

Perspectives on Sheep Farming
& The Sheep Market System in Georgia



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NOTE ON THE REPORT

This Report refers to current status, problems and challenges concerning sheep farming and sheep market system in Georgia. Sheep farming is one of the most important fields of agriculture in Georgia. It is geographically unique with production spanning across regions as sheep must move from winter to summer pastures. Sheep farming is mainly practiced in Kakheti, Kvemo Kartli and Samegrelo Zemo Kartli. The report details the current husbandry of sheep; breeding, existing veterinary conditions, sheep farming expenses, risks, also recommendations concerning the development of this field. A purpose of the report is providing of baseline information concerning the sheep farming field for stakeholders and organizations. Obviously the report cannot be all-encompassing; it requires a further update, more research and various actions due to support of Georgian sheep farmers. For a great support in composing of this report we would like to express gratitude to Swiss Agency for Development and Cooperation (SDC) funded “Alliances KK” Programme implemented by “Mercy Corps” International Organization. I would like to thank Maia Mosiashvili and Nata Sisvadze for their immense help in contributing to the development of the report and their work on organizing and shaping the material.

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Since 1947 there had been no reports on Georgian sheep husbandry or market. When Alliances KK began work in the sheep sector in 2012 this emerged as a major constraint to the development of interventions. Thus the programme in addition to its ongoing market analysis commissioned this report from Beka Gonashvili, Head of the Shepherds Association, sheep breeder, exporter, government advisor and programme key informant. This report marks the first publication written by the new generation of shepherds working in the post soviet space.

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INTRODUCTION

People involved in sheep farming in Georgia are basically those former shepherds who were employed by the Soviet “Kolkhoz” about 20-30 years ago. During the Soviet Epoch professional vet doctors and livestock experts together with shepherds were managing sheep farming. During severe winters they were providing sheep with additional nutrition. With the demise of the Soviet Union the Georgian sheep farming system collapsed leaving farmers with no professional knowledge, input systems, a collapsing veterinary system leading to deteriorating animal health care, breed quality and delining production.

Regrettably those currently involved in sheep farming pay less attention to sheep feeding, care and implementation of innovations in this field. They have not been using profit for farther development of their farms. It could be explained also by that most of those involved in sheep farming take this activity as a daily routine but not as a serious business that requires more investments for development and progress.

Existence of complete and organized legislative base for livestock and meat export is important due to development of sheep farming in Georgia. On the top of it logistic has to be developed, new markets have to be adopted, endemic breeds must be registered due to their popularization at international exhibitions and scientific conferences.

RESEARCH METHODOLOGY

For this research we used method of interviewing of practitioner-farmers and investors in order to identify their expenses, problems and recommendations. We also interviewed various scale farmers from various regions of Georgia:

- Bejan Gonashvili – owner of over 3, 000 sheep, also owns summer and winter pastures, also arable lands in Dedoflistskaro Municipality in Kakheti Region. He produces barley and wheat in order to feed sheep in winter. He carries out all necessary vaccinations on his own.
- Vagif Bairamov – owner of over 2, 500 sheep and part of winter pastures in Dedoflistskaro Municipality in Kakheti Region. He rents part of winter pastures and summer pastures from the private land owners. He purchases barley for sheep in winter. He tries carrying out of necessary vaccinations by himself however he is not always able to do it due to lack of finances.
- Natik Nasibov – owns over 800 sheep. Rents as summer as well winter pastures. He is in comradeship with his relatives and they plan together vaccinations and other necessary measures.
- Giorgi Megutnishvili – owns aver 40 sheep. He lives in Tsinandali Village in Telavi Municipality, looks after his sheep by himself. He basically uses the village pastures and produces additional nutrition at his own land.
- Jamil Omrani, a representative of the Qatar Livestock and Meat State Company, was also interviewed. He purchased sheep in Georgia in September of 2011 and he faced a sheep transportation problem. The company that he represents carries imports over 50, 000 live sheep in Qatar. They own a slaughterhouse and other infrastructure in Doha.

