring more than three workers. As is the case of farmers, the income declared by entrepreneurs is low. Slightly more than a half of intermediaries work with their own capital only; in some cases (one-third of all respondents) their own capital is supported by credit and investors' funds. Few respondents (13%) only do business with borrowed funds. Most entrepreneurs (73%) are confident about the short term prospects of their businesses. In the longer term, they are divided into optimists, who are confident in the growth of their business (53%), and those who stated they were "at a loss to answer" (40%).

All intermediaries have the necessary basic infrastructure for keeping, feeding, and grouping livestock. These include facilities for keeping animals, barns and warehouses for storing the forage. Almost all of these facilities are located on their own subsidiary plots. The size of these facilities ranges from 10 m² to 1000m², with an average area of 155 m².

Transport is another important resource: 26% of entrepreneurs do not have their own vehicles. Others have at least one (54%) or two (20%) vehicles. Slightly more than a half of the vehicles are cars; the rest are trucks.

Seasonality and profitability of business. By the start of the high season, sheep already gain marketable weight in the pastures, and farmers start to sell them. Prices during the high season are lower because livestock is mostly grazing on grass. The high season lasts until the end of December. The low season lasts from January until the summer.¹⁹ Intermediaries sometimes buy livestock during the high season and keep and feed the animals on their own in order to sell them at a higher price during the low season. According to intermediaries,²⁰ their margin during the high season ranged between 5 and 20%, averaging at about 10%. During the low season, the margin fluctuates at or around 10-15%. However, some entrepreneurs indicate that in the case of fattening, their margin increases to 50% due to the increased costs of keeping the livestock. Employers also bear the costs of transporting and keeping sheep until the sale. Given the availability of purchase and sale prices, we are able to calculate the profitability of business at different times throughout the year. The results are provided in Table 12.

Table 12. Key Performance Indicators of Intermediary Buyers in the Sheep Trade²¹

	Average	Naryn oblast	Chui oblast	Issyk-Kul oblast	Jalal-Abad oblast
Sheep sales during high season, heads per week	52	52	25	32	91
Sheep sales during low season, heads per week	19	18	9	18	28

19 The terms of the "high" and "low" seasons, as understood by farmers and intermediaries/buyers, are a little bit different.

20 Margin refers to the difference between the price of sale to a final consumer and the price of purchase from a farmer.

21 Purchase prices indicated by intermediaries are not always consistent with the sales prices indicated by farmers, because intermediaries deal with a wider range of farmers: both large and small suppliers not covered by this survey.

	Average	Naryn oblast	Chui oblast	Issyk-Kul oblast	Jalal-Abad oblast
Purchase price during high season, USD	76,5	68,4	75,8	87,3	74,1
Selling price during high season, USD	87,7	77,4	93,4	99,7	81,7
Purchase price during low ²² season, USD	104,4	91,5	103,3	107,1	115,3
Selling price during low season, USD	118,0	105,5	116,4	116,2	133,5
Transportation costs per sheep, USD	1,2	1,8	1,8	0,6	0,7
Other maintenance costs per sheep, USD	1,5	2,3	2,6	0,6	0,5
Net margin per sheep during high season, USD	8,6	5,0	13,1	11,2	6,4
Net margin per sheep during low season, USD	11,0	9,9	8,7	7,8	16,9
Average net income per week during high season, USD	448,3	258,4	327,9	356,9	580,6
Average net income per week during low season, USD	209,0	178,6	78,5	141,3	473,9
Average rate of return per week during high season, %	10%	6%	14%	11%	8%
Average rate of return per week during low season, %	9%	9%	7%	7%	13%

Source: survey findings, author calculations

As is the case for farmers, the season for intermediaries working in the Issyk-Kul oblast is driven by the demand for sheep at the summer tourist market. Therefore, the price is also higher, and was found to be even higher than in the Chui oblast.

Transportation costs vary by oblasts, with the lowest rate found in Jalal-Abad oblast. This is because the average size of a lot of sheep purchased in Jalal-Abad is significantly larger than in other oblasts. As a result, resellers enjoy an economy of scale in the cost of transportation. Other livestock maintenance costs mostly come from the cost of feed. These costs are primarily determined by the length of time that resellers hold the sheep and by prices of purchased feed, primarily hay.

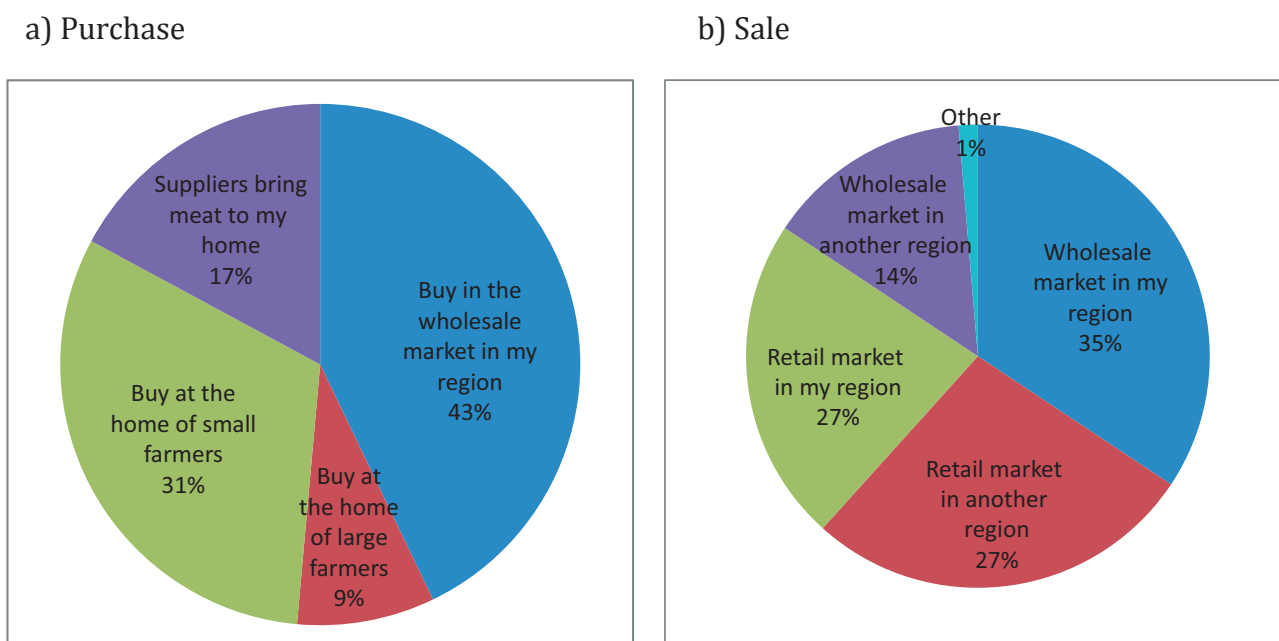
The highest profitability in procurement is observed in the mountainous parts of Jalal-Abad oblast during the low season, and the least profitability is observed in Naryn oblast during the high season. This may be due to greater competition in the purchase of sheep in Naryn.

22 Entrepreneurs indicated prices of the purchase and sale of sheep during the “low” season in prices as of the beginning of 2015. Due to the large amount of feed and decline in consumer activity, dealers expect lower prices starting from January 2016.

Channels for sheep purchase and sale. The main venue for intermediaries purchasing sheep is a wholesale livestock market (see Figure 6a). In addition, buyers purchase sheep at the homes of their regular customers, large (9%) and small scale (31%) sheep farmers. Some pastoralists bring their sheep to the gate of a buyer’s property.

When selling livestock, intermediaries aim for sales in their oblast (see Figure 6b), in the wholesale (35%) and retail (23%) markets. When selling to a different oblast, sales are made primarily in the retail market (27%), whereas a relatively small share of sheep (14%) is sold in the wholesale market of other oblasts.

Figure 6. Channels of purchase and sale of sheep from intermediaries



Source: findings of the survey, own calculations

The sale price of sheep depends on the season (see above). In addition, the price is affected by overall market prices. Intermediaries try to maintain a certain level of profitability; they have only a few means by which to influence prices in this market.

When buying sheep, buyers pay attention to the fatness (live market quality) and appearance of sheep, as well as the price and compliance with sanitary standards of hygiene.

According to intermediaries, the volume of sales is mainly affected by season, commercial qualities of the livestock, location and the characteristics and location of the channels through which intermediaries are selling sheep. The taste preferences of consumers (fairly standard across Kyrgyzstan) and intensity of advertising by suppliers are of lesser importance.

Intermediaries mainly sell sheep for cash. They may sell on credit, however, when dealing with regular customers, either retail or wholesale, and may sell live sheep and/or sheep meat. In sales of meat to cafés, restaurants, hotels and shops, the sheep are primarily slaughtered in slaughterhouses. It is quite easy to obtain the required documents for meat, either from a veterinary department or from law enforcement agencies; these documents are issued upon request, and the process of obtaining them almost never involves the actual examination of

the meat or the conditions of live animals prior to slaughter. It should be noted that when asked, resellers/intermediaries express little understanding of the kind of examination involved, given the absence of veterinary laboratory equipment and controls when crossing the borders of a particular oblast.

Attempts to export sheep meat to Kazakhstan were made by many intermediaries a few years ago, even before the accession of this country to the Customs Union of Belarus, Kazakhstan, and Russia. Currently, sellers complain about the lack of access to the Kazakh market. It is reported that meat and livestock are still reaching Kazakhstan, but are supplied by resellers/agents from the Kazakh side. Kyrgyz buyers do not have sufficient ties within the country that would be necessary to illegally traffic livestock across the border, and, more importantly, they cannot arrange for an adequately large scale of supply with particular regularity. It is also known that trafficking of this kind typically concerns horses and cattle. Illegal trafficking of sheep is virtually unheard of.

3.2.3. Slaughterhouses

Like other participants of this market, managers/owners of slaughterhouses are mostly middle-aged men. Unlike farmers and intermediaries, sole owners and co-owners or hired managers may run slaughterhouses. In two-thirds of the cases, the average experience of a manager in this kind of business is three to five years. In almost half of the cases, this group reported previous job experience in the private sector employment or experience as a business owner. The other half of cases reported previous experience in a diversity of areas, including academic study, housekeeping, migrant labor and public service. Compared to sheep farmers and intermediaries, more slaughterhouse managers have higher (44%) and vocational secondary (44%) education. All were married and almost all have children. Their main motivations for working in the business are making profit and realizing personal potential.

In one-third of cases, business is informal. Only a third of respondents indicated sheep slaughtering and fattening as the main form of their activities. The other slaughterhouses are engaged in the slaughter of cattle and horses. In two-thirds of cases, delivery of dressed meat to customers is one of the main activities of slaughterhouses. Almost all slaughterhouses have between three and ten employees. Respondents reported no changes in the number of personnel in the last year. Almost all shops operate solely with their own financial resources; only one representative of a slaughterhouse mentioned the use of credit. More than half of slaughterhouse managers are confident in the near term growth of their businesses. The long term outlook appears uncertain for more than a half of respondents.

Slaughterhouses need a whole range of specific infrastructure facilities: livestock keeping facilities, a slaughtering line, a main building, sewage treatment plants,²³ as well as ancillary facilities, including garages and parking areas. Most slaughterhouses report having basic equipment, including a passenger vehicle, grinding equipment and scales. However none of the surveyed slaughterhouses had refrigeration facilities, which forces them to supply their meat immediately after slaughtering the animals. The equipment available imposes technological constraints on the production process: two-thirds of slaughterhouses are capable of slaughtering up to twenty sheep per shift, and one-third slaughters up to fifty sheep per

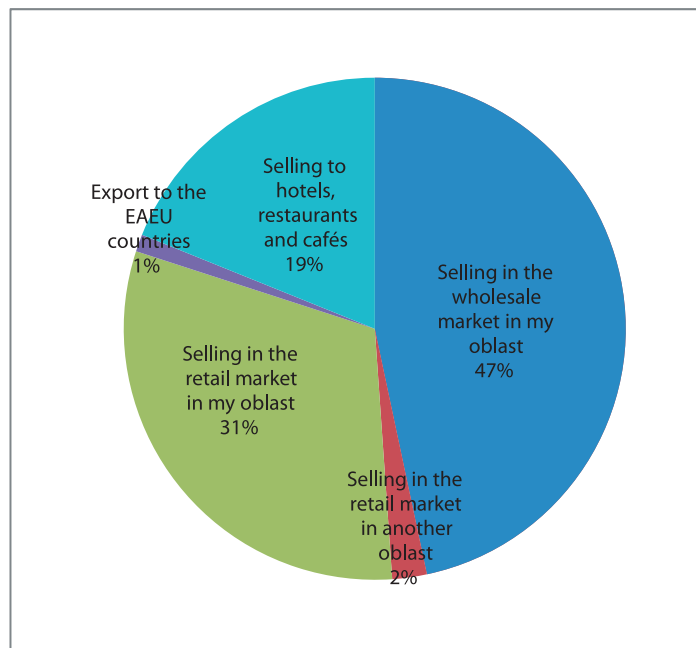
23 In 44% of cases, a slaughterhouse uses more than one drain, and in one case it has nine sewage wells.

shift. Two-thirds of slaughterhouses also report the capacity to slaughter cattle, though the capacity is also low: 22% of slaughterhouses are capable of slaughtering up to three cows per day; one-third slaughters four to ten cows per day; and only one slaughterhouse reported the capacity to slaughter more than twenty heads of cattle per day.

Slaughterhouse managers speak in the same terms of high and low season as mentioned above. Nearly 60 sheep are slaughtered during the high season; in the low season, the slaughtering capacity is less by an order of magnitude. An average live weight of a sheep is around 40 kg; the output of meat in the carcass is 60% of live weight. The purchase price is USD \$71.40 during the high season, and USD \$96 during the low season. The gross margin is 10% in the low season, whereas in the “high” season it rises to 12%.

Wholesale markets within the same oblast are the main sources supplying sheep. They are followed by small farmers and small-scale suppliers/intermediaries.

Figure 7. Market outlets of slaughterhouses



For slaughterhouses, the predominant venue for meat sales is the wholesale market within the home oblast of intermediaries/buyers (see Figure 7.). The second most important area is sales in the retail market in the same oblast. The third most common area is the sale to the hospitality sector, including to hotels, restaurants, and cafés. Sales in the retail market in other oblasts, as well as export sales, are far less common. Only one slaughterhouse reported that their regular customers from Kazakhstan bought meat and transported it across the border, and noted that the documentation support provided is the same as for the domestic market. The other slaughterhouses failed to establish linkages to exporting sheep meat to the EAEU markets.

Key product requirements are reported to be as follows: meat quality; compliance with sanitary and hygiene standards; product delivery to customers; and price. The price is considered fair by 55% of respondents. The same number of respondents believes that the price is determined by external factors. At the same time, 44% of slaughterhouses believe the price

is low. Two-thirds of respondents sell sheep to their customers on credit at the same price as in the case of immediate payment.

In addition to slaughtering sheep, some slaughterhouses are also engaged in the fattening of sheep. Their margin in the case of fattening for a period of two months or less is up to 50%. In this context, slaughterhouses serve the same role as intermediary dealers. Many shops operate as slaughtering service centers and do not procure sheep at a meaningful scale. This allows them to maintain a certain margin with less financial resources required.

4. Veterinary situation

4.1. Regulatory framework

Table 13 summarizes the basic laws and regulations governing veterinary activities in the Kyrgyz Republic. The following is a summary of the main provisions of the legislation related to meat production in the country, as well as some comments on the actual implementation of these provisions.

Table 13. Laws and Regulations on the Veterinary System in the Kyrgyz Republic

Laws and regulations	Brief description
KR Law No.175 “On veterinary medicine” dated 12.30.2014	The veterinary system of the Kyrgyz Republic, outlines standards of competence of veterinary authorities, anti-epizootic measures, veterinary state supervision, and funding of veterinary agencies.
Regulation on the State Inspectorate for Veterinary and Phytosanitary Safety under the Government, approved by Decree of the Government of the Kyrgyz Republic No.256 dated 05.07.2013	Describes the goals, objectives, and functions of the State Inspectorate, and the administration of activities by the State Inspectorate.
Priority veterinary and sanitary requirements for the prevention of animal diseases, approved by Decree of the Government of the Kyrgyz Republic No.377 dated 06.18.2015	Approves the veterinary and sanitary requirements for the places of keeping, selling and slaughtering of livestock; livestock transportation requirements; and veterinary and sanitary protection requirements within the territories of the Kyrgyz Republic.
Law of the Kyrgyz Republic No.88 “Technical Regulations: Food Production Hygiene” dated 06.01.2013	Sets requirements for the hygiene of the production, processing, and storage of food raw materials and products, as well as for the technological processes and organization of production.
Law of the Kyrgyz Republic No.86 “Technical Regulation: Labeling of Food Products” dated 05.30.2013	Sets the marking requirements for meat and meat products.
Law of the Kyrgyz Republic No.91 “On Identification of Animals” dated 06.06.2013	Sets the rules for the identification of livestock to ensure their reliable accounting, veterinary control and compliance of businesses / sole proprietors with the established veterinary, sanitary and zoohygienic requirements.

Laws and regulations	Brief description
Technical Regulations of the Customs Union (CU) No.034/2013 “On the Safety of Meat and Meat Products” adopted by resolution of the Council of the Eurasian Economic Commission No.68 dated October 9, 2013; effective from 05.01.2014	Sets the meat and meat products safety requirements to be mandatorily implemented in the CU territory.
Technical Regulations of the Customs Union (CU) No.021/2011 “On Food Safety” adopted by resolution of the Council of the Eurasian Economic Commission No.880 of 12.09.2011	Sets the requirements for the processes of production (manufacturing), storage, transportation, sale and disposal of food products, including meat and meat products

Source: Toktom database of legal information, <http://toktom.kg/>

The Law “On Veterinary Medicine” identifies organizational, legal, social, financial and economic frameworks of animal health protection in the Kyrgyz Republic. This law aims to ensure the epizootic wellbeing, veterinary and sanitary safety, and protection of animals and the public from diseases common in humans and animals. According to Article 4 of the Law, the veterinary system consists of five components: 1) the Government of the Kyrgyz Republic; 2) the authorized state body for animal health; 3) local state administrations and local self-governing authorities; 4) statutory authority (Veterinary Chamber);²⁴ and 5) persons engaged in private entrepreneurial activities to provide veterinary services. The Government of the Kyrgyz Republic is responsible for approving and improving the regulatory framework in the area of animal health, the formulation and implementation of the public policy, and international cooperation in the area of animal health. The authorized state body²⁵ for animal health is in charge of drafting technical regulations (TR), including rules and requirements for animal health. The body is also responsible for developing and implementing preventive and diagnostic programs and organizing and providing veterinary measures for the prevention, diagnosis and elimination of extremely dangerous animal diseases. This includes administering protective measures to prevent the importation and spread of contagious animal diseases, as well as implementing public policy in the area of animal health and food safety. The authorized state body for animal health also follows up on the implementation of preventive anti-epizootic measures. Local authorities and local state administrations are responsible for ensuring compliance with the veterinary and sanitary requirements and anti-epizootic measures, the extermination of the diseased animals, and the adequate maintenance of burial sites of deceased animals. Despite the multi-layered veterinary system of the Kyrgyz Republic, no specific agency is identified under the law as responsible for the development of policy in the area of animal health.

In order to ensure the protection of human and animal health, the law imposes liability on animal owners. According to Article 8 of the Law “On Veterinary Medicine”, animal owners are required to comply with the veterinary and sanitary requirements, including complying with the standards, technology and veterinary rules for animal slaughtering. This includes preventing the slaughter of animals in private backyards for the purpose of selling meat and

24 Veterinary Chamber of the Kyrgyz Republic, <http://www.vet-palata.kg/index.php/ru/>

25 According to the Law “On Veterinary Medicine”, state veterinary supervision is a function of the state veterinary authority, whereas the State Inspectorate for Veterinary and Phytosanitary Safety is a public authority responsible for control and supervision in the area of veterinary and phytosanitary safety. However, in their inspection report, the EAEU experts point to the uncertainty with regard to a competent public authority in the area of animal health.

meat products in markets, ensuring the availability of accompanying veterinary documents (AVD), and disposing of the carcasses of animals who died from contagious diseases. Individuals engaged in the production, processing, transportation and sale of meat products are responsible for the veterinary and sanitary safety of all livestock products and raw materials. However, in the course of inspecting businesses in Kyrgyzstan interested in supplying animal products to the EAEU, the team of EAEU veterinary experts found non-compliance both by companies and authorities with the stated legal requirements regarding animal health. Most businesses accepted carcasses of animals slaughtered in private backyards with incomplete accompanying veterinary documents for further processing. Local inspection bodies did not conduct formal inspections of businesses to identify violations.²⁶

According to this law, all animal and plant products are subject to mandatory veterinary and sanitary examination in accredited veterinary laboratories to determine the safety of their use. Products recognized as partially fit are disinfected and processed, whereas products that fail the examination should be disposed of completely.²⁷ As of the 1st of November 2015, a total of 28 accredited laboratories in the Kyrgyz Republic and 5 facilities of certification were included in the Unified Register of the EAEU. The Kyrgyz Accreditation Center reports about 10 accredited testing laboratories and 3 accredited certification bodies included in the Unified Register of the EAEU re carrying out the assessment of food products, including meat, for compliance with the requirements of the CU technical regulations.²⁸ According to the State Inspectorate for Veterinary and Phytosanitary Safety (State Inspectorate), the Bishkek laboratory has recently received food safety accreditation. In addition, the Department of Virology, Chemical Toxicology, and Veterinary and Sanitary Examination of the National Center for Veterinary Diagnosis and Expertise received accreditation and started operations in accordance with international standards. Bishkek City Inspectorate for veterinary and phytosanitary safety reported more than 33,000 examinations of meat products over a period of nine months in 2015. This resulted in 1,658 kg of beef and 2,180 kg of sheep meat failing the examination.²⁹ The meat was confiscated and disposed of by shredding and burying in bleach powder.

The veterinary and sanitary protection of the territory of the Kyrgyz Republic is organized at border crossing points and customs terminals. Regulated goods cross the border upon authorization by the Chief Veterinary Officer of the Kyrgyz Republic after a compulsory veterinary inspection. In 2015, in connection with the accession of the Kyrgyz Republic to the Customs Union, seven veterinary checkpoints at the external borders of the EAEU were equipped with this inspection capability.