1. HISTORICAL REVIEW OF GEORGIAN SHEEP FARMING

1.1 GEORGIAN SHEEP BREEDS

There are over 500 breeds of sheep found around the world and only 43 breeds are woolless. According to major products they are apportioned by fine-wool, semi fine-wool, semi coarse-wool and coarse-wool breeds.

Sheep-Farming in Georgia is basically experienced near winter or summer pasture zones. According to rational usage of natural land three systems of sheep farming have been established: manufacturing - nomad, manufacturing – fixed-site, and house. First system is spread in Tusheti, Kakheti, Khevsureti, Mtiuleti and Kartli; second – in Meskheti – Javakheti and Trialeti; Third – basically in Western Georgia.

Since time immemorial using of summer and winter Pastures for sheep has been common for Georgia. Consequently, domestic farming promoted formation of Tushuri sheep. Time after time sheep gained the qualities that made it stress resisting and easily adaptable on changeable climate. Due to a “strong knee” Tushuri sheep is able to travel on a long distance - approximately through 4 000 km yearly.

Georgian sheep are sold in the markets of various countries in Asia. Good taste and high adaptability make Georgian sheep popular. Also Georgian sheep are ecologically clean.

No data concerning number of sheep in the country is available however according to various calculations currently there should be from 600, 000 to 1 million heads of sheep in the country and 80 – 85% of them are Tushuri sheep breed. Breeding of over 2 million sheep is available in Georgia in winter period (4 million in summer) according to experts.

The country could receive over 200 million GEL exporting product in case of maximum usage of potential of this sphere. According to Ministry of Agriculture of Georgia 160, 560 and 267, 144 heads of sheep were sold outside of the country in 2010 and 2009 respectively. According to statistic data 53, 195 heads of Georgian sheep were sold in Armenia and over 40, 000 in Iran during 2010.

TUSHURI SHEEP

Semi fat-tailed sheep breed has been produced in Eastern Georgian nomadic farming conditions according to longstanding popular selection (XIII –XIV centuries) by cross-breeding of old Georgian breeds with other coarse-wool sheep. Tushuri sheep are compact with a great construction, sustainable to a long distance driving out, they manage to get fed on sparse pastures, they are meaty and wool productivity increases if they eat more. They grows up fast, less productive, have high quality meat and white, bendable, elastic and shining wool which is used for high quality carpet making. Live weight of Tushuri sheep is: Ram – 56-80kg (maximum weight 90kg), breeding ewe – 41-42kg (maximum 60kg). It is sheared twice per year. Its shorn is 3-4kg of wool (maximum 5.5kg) per season. Length of wool is 11-17sm (maximum 31sm).

GEORGIAN SEMI-FINE WOOL FAT TAIL SHEEP

Georgian semi-fine wool fat tail sheep is a breed obtained in 1948 as a result of crossbreeding of the local Tushuri ewe and the local fine wool ram (Ramble and Prekos). Its live weight is: ewe – 47kg, ram-70kg. Maximum weight of some of them is: ewe-65kg and ram-125kg. The mentioned breed is to be extinct. According to Professor Vasil Gligvashvili, the Doctor of Agriculture Science, he still keeps a few sheep of this breed.

GEORGIAN FINE WOOL FAT TAIL SHEEP

This Breed has been obtained in 1954 as a result of crossbreeding of Tushuri ewe and fine wool ram. Its live weight is: ewe – 54kg and ram – 78kg. The mentioned breed is fully extinct.

IMERULI SHEEP

Imeruli Sheep offspring of an old Georgian sheep, small, has thin lengthened body, short conical tail, mostly white, sometimes colorful. Live weight of Breeding Ewe and Ram is maximum 39kg and 45kg respectively. It has fine wool. Length of wool Breeding Ewe and Ram is 13.3sm and 17.4sm respectively. Shorn of Breeding Ewe is 1.53kg and Ram 2.7kg. They have a high quality meat with one of the best tastes without any specific smell. Imeruli Sheep are currently remaining in Imereti, Racha, Letchkhumi and Svaneti. Tushuri, Hemfshinuri, Kharachauli and other breeds have been brought in Western Georgia during last 40 years and as a result of crossbreeding a breed nature of Imeruli sheep has worsened.