26 Final report on inspection by EAEU experts of enterprises involved in the production of animal products in the Kyrgyz Republic, Moscow, 2015; Final report of the mission of experts of veterinary services from the CU member states to Kyrgyzstan, 2014.

27 According to a draft TR “On the safety of meat and meat products”, the partially fit meat is a product of processing of slaughtered animals that is permitted to be used for food purposes upon disinfection with the use of thermal and (or) cold treatment methods, or salting in accordance with the established requirements.

28 Kyrgyz Accreditation Center, the Register of certification bodies included into the unified register of the EAEU, <http://www.kca.gov.kg/%D0%A0%D0%B5%D0%B5%D1%81%D1%82%D1%80%D1%8B/os-ts.html>; Register of Testing Laboratories included into the unified register of the EAEU, <http://www.kca.gov.kg/%D0%A0%D0%B5%D0%B5%D1%81%D1%82%D1%80%D1%8B/il-ts.html>

29 In view of the sale of 50-60 thousand tons of SR meat (see Table 7), these values are very small.

State veterinary supervision is exercised by the authorized state body for animal health, as well as its subordinate and territorial divisions. Veterinary supervision covers the production, storage, transportation, processing and marketing of livestock products and raw materials, medicines, food supplements and products that are subject to veterinary surveillance. The State Inspectorate for Veterinary and Phytosanitary Safety under the Government of the Kyrgyz Republic (State Inspectorate) is the body responsible for state supervision and regulation of the sector. The State Inspectorate also controls, supports and implements policy in the sector. The State Inspectorate monitors compliance by legal entities and individuals with the TR, oversees the organization of veterinary and sanitary examinations of animal and vegetable products during production and trade, exercises supervision to prevent importation of infectious diseases into the territory of the Kyrgyz Republic and issues accompanying veterinary and phytosanitary documents (AVD) for the export, import, and inspection at temporary storage warehouses. The State Inspectorate also participates in the liquidation of mass poisonings, and implements public policy in the area of veterinary and phytosanitary security. The Public Council, in turn, monitors activities of the State Inspectorate.

The Statutory Body (Veterinary Chamber) exercises supervision and control over private veterinarians and their adherence to professional ethics. For example, upon suspicion or outbreak of infectious diseases, private veterinarians are expected to inform the authorized state body for animal health.

The law establishes the civil, administrative and criminal responsibility of animal owners for violations of the rules of maintenance and exploitation of animals, the evasion of preventive measures, and the violation of legislative requirements in the area of veterinary medicine. The law also provides for civil, administrative and criminal liability for violations of veterinary and sanitary requirements in the production, processing, storage, and sale of animals and animal and plant raw materials.

Relevant international rules and veterinary requirements, established by international treaties and agreements and ratified by the Kyrgyz Republic, are also in effect. The Kyrgyz Republic has been a member of the World Organization for Animal Health since 1992, and thus the Veterinary Service of the Kyrgyz Republic is guided by recommendations of the Terrestrial Animal Health Code of the International Epizootic Bureau. The supervisory activities and control of the veterinary service are in accordance with the veterinary rules and requirements approved by the Intergovernmental Council for Cooperation in the area of animal health for the CIS countries.

The Law “**On Identification of Animals**” was adopted for the planning and implementation of anti-epizootic and preventive measures and maintaining a reliable accounting of animals, livestock, and their movement within the country. This law prohibits the sale and slaughter of unidentified animals. Farms keeping animals for commercial purposes are subject to mandatory registration, and the animals are subject to identification within the terms established under the law. As written, the law is to go into effect for sheep and goats on November 1, 2016.³⁰ The authorized state body for animal health and local authorities are to arrange for the identification and registration of livestock in the Unified State Register. The cattle and

30 There is a very high probability that the identification system not only for SR, but also for the cattle and horses, that were expected to start functioning on 04.01.2014 and 04.01.2015, respectively, will not be ready by this date.

livestock with breeding values are assigned unique identification numbers, whereas SR, pigs, and poultry are assigned group identification numbers. Livestock registration should be conducted in the following order: registration of farms, identification of livestock, accounting of livestock on the farms, information about movement and slaughter in the Unified State Register of identified animals, registration and issuance of documents.

In order to protect animal health and promote veterinary and sanitary well being in the sector, the Government of the Kyrgyz Republic issued resolution No.377 “**On Approval of the Priority Animal Health Requirements for Animal Disease Prevention**” dated June 18, 2015. This resolution establishes requirements for the organization, design, construction and operation of enterprises that involve keeping animals. For example, a sewage system must be provided in places used to keep animals in order to dispose of industrial wastewater. Each farm must be separated from the nearest residential area by a sanitary protection zone.

This resolution also contains provisions and requirements for livestock markets and slaughterhouses, designated places where animals can be sold and slaughtered. Cattle-slaughtering units should have three main areas: a pre-slaughter treatment area for the acceptance and veterinary examination of livestock before slaughter; a major production area used for the slaughter of livestock, cutting of carcasses, and processing by-products; and the area of auxiliary facilities, including office buildings, maintenance outbuildings, a bulk feed storehouse, sewage facilities, et al. Disinfectant baths or mats soaked in disinfectant solution must be placed at the entrance of the workshops. Livestock markets should be located on the outskirts of rural and urban areas, and must be separated from the populated areas and catering facilities with a sanitary protection zone of at least 200 meters. The resolution provides for the following veterinary and sanitary facilities in the territory of livestock markets: a dispensary with a room for veterinary staff, a pharmacy and a room with a crate, a warehouse for the storage of disinfectants, and an isolation ward for the accommodation of patients or those who are suspected of having a contagious animal disease. Veterinary checks are conducted in the market, including examination of the vehicles delivering livestock and checking the availability and accuracy of the accompanying veterinary documents (AVD). Animals are not allowed to enter the market without AVD. Veterinary specialists of the market inspect livestock, give their opinion on an animal’s fitness to be brought to market, and oversee the market’s sanitary conditions. According to the draft Regulation of the Government of the Kyrgyz Republic “On Approval of the Rules of the Organization of Slaughter of Livestock for Further Sale” dated 2014, there are 87 slaughterhouses in the country, 38 slaughter sites and five slaughtering and meat processing plants. According to the State Inspectorate, there are three officially registered livestock slaughter units in Bishkek. Veterinary and sanitary experts are assigned to these slaughter units to register AVD, carry out an antemortem inspection of animals, mark meat and by-products, and issue corresponding documents.

Immediate veterinary and sanitary requirements ensure the protection of public health in the Kyrgyz Republic by imposing a ban on the importation of products and goods failing to meet veterinary and sanitary safety requirements. Goods subject to the state veterinary supervision may only be imported into the territory of the Kyrgyz Republic with the express written permission of the authorized state body for animal health. The transit of animals subject to state veterinary supervision through the territory of the Kyrgyz Republic is only allowed in the presence of a veterinary certificate. Importing goods that pose a threat of outbreak and/or spread of contagious and non-contagious diseases of animals is not permitted.

After the slaughter, subject to the confirmation of its safety, meat is to be sold in the market or processed. The Law on “**TR: Food Production Hygiene**” establishes the hygienic requirements for buildings, premises, water supply, sanitation, transportation, storage of raw meat, and technological processes, as well as hygiene requirements for personnel. The law establishes liability for accepting raw materials without supporting documentation that meets the legislative requirements. Raw food materials must meet the physical, chemical, sanitary and microbiological, parasitological and radiological safety indicators in accordance with the Kyrgyz law.

A schedule to the Law on “**TR: Labeling of Food Products**” contains information on the labeling requirements for meat and meat products which are effective until the Technical Regulation “On the Safety of Meat and Meat products” can be fully enacted. Meat in half-carcasses, carcasses and quarters is marked with an imprint of an oval stamp in accordance with the veterinary meat marking requirements (Regulation on the veterinary marking of meat approved by the Intergovernmental Council for Cooperation of the CIS member states in the area of animal health, 10.22.1998, Tashkent). Meat not coming in carcasses, halves and quarters must have a label with the product name, expiration date, net weight, manufacturer’s address, storage conditions and shelf life, as well as information on its conformity with regulations.

Following the accession of the Kyrgyz Republic to the Customs Union, the CU TR “Safety of Meat and Meat Products” becomes effective in the Kyrgyz Republic to establish requirements and microbiological indicators of meat safety, as well as other technical regulations.

Transitional provisions linked to Kyrgyzstan’s accession to the Eurasian Economic Union. By joining the EAEU, the Kyrgyz Republic has committed to accept the provisions of the EAEU in the area of veterinary and phytosanitary control. According to the Resolution of the Government of the Kyrgyz Republic No. 260 “On the Authorized State Bodies for the Exercise of State Control (supervision) Over Compliance with the Technical Regulations of the Customs Union” dated April 27, 2015, the State Inspectorate and the Disease Prevention and State Sanitary and Epidemiological Surveillance Department of the Ministry of Health of the Kyrgyz Republic are the competent authorities in the area of safety of meat products. The State Inspectorate exercises control over meat safety in terms of epizootic health. However, technical regulations of the EAEU will be introduced gradually. According to the **Protocol on Transitional Provisions and Conditions of Application by the Kyrgyz Republic of the EAEU Treaty dated May 29, 2014**, the technical regulation of the EAEU becomes applicable upon the expiration of a specific transitional period; for the CU TR 021/2011 “Food Safety”, CU TR 022/2011 “Labeling of Food Products” and CU TR 034/2013 “Safety of Meat and Meat Products” this transitional period is 24 months following the implementation of the Agreement. Therefore, the transition period ends on 12 August 2017. During this period, the statutory provisions of the laws of the Kyrgyz Republic continue to apply to the items subject to technical regulation referred to in the CU TR. The veterinary control inspection system of the Kyrgyz Republic will be recognized as equivalent to the corresponding system of veterinary supervision established by the EAEU member states upon an assessment of the veterinary inspection of the Kyrgyz Republic and after obtaining positive results from EAEU member states.

For meat and meat products from Kyrgyzstan to be supplied to EAEU countries, export goods need to meet the existing health requirements. The sanitary measures include mandatory

requirements and procedures, including a product's processing, production, transportation, storage and disposal methods, sampling procedures, inspection methods, risk assessment, business registration rules, and labeling and packaging requirements, designed to ensure product safety.

Sanitary measures apply to individuals, vehicles, and products that are subject to sanitary and epidemiological surveillance, as designated by their inclusion on the unified list of products subject to the state sanitary and epidemiological surveillance. The uniform sanitary, epidemiological, and hygienic requirements and procedures approved by the resolution of the Customs Union Commission No.299 of May 28, 2010, apply in practice. Requirements include the uniform list of items subject to supervision, including meat and meat products.³¹ In addition, there are uniform sanitary and epidemiological and hygienic requirements established for those goods that are subject to sanitary and epidemiological oversight.³² They establish the requirements for safety and nutritional value of foods, including:

- Labeling requirements,
- A list of antibiotics that may be contained in meat,
- Indicators of the maximum permissible concentrations of harmful substances (lead, arsenic, cadmium, mercury, antibiotics, pesticides and dioxins),
- Microbiological indicators, including:
 - o The maximum quantity of mesophilic aerobic and facultative (optional) anaerobic microorganisms (QMA&OAMO);
 - o Permissible number of coliform bacteria (CGB);
 - o Other microorganisms, including pathogens (e.g. *Salmonella*) and gram-positive rod-shaped bacteria (*L.monocytogenes*);
- Permitted levels of cesium-137 and strontium-90 radionuclides;
- Maximum permitted levels of residues of antimicrobial drugs in the meat;
- Maximum permitted levels of residues antiprotozoal agents in the meat.

Common provisions and documents on the order of state sanitary and epidemiological surveillance of persons and vehicles crossing the customs border of the Customs Union were developed in order to exercise control over regulated goods moved across the customs border and the customs territory.³³ The sanitary control over the goods crossing of EAEU's internal borders includes:

- Control of the documents confirming the safety of goods and their compliance with the accompanying documents;
- Visual examination, sampling the goods subject to the sanitary control.

31 The uniform list of goods subject to sanitary and epidemiologic supervision (control) at the customs border and in the customs territory of the Customs Union, approved by the resolution of the Customs Union Commission No.299 of May 28, 2010.

32 As amended by resolutions of the Customs Union's Commission No.341 dated 08.17.2010; No.456 dated 11.18.2010; No.571 dated 03.02.2011; No.622 dated 04.07.2011; No.829 dated 10.18.2011; No.889 dated 12.09.2011; and resolutions of the Eurasian Economic Commission No.34 dated 04.19.2012; No.208 dated 11.06.2012; No.6 dated 01.15.2013.

33 Annexes 3 and 4 are approved by the resolution of the Customs Union Commission No.299 of May 28, 2010.

Monitoring is carried out through the sanitary and quarantine stations established on the main cargo transportation routes.³⁴ A manufacturer bringing goods to the territory of the EAEU needs to register the company and the product(s) it wants to bring to the EAEU territory. Authorized bodies of veterinary control from the Republic of Kazakhstan and the Russian Federation must complete this registration, as the Kyrgyz Republic’s State Veterinary Inspectorate is not yet recognized as a fully authorized body for other EAEU member countries until the transitional period ends. Enterprises should undergo inspection, upon which they may be included in the register of companies allowed to export food products to the territory of the EAEU.

As of February 8, 2016, 15 enterprises received permission to export their food products to Russia, of which only one enterprise, *Riha* LLC, obtained the right to export meat products that have undergone thermal processing (sausages).³⁵ Other companies may export dairy products (heat-treated) and fish. Since the end of 2014, 12 dairy enterprises have become eligible to export their products to the southern part of Kazakhstan.

4.2. Epizootic situation in the Kyrgyz Republic

According to the International Epizootic Bureau (*Office International des Epizooties* (OIE)), the following infectious diseases were encountered in the Kyrgyz Republic from 2012 to 2014: brucellosis, echinococcosis, rabies, sheep and goat pox, foot-and-mouth disease, anthrax, echinococcosis and covering disease. Table 14 summarizes the number of outbreaks of animal diseases over the period of 2012 to 2015 based on reports provided by the competent animal health authorities to the International Epizootic Bureau. Table 15 provides information on the vaccination of sheep.

Table 14. Number of Outbreaks of Animal Diseases in the Kyrgyz Republic

Disease	2012	2013	2014	6 months of 2015
FMD	5		1	
Sheep and goat pox	2	10		1
Anthrax	1	1		1
Rabies	95	58	43	42
Brucellosis (<i>Brucella Abortus</i>)	2,338	1,662		
Brucellosis (<i>Brucella Melitensis</i>)	198	39	3	2
Covering disease (<i>Trypanosoma equiperdum</i>)	348	77		18

Source: Office International des Epizooties

³⁴ List of border crossing points at the Customs Union border exercising sanitary and quarantine, veterinary and phytosanitary control: <http://www.eurasiancommission.org/ru/act/texnreg/depsanmer/regulation/Pages/perechen.aspx>.

³⁵ <http://ru.sputnik.kg/economy/20160210/1022281915.html>.

Table 15. Vaccination of Sheep Against Particularly Dangerous Diseases, dosages used

Disease	2010	2011	2012	2013	2014
FMD	1,340,740	1,153,100	57,000	158,200	17,100
Sheep and goat pox	0	2,275,671	4,578,000	7,718,800	6,097,500
Anthrax	3,521,410	3,343,000	3,396,700	5,254,300	2,703,500
Rabies	22,800	14,100	58,700	137,100	60,900
Brucellosis	2,523,617	5,446,200	3,093,200	2,124,000	2,957,800

Source: Office International des Epizooties

Foot-and-mouth disease. The total number of FMD outbreaks in all kinds of livestock declined from five cases in 2012 to zero cases in 2013. However, Kyrgyzstan experienced re-emergence of FMD in 2014 (immediate notification on 26/08/2014, reported in cattle) after an absence of outbreaks since the second semester 2013. No new outbreaks of FMD for all types of livestock were registered afterwards. According to the OIE provision, Kyrgyzstan should be free from any disease, including FMD, for at least 2 years after the last outbreak to be considered safe from disease. As for FMD in sheep, there was one outbreak of type A FMD in Jalal-Abad oblast in 2012, when 1156 sheep and goats were susceptible and one animal was infected. In response to the outbreak, 2565 animals were vaccinated. In subsequent years, there were no FMD outbreaks in sheep.

Kyrgyzstan participates in West Eurasia FMD Progressive Control Pathway Roadmap. West Eurasia FMD Roadmap is a regional cooperation among Eurasian countries for the progressive control of FMD leading towards freedom of clinical disease by 2025 for regional economic development, food security, and poverty alleviation. There are 14 countries members of the West Eurasia FMD Roadmap, namely Afghanistan, Armenia, Azerbaijan, Georgia, Iran, Iraq, Kazakhstan, Kyrgyzstan, Pakistan, Syria, Tajikistan, Turkey, Turkmenistan and Uzbekistan. The country was assessed by Global Framework for the progressive control of Transboundary Animal Diseases (GF-TAD) experts in April 2015 and remains in provisional Stage 2 (in total 6 stages: from 0 to 5) and has to submit their national risk-based strategic plan to the GF-TADs FMD Working Group, otherwise they will revert back to Stage 1.

Anthrax. According to the Center for Quarantine and Highly Infectious Diseases of the Disease Prevention and State Sanitary and Epidemiological Surveillance Department, there were 1,241 anthrax hotbeds in Kyrgyzstan as of 2014, of which 549 were localized foci of anthrax, 462 sites were protected, and 525 foci were concrete-enveloped. Special markings were installed at 482 sites; 690 foci of anthrax were not found. The areas of anthrax foci are disinfected twice a year. In 2013, 1.2 million head of cattle, 3.3 million small ruminants (61% of the total livestock population of 5.4 million heads), 225.5 thousand horses, and 33.2 thousand pigs were vaccinated against anthrax.³⁶ No case of anthrax in small ruminants has been registered since 2012. One case of anthrax in cattle was reported in 2012, 2013 and 2015, respectively. However, the number of anthrax cases in the human population has increased since 2012. According to the Disease Prevention and State Sanitary and Epidemiological Surveillance Department, there were six cases of anthrax in 2012, 16 cases in 2013, five cases in

36 http://www.vb.kg/doc/263648_v_kyrgyzstane_naschitali_1_239_ochagov_sibirskoy_iazvy.html.

2014, and 19 cases over the first ten months of 2015. According to the OIE, nearly 2.7 million doses of vaccine were used in 2014.

Rabies. In 2012, a total of 97 cases of rabies were registered, including six cases of rabies in sheep. In the following years, the number of cases of rabies in sheep decreased to two in 2013 and one in 2014 (of a total of 87 and 61 cases of rabies in animals). However, seven cases of rabies in sheep have been registered over the first six months of 2015. Over the period of 2012 through 2015, one case of rabies in humans was registered each year.

Echinococcosis. Echinococcosis is an extremely dangerous animal disease in the Kyrgyz Republic that also poses a threat to humans in the case of infection transmitted from a sick animal. Growth in the incidence of echinococcosis was observed in 2013-2014; the number of cases increased by 12.5% in 2014 and reached 1,181 cases, as compared to 1,050 cases in 2013.³⁷ The highest incidences were observed in the cities of Osh (97) and Bishkek (74.5), 4.7 and 3.6 times as high as the national average, respectively. The reported incidence of echinococcosis over the first nine months of 2015 is 6.7% less than the incidence reported over the same period of 2014.

Brucellosis. As can be seen from Table 15, there is a downward trend in the incidence of brucellosis. As of October 2015, 1.8 million sheep were vaccinated with REV-1, as recommended by the OIE. Sheep and goats at the age of three months or older are subject to a one-time vaccination from which animals develop immunity to brucellosis.

Sheep and goat pox. 2,008.1 thousand small ruminants (36% of the total population) were vaccinated against sheep and goat pox over the first five months of 2014. Vaccination against sheep and goat pox (SGP) is only done in those oblasts where incidences of infection in sheep have been reported in previous years. The number of outbreaks and cases of sheep and goat pox has decreased significantly.

It should be noted that one of the problems with vaccination is the lack of accurate data on real quantities of sheep. Farmers often try to underreport their stock out of fear of increased taxation or intensified attention or penalties from public authorities. This creates a situation where there is a shortage of prepared vaccines to cover the whole livestock population. Incomplete vaccination in animal populations greatly reduces the effectiveness of efforts to eradicate dangerous animal diseases.

4.3. Veterinary control situation

The implementation of veterinary control functions and functions in the area of agriculture in general and livestock farming specifically faces budgetary challenges. The national budget is only capable of allocating limited funds (Table 16). The Medium Term Budget Framework prepared by the Ministry of Finance of the Kyrgyz Republic for 2016-2018 allocates up to KGS 400 million per year for the veterinary and phytosanitary safety sector, i.e. the amount allocated is even less than was actually spent in 2014.

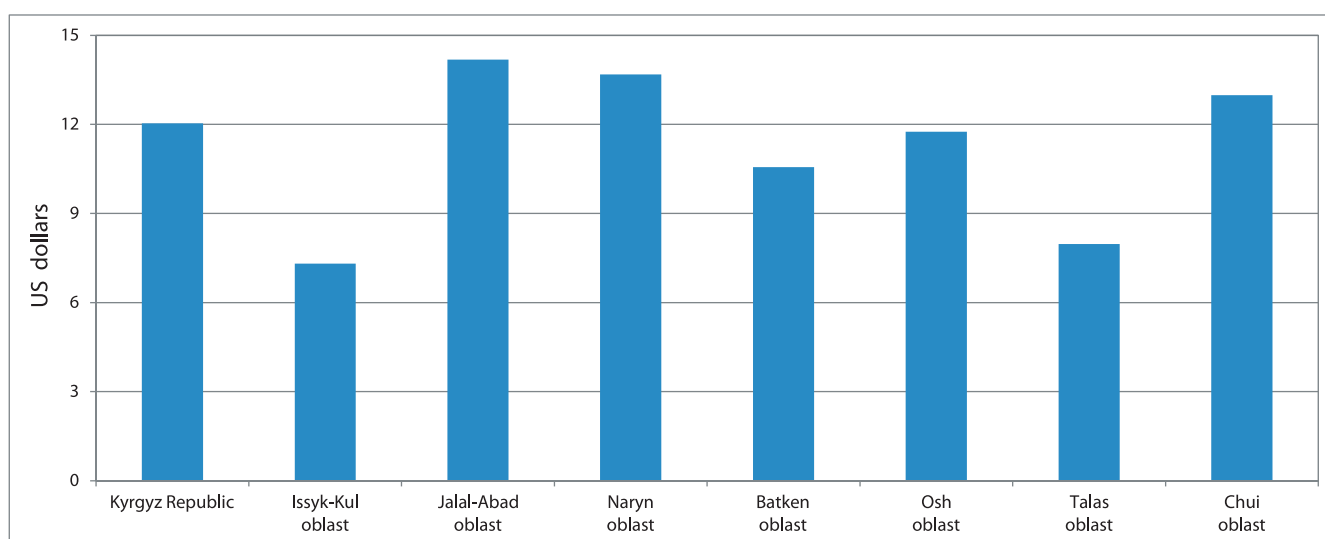
37 <http://www.dgsen.kg/podrazdel.php?podrazdel=226>.