2. NUMBER OF SHEEP IN GEORGIA

At the time of collapse of the Soviet Union, according to statistics, there were over 2, 000, 000 heads of sheep in Georgia (according to 1988 data 1, 894, 000 heads). That time Georgia was using Kizlari winter pastures in Dagestan (territory of the Russian Federation) which is of course inaccessible for this moment. Accordingly sheep population has decreased. (See the ANNEX 1. table 1. *Data of Statistics National Agency*)

According to 2004 agriculture registration out of existing 729, 452 household farms in Georgia 48, 369 household farms have sheep and goat. Total number of sheep was 745, 000, 15 heads of sheep in each household farm in average. 40, 345 household farms had from 1 to 10 sheep (82, 3%), 3, 190 household farms had from 10 to 20 sheep (6, 5%) and 3, 756 households had from 20 to 50 sheep (3, 4%).

Table 2: data concerning number of sheep in Georgia per household in 2004

Household Farm	Number of Sheep owned	%
40, 345	From 1 to 10	82, 5%
3, 190	From 10 to 20	6, 5%
3, 756	From 20 to 50	3, 4%

Accuracy of official statistics data concerning number of sheep and sheep farming in Georgia is doubtful because sheep identification and registration activities have not been carried out in the country for a long time.

According to the data of Georgian Shepherds Association by the end of the year 2013, after lambing period is finished, the approximate number of the sheep will be 700 000 - 800 000 countrywide. From this number about 400 000 will be ewe, 100 000-150 000 – saremonto nerbi, 10 000-15 000 will be rams, 30 000-50 000 - old sheep and rest of them will be sold.

Table 3: approximate number of sheep population in Georgia in 2013 after lambing:

Ewe	Breeding Ewe	Ram	Old Sheep	Sheep for Sale (Offspring)
Over 400 000	From 100 000 to 150 000	From 10 000 To 15 000	From 30 000 To 50 000	From 150 000 To 180 000

According to our observations only 4 or 5 farmers in Georgia own 4, 000 or more sheep, 5 or 7 farmers own from 2, 000 to 4, 000 sheep, from 10 to 15 farmers own 1, 000 to 2, 000 sheep, rest of the number of sheep are owned by small farmers who own from 150 to 1, 000 sheep.

High number of share of household farming in Georgia points at necessity of establishment of farming corporations and cooperatives.

(Please, see the annexes 2, 3, 4, 5, Statistic Data of the National Statistics Agency.)

According to our observations average growth of sheep in household farms during years is no more than 70-80%. Accordingly data in the tables of the National Statistics Agency is doubtful because 96% growth of Tushuri sheep is impossible.

According to official statistics aver 40% of sheep in Georgia go to winter pastures in Dedoflistsvaro Municipality. Over 35% go to winter pastures in Signagi, Sagarejo and Gurjaani municipalities. Rest of sheep goes to winter pastures in Kvemo Kartli and Shida Kartli regions.

Currently in Georgia total area of winter pastures is over 300, 000 ha. It means that 1ha of winter pasture is used by 3 or 4 sheep that is unacceptable. According to standards, that were adopted in Soviet times, 0, 8 sheep requires 1ha of winter pasture however we should take into account the fact that in that time sheep had additional nutrition as well. Currently in Georgia 95% of farmers give no additional nutrition to sheep.

According to resources of pastures in Georgia number of sheep could be increased up to 900, 000. In 2009 attempt of farmers to increase number of sheep was observed: farmers stopped selling ewe female lambs keeping them for breeding for next year. Since 2012 this tendency has significantly changed that has been directly connected with increase of pasture usage prices. Farmers have no finances to rent or purchase large pastures. As a result some of the farmers have sold ewes in order to decrease number of sheep. (Alakhiar Edigarov who had 1800 sheep has sold about 400 heads of sheep in 2012)

Currently the most of the part of pastures are sold and they are owned by private owners. In some of the cases sheep owners also own pastures and they have to pay only taxes however other farmers have to rent pastures and they have to pay 15GEL and taxes. On the top of it there are building on pastures and pastures are sold together with these buildings.