Table 16. National Budget Expenditures for the State Inspectorate for Veterinary and Phytosanitary Safety by the Government of the Kyrgyz Republic

	2013	2014
KGS million	275,7	407,6
USD million	5,7	7,6
Share in the total operating expenses of the national budget, %	0,36	0,48

Sources: MoF KR, author calculations

Strategic plans exist to control the extremely dangerous animal diseases outlined in the preceding section. State veterinary agencies, as well as diagnostic, prophylactic and anti-epizootic measures, are funded from the national and local budgets. Immuno-biological drugs for preventive vaccination against dangerous diseases are financed from the national budget; in other cases, funding comes from outside sources, including from donor funds or the livestock owner individually.

Figure 8. Household Veterinarian Expenditures

Source: NSC data on KIHS 2013, author calculations

At the farm level, livestock owners bear the costs of veterinary care for their livestock. According to the findings of the household survey, livestock owners spend on the average roughly KGS 600 (USD \$12) per year for all animals in the household, including cattle, small ruminants, horses, etc. (see Figure 8). This value is clearly quite small considering the size of the existing livestock population.

Given its chronic underfunding, it is no wonder that the system of veterinary and sanitary control performs unsatisfactorily. This is evident in the results of inspections conducted by veterinary experts of the CU member countries of meat and dairy enterprises in the Kyrgyz Republic, in preparation for the accession of Kyrgyzstan to the EAEU. In February 2015, specialists from *Rosselkhoznadzor* (Russian Federal Service for Veterinary and Phytosanitary Surveillance), representatives of the authorized bodies of Armenia, Belarus, and Kazakhstan, and members of the Eurasian Economic Commission inspected eight enterprises in the Kyr-

gyz Republic involved in the production of animal products. The specialists evaluated the businesses on their compliance with the established veterinary and sanitary requirements and EAEU rules, and assessed the overall performance of the country's veterinary and sanitary control system. Previously, in 2014, a mission of specialists from veterinary services of Kazakhstan and other CU member states undertook a similar mission to assess the possibility of including five meat-processing plants of the Kyrgyz Republic into the CU's Uniform Register. The following violations were identified during these inspections:

- Provision of inaccurate and/or incomplete information on local epizootic welfare: the relevant authority does not submit information about the registration of diseases on a full scale or in a timely manner to the OIE; inability to validate some information about the epizootic situation.
- No system of animal identification. Inspectors confirmed that the movement of animals was unregulated and animals could be subject to emergency compulsory slaughter without diagnosis and subsequent laboratory confirmation.
- The absence of a document regulating the compulsory registration procedure.
- Failure to comply with the national legislation: violation of the veterinary and sanitary examination procedure; the slaughter of animals in private backyards without accompanying veterinary and sanitary documents, including the specification of owners, marking, or veterinary and sanitary examination information and accompanying analyses.
- Absence of the CU provisions and requirements at enterprises. Incompetence of staff.
- Absence of the production control system at meat-processing plants.
- Purely formal nature of inspections conducted by the state supervision authority.
- Inadequate physical infrastructure at laboratories and temporary storage warehouses; poor state of laboratories; lack of equipment for the administration of all necessary tests.
- Use of expired diagnostic kits, chemical reagents, and nutrient solutions.
- Failure to meet requirements established by the national regulations for the veterinary marking of meat.
- An inability to ascertain the safety of raw materials; the systems of identifying and monitoring raw materials are not functional.
- A lack of production control programs found in multiple enterprises; there is no system of marking finished products; violations of the labeling of finished products occur across all enterprises.
- No disposal of biological waste; there is no documentary evidence of waste collection and further disposal; there is no documentary evidence of the use of biothermal Becker pits and diagnoses, the basis upon which animals are sent for disposal.
- Temperature standards and conditions of storage of finished meat products are violated.
- Laboratories fail to test animal food products for safety indicators based on the presence of toxic elements, pesticide residues, and microbiological parameters.
- Lack of a monitoring and verification system for positive results with the use of different methods and involvement of other laboratories.
- Biosafety requirements are not fully met; a number of tests are absent.
- The presence of meat-processing plants working with raw meat supplied by foreign companies barred from supplying meat to the EAEU.

- AVD paperwork prone to violations, that fails to meet the requirements established by the Regulations on procedures for issuing accompanying veterinary documents to cargoes subject to veterinary supervision in CIS member-states.
- Merely formal role of temporary storage warehouses; the absence of conditions for inspection and sampling.
- The use of expired nutritional supplements in the production of finished and semi-finished meat products.

Based on the findings of inspections, at the time of verification veterinary experts from the CU member states considered it impossible to include enterprises involved in the production and processing of meat products into the Register of organizations and individuals engaged in the production, processing and storage of regulated goods imported into the customs territory of the EAEU.

The new Director of Veterinary and Phytosanitary inspectorate of Kyrgyzstan has requested FAO assistance in development of a five-year strategic plan for the department, which will be an important step for the Government of Kyrgyzstan and must be within international standards. The objective is to align Kyrgyzstan's standards with those of the OIE PVS (OIE Performance of Veterinary Services), FAO, WTO-SPS (The WTO Agreement on the Application of Sanitary and Phytosanitary Measures), and a modern European country's management of veterinary services whilst maintaining differences in oblast culture and public services. The approach is participative and project based through assessment of the current situations and engagement of all stakeholders. The development and completion of a five-year strategic plan is expected by the end of June 2016.

5. POTENTIAL TARGET EXPORT MARKETS: KAZAKHSTAN AND RUSSIA

Kazakhstan and Russia are among the largest trade partners of the Kyrgyz Republic and represent natural market destinations for the potential export of sheep meat from Kyrgyzstan. Tables 17 and 18 provide data on production, consumption, export and import of sheep meat in the two countries.

Table 17. Production and Consumption of Sheep and Goat Meat in Kazakhstan and Russia

	2010	2011	2012	2013	2014
Kazakhstan					
Output, thousand tons	142,9	149,5	153,8	156,4	161,9
Consumption, kg per capita	6,5	7,6	6,6	6,9	6,7
Russia					
Output, thousand tons	184,6	189,0	190,4	190,0	203,9
Consumption, kg per capita	0,9	1,0	1,0	1,2	1,5

Sources: Statistical Office of Kazakhstan and Russia

Table 18. Exports and Imports of Sheep and Sheep Meat in Kazakhstan and Russia

	2013		2014	
	Quantity ³⁸	Value, USD thousand	Quantity	Value, USD thousand
Kazakhstan				
<i>Live sheep and goats (FEACN code 0104)</i>				
Total export	1,2	92,5	4,8	469,5
Russia	1,2	92,5	4,4	437,5
Other countries	-	-	0,3	32,0
Total import	0,05	4,7	0,5	51,9
Australia	-	-	0,5	51,9
Other countries	0,05	4,7	-	-
<i>Sheep or goat meat fresh, chilled or frozen (FEACN code 0204)</i>				
Total export	18,5	231,0	24,8	116,0
Russia	18,5	231,0	13,8	56,1
Other countries	-	-	11,0	59,9
Total import	757,2	1 035,7	287,2	417,0
Australia	676,2	759,1	249,0	249,0
Other countries	80,9	276,7	38,3	168,1
Russia				
<i>Live sheep and goats (FEACN code 0104)</i>				
Total export	5,1	547,7	76,4	2,062,1
Azerbaijan	3,4	124,7	76,1	1,982,3
Turkey	1,4	364,0	-	-
Other countries	0,3	59,1	0,3	70,7
Total import	0,6	565,1	0,7	563,6
France	0,3	229,3	0,3	298,5
Other countries	0,3	335,9	0,4	265,2
<i>Sheep or goat meat fresh, chilled or frozen (FEACN code 0204)</i>				
Total export	21,1	277,8	43,5	500,8
Belarus	10,4	119,0	34,9	362,7
Kazakhstan	10,5	157,3	8,5	137,1
Other countries	0,2	1,5	0,1	0,9
Total import	10,060,7	56,787,2	9,757,0	62,792,8
Australia	5,591,0	26,678,2	5,036,4	28,099,0
New Zealand	3,002,8	23,360,0	2,571,3	25,628,9
Other countries	1,466,9	6,748,9	2,149,3	9,064,9

Source: UN Comtrade database

³⁸ Thousands of heads of live animals; tons of meat.

Sheep meat is one of the main types of meat produced in Kazakhstan and consumed by its population. Sheep meat production in Kazakhstan is about three times as high as in Kyrgyzstan, i.e. Kazakhstan produces approximately the same volume of sheep meat on a per-capita basis.³⁹ At the same time, the per capita rate of sheep meat consumption is more than two times as high as in Kyrgyzstan, which could be explained by higher living standards in Kazakhstan.⁴⁰ Another possible explanation for such a large difference in the level of consumption may be a difference in the methodology used for calculating the volume of domestic consumption in these two countries (see Footnote 5). High demand for sheep meat is almost entirely met by domestic production in Kazakhstan, as both imports and exports of sheep meat in Kazakhstan are negligible. However, due to the geographical and cultural proximity of the two countries, Kyrgyz producers of sheep meat could find their place in this capacious market if sheep meat from Kyrgyzstan were competitive in terms of price and quality, and specifically if the product could meet the existing veterinary and sanitary requirements in Kazakhstan.

Unlike in Kazakhstan, in Russia sheep meat is a niche kind of meat consumed in much lesser volumes than beef, pork and poultry meat. Indicators of per capita sheep meat consumption in Russia are several times lower than in Kazakhstan and Kyrgyzstan. However, because of the large population of Russia, its domestic sheep meat market is even more capacious than the market in Kazakhstan. In addition, because of a large number of Central Asian migrants in Russia and increasing numbers of those populations (residents of the North Caucasus, and others), in which sheep meat consumption is a significant share of diet, the sheep meat market in Russia has significant prospects for growth. Data in Table 17 also confirm this: over the period from 2010 through 2014, sheep meat production increased by more than 10%, whereas its per capita consumption increased more than 60%. All of this is also favorable to Kyrgyzstan's export potential, with the same reservations regarding quality and price as mentioned with regard to Kazakhstan.

Sheep meat is imported to Russia in significant quantities, although its import is only around 5% of domestic production. Sheep meat is imported mainly from two countries: Australia and New Zealand. Since Australia is under the Russian food embargo, this niche was vacated in 2015 and is now filled by other importers.⁴¹ In theory, this creates additional opportunities for exports of sheep meat from Kyrgyzstan, but in practice, Australian sheep meat belongs to the premium segment of the market in terms of price and quality, and could hardly be substituted by the export potential from Kyrgyzstan.

Since the price competitiveness of Kyrgyz sheep meat could serve as a decisive factor in determining the economic feasibility of sheep meat exports to Kazakhstan and Russia, it is interesting to compare retail prices in major cities of Kazakhstan, the European part of Russia and Siberia, with the prevailing prices in Bishkek (Figure 9). Here we have remarkable dynamics. In 2013-2014, prices in Bishkek were much lower than in the potential export mar-

39 As of 01.01.2016, the population of Kazakhstan was 17.7 million people, and the population of Kyrgyzstan was 6.0 million.

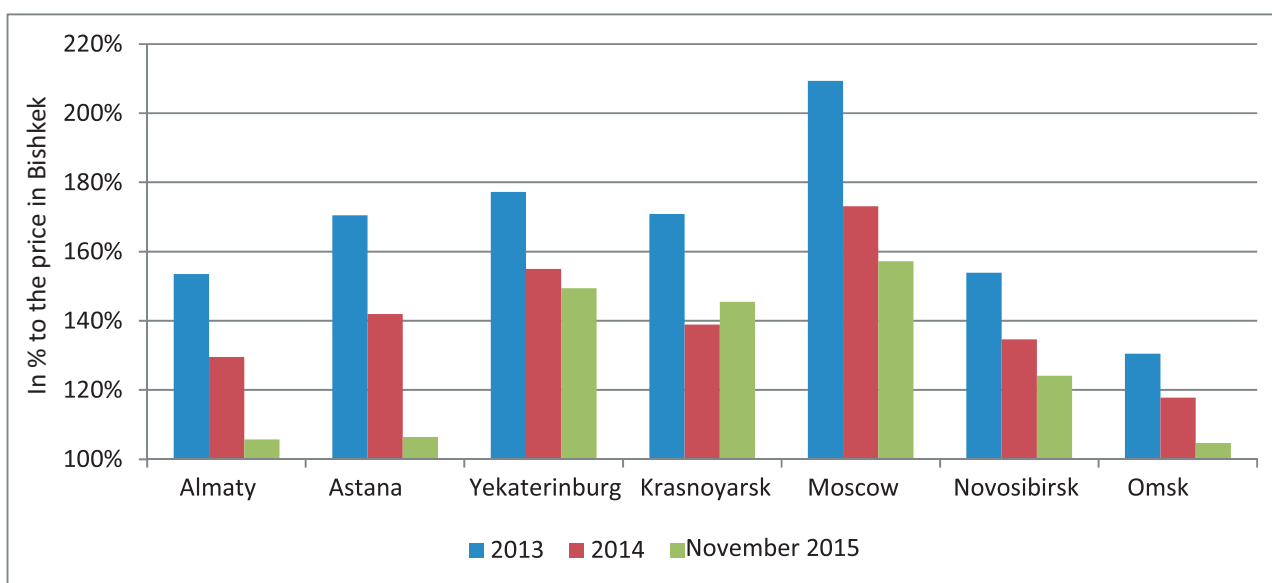
40 According to the World Bank, per capita private consumption in Kazakhstan and Kyrgyzstan in 2014 was, respectively, USD 12.5 thousand and USD 3.3 thousand (PPP-based).

41 As of the beginning of January 2016, no data on the amounts and sources of sheep meat imports to Russia in 2015 were published yet.

kets; potential price advantage was between 1.5 and two-fold, if not more. This gap in prices could have created a major incentive for the export of sheep meat from Kyrgyzstan. However, the situation changed by the end of 2015. During 2014-2015, the national currency (Kyrgyz som, KGS) appreciated significantly, by 25-40%, against the Russian ruble (RUR) and Kazakh tenge (KZT). These foreign exchange movements “ate” a large part of the price advantage Kyrgyz sheep meat could have had in these markets. Currently, sheep meat prices in Bishkek, Almaty, Astana and Omsk are almost identical; in Novosibirsk the price is only a quarter higher than the price in Bishkek. Only in the relatively geographically distant (2-3 thousand km) markets of Yekaterinburg, Krasnoyarsk and Moscow, are prices still significantly (40-60%) higher than in Bishkek. However, transport and other costs of accessing these markets are relatively high. Thus, it appears that the export of sheep meat (as well as exports of other goods) from Kyrgyzstan to Kazakhstan and Russia largely depends on macroeconomic dynamics broadly and the exchange rate of KGS to RUR and KZT in particular.

When assessing the costs of access to the markets of Kazakhstan and Russia, we should take into account that, although trade within the EAEU is not subject to customs duties, VAT is payable in a country of destination at the rate of 12% in Kazakhstan and 10% (for food products) in Russia.

Figure 9. Ratio of Sheep Meat Prices in Several Cities of Kazakhstan, Kyrgyzstan and Russia



Sources: Office of statistics of Kazakhstan, Kyrgyzstan, and Russia, own calculations

For comparison, Table 19 shows prices on imported sheep meat (FEACN code 0204)⁴² in China and the Gulf countries, which are also potential markets for sheep meat from Kyrgyzstan. Prices in these markets are also low in comparison to the retail price in Bishkek (USD \$6.05 per kg in the same 2014).

42 2014 CIF prices. More recent data are not available yet.

Table 19. Average Prices of Sheep Meat in a Selection of Overseas Markets, USD/kg

Importer	Exporters				
	All	Australia	New Zealand	India	Other countries
China	4.01	3,49	4,41	-	3,42
Bahrain	8,48	9,70	8,83	5,57	5,34
Kuwait	6,05	5,74	6,98	7,91	5,46
Oman	4,19	3,65	5,26	5,51	4,35
Qatar	5,94	6,98	7,94	3,71	4,61
United Arab Emirates	5,82	5,60	6,43	6,74	5,52
Average for the five countries of the Persian Gulf	6,05	6,40	6,40	5,99	5,21

Source: UN Comtrade database

In addition to price considerations, the most important limitations of exports of meat to Kazakhstan and Russia are the effective restrictions on the importation of animals and animal products from Kyrgyzstan. *Rosselkhoznadzor* issued regulation No.FS-EN-2/7091 dated 07.23.2007 “On the Imposition of Temporary Restrictions on Import (transit) of all Kinds of Animals and Animal Products from the Kyrgyz Republic to the Russian Federation” in connection with the deterioration of the epizootic situation in the Kyrgyz Republic for a number of infectious animal diseases.⁴³ For the same reason, Kazakhstan also imposed an embargo on meat supplies from Kyrgyzstan in 2007.

According to the regulation of the *Rosselkhoznadzor* No.FS-EN-8/14091 dated 08.25.2015, in connection with the accession of Kyrgyzstan to the Eurasian Economic Union on August 12, 2015, regulated goods that are subject to state veterinary supervision must now be imported to the Russian Federation in accordance with the EAEU guidelines. However until the inspection system of items subject to veterinary control (supervision) of the Kyrgyz Republic is deemed equivalent to other EAEU guidelines, only livestock products produced by Kyrgyz companies included in the Register of Third-country Enterprises are permitted for import into the Russian Federation. To date, there is not a single Kyrgyz company in this register. The same restrictions apply to the import of animal products to Kazakhstan, with the only difference being that some of the dairy (but not meat) enterprises from the Kyrgyz Republic are allowed to export their products to the three southern oblasts of Kazakhstan: Almaty, Zhambyl, and South Kazakhstan.

The EAEU adopted four key documents on Sanitary and Phytosanitary Measures: 1) Agreement on the Coordinated Policy in the area of Technical Regulation, Sanitary and Phytosanitary Measures; 2) Agreement on Sanitary Measures, 3) Agreement on Veterinary and Sanitary Measures, 4) Agreement on Quarantined Plants. These agreements establish uniform sanitary and epidemiological and hygienic requirements, uniform veterinary and animal

⁴³ <http://www.fsvps.ru/> The Federal Service for Veterinary and Phytosanitary Surveillance of the Ministry of Agriculture of the Russian Federation.

health requirements for the regulated goods, and common documents.⁴⁴ In accordance with the technical regulations of the EAEU, only accredited certification bodies and testing laboratories included in the Unified Register of accredited certification bodies and testing laboratories of the EAEU are permitted to conduct product certification and testing for the purposes of confirming their conformity with the uniform requirements in the EAEU territories. Each of the EAEU member-countries has the right to determine the list of accredited certification bodies and testing laboratories for inclusion into the Unified Register, which should be recognized in each country for the purposes of conformity with the established requirements. For agricultural products, Kyrgyzstan preliminarily proposed eight certification bodies and 31 testing laboratories in the Kyrgyz Republic for inclusion into the Unified Register of certification bodies and testing laboratories (centers) of the EAEU.

The standard certification system to be followed by Kyrgyz exporters once exports to the EAEU are permitted is as follows: prior to their importation into the EAEU customs territory, goods subject to sanitary control in the EAEU require state registration with the sanitary and epidemiological supervision authorities of those EAEU countries issuing certificates of registration, in accordance with the common EAEU standard. In order to obtain this, testing for compliance with the Uniform Sanitary Requirements of the EAEU may only be carried out in laboratories included in the Unified Register of certification bodies and testing laboratories of the EAEU. Agricultural producers should receive test protocols confirming their products' compliance with the technical regulations of the EAEU, as determined by accredited testing laboratories in the Kyrgyz Republic that are included in the Unified Register of testing laboratories of the EAEU. Under these protocols, enterprises accept declarations of conformity prepared in a common format. Declaration of conformity is a document confirming the safety of products. With these documents, producers can freely supply their products to any of the EAEU member-countries.

Section 4 provided comments made during the inspection mission by experts from the EAEU countries, illustrating the content and scale of changes required in Kyrgyzstan's system of production and veterinary and sanitary control to enable export of meat to the EAEU countries. It should be noted that this requires adoption of serious measures, both in public services (laboratory equipment, personnel training, modification of regulatory framework, animal identification, timely vaccination, restoration of effective veterinary control, etc.), and in meat-producing enterprises and sheep farms (timely veterinary treatment, appropriate equipment of the production facilities in slaughtering and meat processing workshops, improvements in the employed meat production and processing technologies, etc.). This, in turn, requires substantial public and private investment. The Russian Federation provides considerable assistance in the modernization of the laboratory and testing facilities in Kyrgyzstan through the provision of grant funds for this purpose.⁴⁵

44 Sanitary, phytosanitary and veterinary measures, EEC, May 2013 http://www.eurasiancommission.org/ru/Documents/broshura_sfs.pdf

45 <http://mineconom.gov.kg>, Ministry of Economy of the Kyrgyz Republic.

6. PROBLEMS AND PROSPECTS OF SHEEP MEAT PRODUCTION AND EXPORT IN Kyrgyzstan

The above analysis identifies a number of restrictions and obstacles to the expansion of sheep meat production and processing, which can be divided into four main groups:

- Problems of production and movement of livestock and meat along the value chains;
- Domestic institutional constraints associated with the current level of development of the rural economy as a whole;
- Technical barriers impeding exports of sheep meat to the EAEU countries; and
- External macroeconomic factors.