The market price of pastures is from \$300 to \$500/1ha depending on the following circumstances: distance to settled areas; condition of buildings where sheep and shepherds stay; distance to water; if nearby territory is fine to be used for sawing etc.

3. LEGISLATIVE REGULATIONS FOR SHEEP FARMING

There are no state taxes for sheep farming in Georgia. Sheep farmers pay only for land property and usage. Land property (pasture, building) tax is a local, municipal tax. According to the current legislation Georgian Government defines a baseline due according to a certain municipality and each municipality is allowed to even increase the due. Land Property Tax is different in every municipality.

Property tax on agricultural land in Georgia is differentiated according to administrative units. Georgian Government establishes a Property Tax Baseline Rates per 1ha of land. On the base of this decree a municipality establishes property tax rate on lands that should not exceed 150% of baseline rate.

In 2009 pasture fee was 3GEL/1ha all over the country. According to existing standards farmers pay from 5 to 20GEL/1ha:

- Akhmeta Municipality (Kakheti Region) – 5GEL
- Dedoplistskaro Municipality (Kakheti Region) – 7GEL
- Signagi Municipality (Kakheti Region) – 16 GEL
- Ninotsminda Municipality (Samtskhe Javakheti Region) – 16GEL

However according to the State Programme concerning “Social-Economic and Cultural Development of High Land Regions” fee for lands owned by local population is half price and costs 8 GEL/1ha while owner of a nearby pasture, resident of another region, who uses the mentioned territory as a summer pasture for 4-5 months has to pay full price 16GEL.

In case if a pasture is not rented by a private body it costs 10 or 15 GEL more. 60% of farmers rent pastures from local land owners.

In Georgia people involved in agriculture in terms of up to 200, 000GEL turnover are free of any taxes however if their turnover is more than 100, 000 GEL they are automatically registered as VAT payers.

1. 99% of sheep farms in Georgia are not registered, farmers do not carry out accounting; do not give away statistic data etc.
2. Mostly farmers do not provide information concerning real number of their sheep in order to avoid state taxes.

As for other regulations there is no sheep breed or wool standards in Georgia that means that our local breeds are not registered as Georgian endemic breeds with its characteristics. Considering the fact that Georgia exports both male and female sheep in other countries there is a risk that these particular breed will be reproduced in an importer country and as a result Georgian sheep may be named Lebanese or Iranian sheep.

We have not got wool standard either. Currently on the base of knowledge in Georgia wool is divided in 4 species: tender, semi-tender, semi-coarse and coarse. The mentioned specifications do not comply with any existing world standards and it is difficult to make any specific offer in order to sell it.

Another legislative fault is that farmers have to go through complicated procedures in order to write off a dead sheep. Currently the most of the organizations do not register sheep so this issue becomes less important however there are some exceptions:”Lomtagori” Farming in Marneuli municipality used to send information to revenue service on each dead sheep paying 21 per dead animal. Then revenue service was sending an agent which was coming at site to check the animal and to compose an appropriate act. Going through these procedures at summer pastures is too complicated expensive