The production block of problems concerns all parts of the value chains: sheep-farmers, intermediaries, dealers, and slaughterhouses. First of all, small-scale producers have most of the sheep. An average farmer with a herd of at least 20 sheep is simply not capable of achieving an economy of scale. As a result, there is no productivity growth; the organization of production and technologies are at the subsistence farming level, where the main task is to get the value added at the least cost. The overabundance of livestock in village pastures, along with a distinct shortage thereof in distant mountain pastures, results in the failure to feed a large share of the sheep while leading to pasture degradation in overburdened oblasts. Larger farmers face the problem of feed shortage in the winter; the efficiency of their farms is reduced because of the lack of technical and financial knowledge. Having learned from their experiences in the difficult season of 2012-2013,⁴⁶ farmers try not to increase their livestock population to avoid the risk of feed shortage. Another serious problem is the high cost of access to pastures. It is estimated that these costs are reasonable when the population of livestock in a herd reaches 10-20 thousand sheep and 1,000 heads of cattle. In oblasts covered by the field study, herds of this size are observed only in isolated cases.

A common problem of unlocking the export potential is the fact that livestock production is currently aimed at domestic consumption. A large number of small producers create a situation in the market that is close to perfect competition. Limitation of the forage resources in winter results in the mass slaughter of livestock starting from the autumn, creating an oversupply of sheep meat with limited domestic demand. In the spring, the supply (and quality) of sheep meat reduces sharply, and prices increase. This creates conditions in which the massive supply of meat for export is only possible for an approximately three-month period, in autumn and winter. Throughout the rest of the year, export shipments of meat are extremely constrained.

In regards to intermediaries/buyers, it must be noted that this constituency is interested, to the extent possible, in the quickest resale of meat or livestock to the final consumers and have a very limited capacity for the consolidation of significant quantities of sheep to be able to form a lot for export. They have limited capital to arrange for keeping sheep until the season when prices rise; none of the resellers has refrigeration facilities for the storage of meat. When discussing consumers, we refer not only to meat-processing enterprises, but also to the general population. As mentioned above, a significant share of both the rural and urban population possesses and uses the skills to butcher livestock on their own, although this

46 <http://www.rg.ru/2012/12/05/zhivotnovody.html>, <https://faktorvremeny.wordpress.com/2012/03/24/kyrgyzstane-padezh-skota/>.

prohibited by the law. This is very different from the structure of consumption in developed countries, including Russia, though it shares similarities with Kazakhstan.

Slaughterhouses mainly serve as intermediary suppliers of meat or in some cases, solely as providers of slaughtering services. In addition, just like intermediaries/buyers, they lack refrigeration equipment. The fact that many shops do not have official registration indicates their non-compliance with established sanitary and veterinary standards, in terms of available infrastructure and equipment. Many shops are extremely small in size. Another big challenge for slaughterhouses is the competition from spontaneous livestock slaughtering by the population. In such circumstances, it is extremely challenging to invest in equipment with export supply potential. At the same time, it is worth noting that facilities using modern production methods are emerging in Kyrgyzstan; the “Toro” slaughterhouse in the suburbs of Bishkek, for example, closely observes the sanitary requirements and standards of the Halal meat industry. In general, we may summarize that there are two major problems in terms of sheep meat production and distribution until final consumption:

- The subsistence nature of agriculture has resulted in the focus on traditional domestic consumption when the population itself produces and consumes a considerable portion of sheep meat with a high fat content. Not only the fat content of meat but also consumption of the meat of adult animals is not typical of sheep meat consumption in developed countries. There is still a potential of supplying sheep meat to Kazakhstan, where the culture of sheep meat consumption is historically and culturally similar to the situation in Kyrgyzstan.
- The small scale of production does not allow for improving productivity. Some resources, such as distant pastures, are underutilized. At the same time, there is an overload of village pastures and a shortage of feed in winter. Lack of capital hinders the ability to develop a technological solution to the problem, such as the massive slaughter of livestock in the autumn with subsequent freezing and gradual sale of meat throughout the year.

Institutional constraints include the lack of a whole class of solutions in the area of public policy and livestock sector management practices. First, this refers to the absence of a livestock identification system. The existing plan to introduce such a system⁴⁷ provides for at least five years of work for the cattle subsector. Kyrgyzstan started creating its livestock identification system in 2014-2015. The country procured USD \$2.2 million worth of equipment for the maintenance of livestock identification.⁴⁸

However, the actual identification of sheep will be out of the question during the first five years of the initiated process. This moves the horizon of the practical implementation of such a system to at least a decade from now. Another problem is the lack of practical steps to implement a zoning system that would help prevent the spread of livestock diseases. Because of the lack of funding for the agricultural sector, vaccination levels remains consistently in the range of 30-70% of the livestock population. This constrains efforts to prevent or eradicate

47 See the draft National Concept and Action Plan for implementation of the livestock identification and traceability systems prepared with the assistance of FAO.

48 Report on progress of the Ministry of Agriculture and Land Reclamation of the Kyrgyz Republic in the implementation of the Law of the Kyrgyz Republic “On identification of animals”, <http://www.agroprod.kg/modules.php?name=Pages&page=2079>.

the incidence of animal diseases and thus the industry sustains a permanent risk of animal disease outbreaks. Overall, pasture reform has not yet brought about any visible improvements in the use of this type of agricultural land; the overgrazing in village pastures and the underutilization of distant pastures remain prevalent. In quite a few cases, participants of all stages of sheep meat production and consumption process simply ignore the existing veterinary legislation.

Currently, the Ministry of Agriculture and Land Reclamation of the Kyrgyz Republic, which is the main body responsible for the agricultural policy formulation, is excluded from a system of monitoring the veterinary situation in the country. According to the Law “On veterinary medicine”, the State Inspectorate for Veterinary and Phytosanitary Safety reports directly to the Government of the Kyrgyz Republic. Meanwhile, in the structure of the Government Office, there is still no separate unit responsible for the formulation of veterinary policy and control over the decisionmaking and execution. This institutional arrangement is not conducive to efficient public administration in the area of animal health.

Technical barriers to meat exports from Kyrgyzstan to Kazakhstan and Russia in the form of an outright ban on exports to these two countries are associated with the existing epizootic risks and inability to confirm the veterinary and sanitary safety of the meat produced in Kyrgyzstan. There is a need for the fundamental modernization of the entire system of veterinary care and control, which has been launched upon the accession of Kyrgyzstan to the EAEU. It is important to note that the reorganization of laboratories and other public services, which began in large part through Russian support, is a necessary but nowhere near sufficient condition for the free export of meat to the EAEU countries. It also requires the involvement of the private sector and all value chains participants, in order to actually reduce and prevent the incidence of sheep diseases and ensure compliance with the established technical regulations and other food safety requirements in force in the EAEU. Compliance with all of these requirements requires a very large capital investment and significant operating costs on behalf of farmers and companies involved in the industry. Without this investment, a situation may arise when perfectly equipped and functioning laboratories have to issue negative opinions based on the findings of an analysis of the meat produced in violation of the technical requirements due to the imbalance between producers and regulators.

Macroeconomic factors affecting the possibilities of sheep meat export from Kyrgyzstan include movements of the exchange rate of the Kyrgyz national currency (KGS) to the national currencies of potential importers. The recent strengthening of KGS to RUR and KZT undermines the price competitiveness of Kyrgyz producers. The persistence of this trend may lead to a situation where Kazakh sheep meat actually begins to penetrate the domestic market of Kyrgyzstan.

7. RECOMMENDATIONS TO ENCOURAGE SHEEP MEAT PRODUCTION AND EXPORTS IN KYRGYZSTAN

The problems and prospects outlined above necessitate a number of proposals for the development of the commercial and export-oriented production of sheep meat in Kyrgyzstan. These include:

Support for sheep meat producers. There are two groups of participants in the industry: 1) small, and 2) relatively large producers. The first group has neither the financial nor human resources to increase its output of sheep meat. They find it very challenging to use distant pastures, a key forage resource in Kyrgyzstan. The second group also faces many challenges, but, unlike the first group, it has the potential to increase and modernize production. For that reason the recommendations are provided separately for each of these two groups.

Support to relatively large producers. This group includes sheep farmers and those of the slaughterhouses that are ready to invest in equipment (including refrigerating facilities) and technology, and gradually grow into modern meat-processing plants. To do this, they need access to capital and technology, including marketing techniques. Kyrgyzstan now benefits from the Russian-Kyrgyz Development Fund, which has significant financial resources and is focused on the development of the production sector in Kyrgyzstan. It could become a source of credit for large-scale sheep meat producers, offering them more acceptable conditions in terms of interest rates, terms, collateral, etc. Obviously, money is not everything a business needs to succeed; knowledge is also essential. Therefore, it would be useful for the state and perhaps also for donors to encourage the emergence of consulting companies with the capacity to provide technological, veterinary, marketing and other support to sheep meat producers on a commercial basis. At the same time, large sheep farmers should bear more responsibility for the use and resource management of distant pastures, because they are the almost sole users of these pastures. Such enterprises must also ensure their compliance with all necessary veterinary and sanitary rules. Of course, in this case they will have to part with their informal operating status; while this status ensures a certain degree of comfort, it constrains opportunities for future growth. It should be noted that this proposal is fully in line with the state strategy of agricultural production consolidation (see Section 2.5).

The development of large scale enterprises with their own refrigeration facilities, access to knowledge, technical assistance and cheaper credit that are oriented towards both the domestic and export markets will improve the efficiency and profitability of production and reduce the seasonal fluctuations in prices, benefiting both large and small producers and consumers.

Support to small producers. With respect to small producers: first, they still have the option of voluntary cooperation that allows them to establish larger farms, and tangible support for large-scale producers can create incentives for such cooperation. As observed in the existing literature,⁴⁹ at this stage of development service cooperatives are the most useful and real form of cooperation; these types of co-ops allow for members' training (including in the area of veterinary and sanitary issues) and enable members to receive access to market information, supplies of medicines for livestock, centralized slaughtering and cold storage services as well as access to credit on the same conditions as large producers. These co-ops could also

49 Lerman, Z. Cooperative development in Central Asia. FAO, 2013

be operational in promoting sheep meat and other livestock products on external markets, including those of EAEU, if they receive support from the government and donor organizations. As a result, cooperatives would enable small producers to achieve the necessary level of production consolidation and behave on the market as large sheep meat producers.

Secondly, the small producers can also cooperate with large farms by receiving a variety of paid services from them (for example, leaving their livestock with large farmers for summer grazing, which has become quite popular in recent years) or providing some services to them. These types of cooperation can be supported by strengthening contract enforcement and dispute resolution mechanisms (e.g. by subsidizing legal assistance for small farmers). Thirdly, they should perhaps not face the same stringent technological requirements (e.g. animal identification etc.) as those imposed on commercial producers, because they are still largely subsistence farmers with a slim chance of practical implementation of written rules, at least in the short and medium term.

Improvement of the veterinary control system. Fulfillment of this condition is absolutely essential; without it, not only sheep meat but all types of meat will not have the guarantee of safe consumption for Kyrgyz citizens, not to mention for the sector's export potential. This will significantly improve the prevention and monitoring of diseases transmitted from animals to humans. Continuing and successfully completing the ongoing quality infrastructure reforms is a necessity.

The main directives needed to improve the veterinary control system are as follows⁵⁰:

- Organize an implementation system to zone for the predominant infectious diseases;
- Organize a system to classify producers of livestock by the extent of protection from infectious diseases ;
- Establish a control system wherein raw meat is labeled with a specific veterinary marking;
- Establish a program wherein the State Inspectorate on Phytosanitary and Veterinary Security monitors and controls outbreaks of dangerous animal diseases.
- Continue the accreditation of laboratories that can assess the safety of meat and meat products at the appropriate level while maintaining their accessibility to the majority of livestock producers.

Formulation of a strategy to promote meat exports to Russia. From the cultural and culinary points of view, sheep meat consumption in Kazakhstan is not very different from practices in Kyrgyzstan, and no special measures are likely needed to promote export to this country. However, a different approach to the Russian market is needed, with a view towards creating a standardized product with a different carcass dressing type that is oriented to a different consumption culture. This market may require the development of a niche product with unique characteristics. This could require studying and adapting the marketing experience of other countries: both leaders in the sheep meat market (Australia and New Zealand), and developing countries that have succeeded in the development of niche products in other branches of agriculture.

50 Final report on inspection by EAEU experts of enterprises involved in the production of animal products in KR, 2015. The Federal Service for Veterinary and Phytosanitary Surveillance of the Ministry of Agriculture of the Russian Federation.

These considerations can be summarized as the following recommendations aimed 1) at public authorities and international development organizations and 2) at the private sector to promote the production and export of sheep meat:

Recommendations for public authorities and international development organizations

1. The introduction of the animal identification system must remain a priority; delays in implementation of the scheduled activities must not be tolerated.⁵¹
2. Vaccination coverage of livestock against all types of hazardous diseases must be increased to 100%, which will require increased funding of this activity.
3. A significant share of livestock sales comes through the specialized livestock markets. Infrastructure (including laboratories) and the operating procedure of the specialized livestock markets must be brought in line with legislative requirements as highlighted in the previous recommendations to improve veterinary control systems.
4. The movement of livestock by farmers and intermediaries between oblasts should be organized in such a way that livestock transportation cannot occur without strict veterinary control.
5. A massive media outreach campaign is needed to explain that the violation of veterinary regulations is unacceptable; a public information campaign targeted at farmers and other value chains participants is recommended to explain the danger of diseases, disease transmission mechanisms and measures to prevent diseases.
6. It is necessary to develop and implement a special mechanism of concessional lending and technical assistance for large farmers/producers and cooperatives, while simultaneously transferring responsibility for the distant pasture management to them, albeit gradually.
7. The process of establishing agricultural cooperatives (especially, those providing services to their members) of small farmers should be supported; support has also to be extended to cooperation of large and small farmers (e.g. in the form of mutual service provision).
8. Support of the state-owned sheep breeding farms is necessary to expand the network of artificial insemination centers and increase the supply of semen for small ruminants.
9. In the medium term, as veterinary and institutional problems of the industry are addressed, there will be a need to develop and implement a system of marketing activities to promote sheep meat from Kyrgyzstan to the markets in Russia and several other countries, including advertising campaigns to highlight the high quality of Kyrgyzstan's sheep meat and the introduction of a new carcass dressing scheme that meets the needs of respective markets, among many others.
10. The state should help increase the export of meat (as well as other products) by pursuing an exchange rate policy that ensures the competitiveness of domestic products in foreign markets.

51 Currently, the Ministry of Agriculture and Land Reclamation postpones the deadline of introducing the animal identification system from April 1 to November 1, 2016, because of the lack of clarity with regard to the funding sources. See the Report on progress of the Ministry of Agriculture and Land Reclamation of the Kyrgyz Republic in the implementation of the Law of the Kyrgyz Republic "On identification of animals", <http://www.agroprod.kg/modules.php?name=Pages&page=2079>.

Proposals for the private sector

1. Given the current livestock's low genetic potential, sheep farmers must take care on their own to strengthen the breed qualities of their livestock, for example, by cross-breeding with rams of multiparous and meat merino breeds.
2. Sheep farmers should contribute to improving veterinary services by ensuring universal livestock vaccination and helping search for and identify the sources of any livestock infections.
3. Large manufacturers must invest in education (their own, as well as the education of their personnel) in the area of veterinary science, meat production and processing technology.
4. Small farmers should establish service co-ops of different types: joint investments (e.g. in refrigeration equipment), veterinary services, breed support and development, procurement of inputs and sales of outputs, among others.
5. The consolidation of farmers into associations of meat producers would offer significant benefits, for the protection of their common interests vis-à-vis public authorities, the facilitation of product certification procedures, cooperation in the area of veterinary protection and facilitating exchanges of knowledge and experience.

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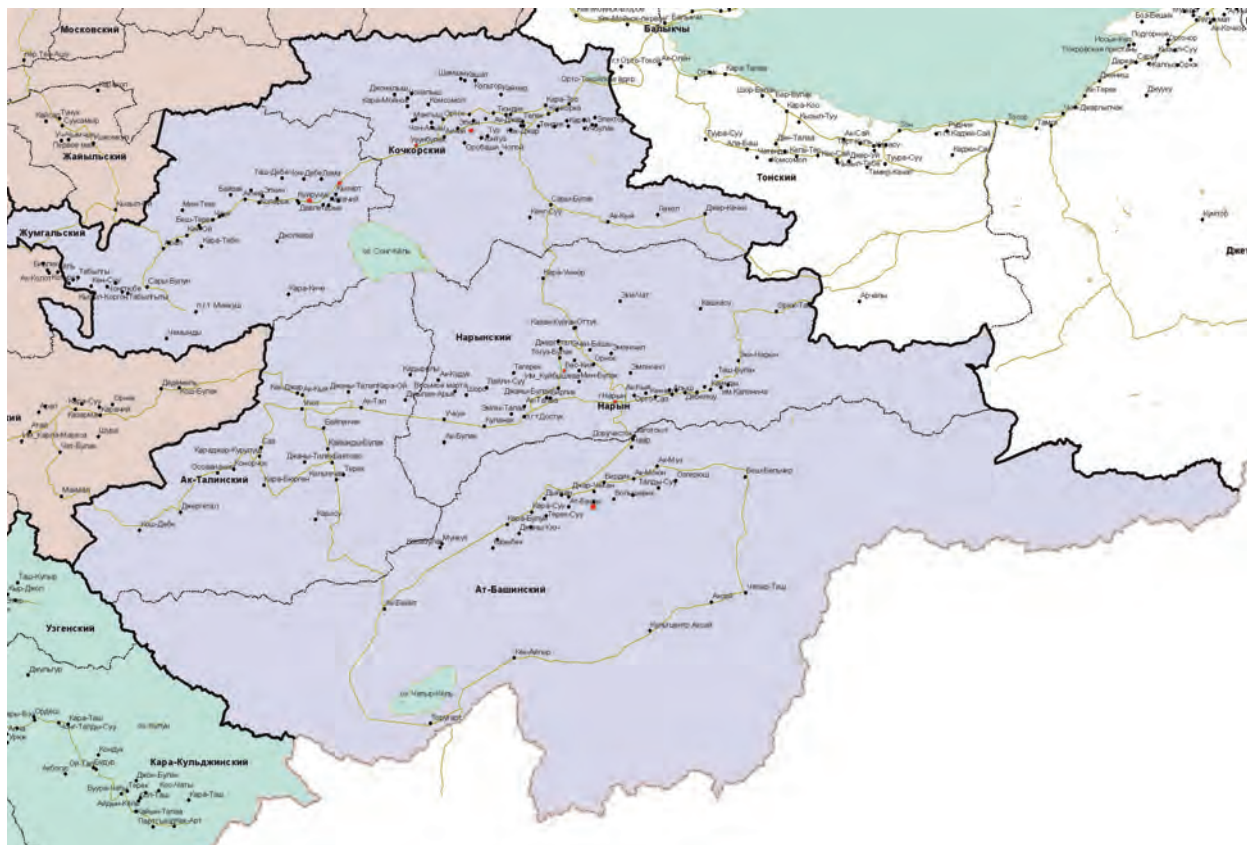
ANNEX. MAPS OF DATA COLLECTION POINTS DURING FIELD SURVEY

The surveyed communities are highlighted in red.

Chui oblast



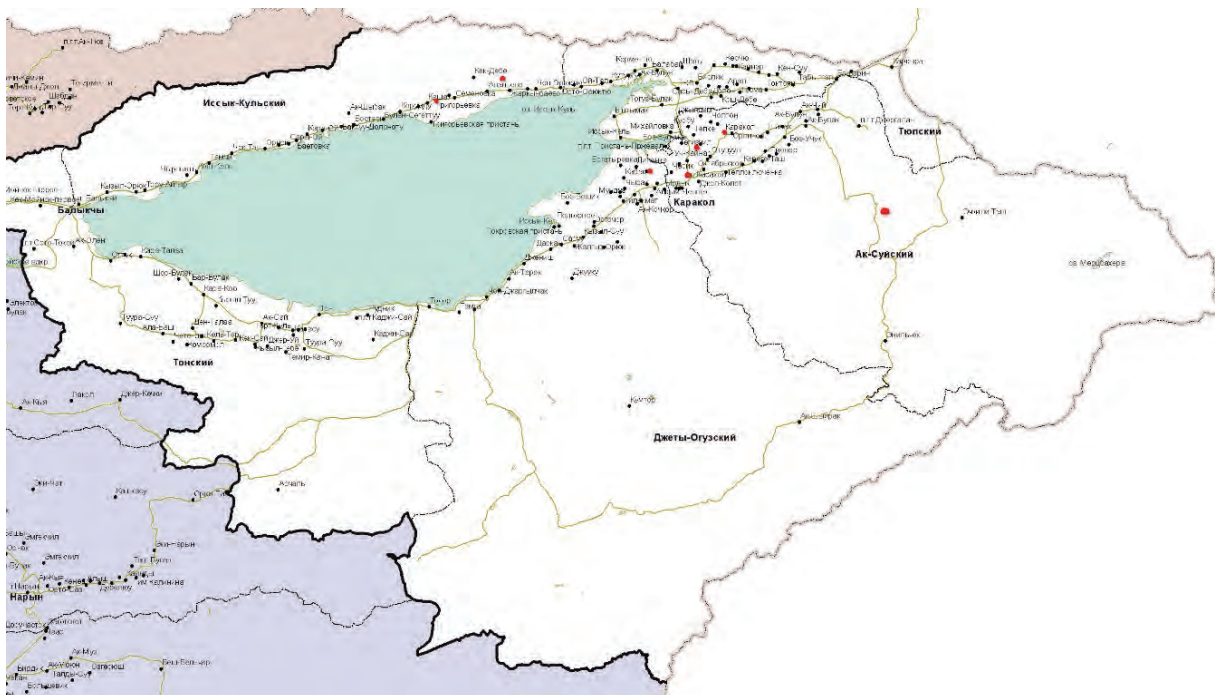
Naryn oblast



Jalal-Abad oblast



Issyk-Kul oblast



Source: zone map supporting the draft Resolution of the Government of the Kyrgyz Republic “On the zoning of the territory of the Kyrgyz Republic”: http://www.gov.kg/wp-content/uploads/2012/12/karta_kg.gif.