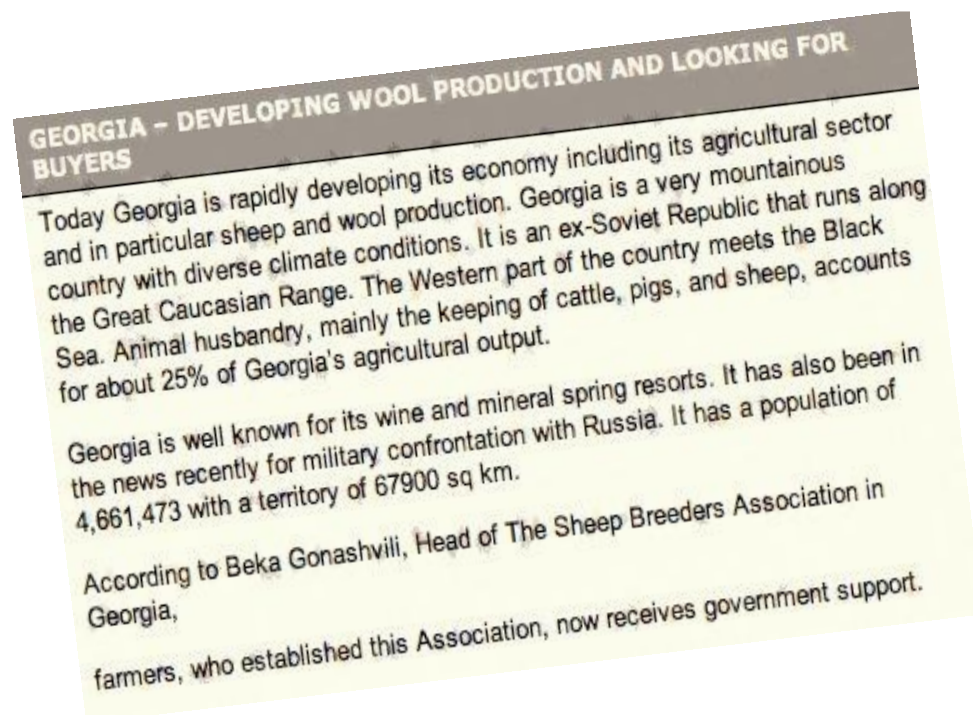
because traveling to summer pastures take long time (some of the places are not accessible by car) and require additional expenses.

“Lomtagora” LTD in 2012 lost 1, 500 sheep. It costed 30, 000GEL to write off dead sheep. We believe that the mentioned legislation must be changed.

3.1 SHEPHERDS UNIONS AND ASSOCIATIONS

Currently there is “Georgian Shepherds Association” established in 2010 and unites 25 sheep farmers. The association has been established with the support of the ministry of agriculture of Georgia. The association is actively involved in process of solving of various problems of shepherds: sheep movement route identification, demarcation and organization; identification and adoption of new markets. As a result of active work of the association and support of Ministry of agriculture and Food National Agency Georgian sheep was exported in Iran through the direct air flights in 2010. In August of 2011 Georgian live sheep was exported in Israel for the first time. In August 2011 first time was carried out free of charge identification and vaccination on foot and mouth disease of over 10, 000 sheep.

On this stage the association tries to identify wool market in various countries for export of Georgian wool. In 2011 on one of the most popular website www.woolnews.net was published an article concerning Georgian Sheep Wool. In 2012 in the Chinese and English magazines of the same website was published an article concerning Georgian Sheep Wool. 20, 000 copies of this magazine were distributed to wool processing factories in China, India, Turkey and other countries. As a result of this activities in 2011 first export was sent to Turkey’s AKEL WOOL factory that was followed by interest of other factories and as a result price of wool 0. 60GEL in Georgia has increased and now it costs 1. 5GEL.



Fragment from the article in online journal: www.woolnews.net

There are only a few other organizations in Georgia that directly or indirectly are linked with sheep farming, for example: Association "Tushetian Shepherd" (Alvani village, Kakheti) actively cooperates with the Georgian Shepherds Association. As for indirect linkages, we could name Vet Association in Kakheti region and others.

Usually Sheep Farmers in Georgia unite in informal groups. They coalesce in purpose of reduce or share of expenses: several farmers, who have over 200 sheep, unite as 1, 500 heard.

4. FULL CYCLE OF SHEEP FARMING SPHERE

Three systems types of sheep farming have been practiced in Georgia: **Nomad, Fixed and Semi Fixed-site.**

Nomad system is the most popular in Georgia. This a complicated system meaning using pastures during a year. Sheep moves to summer and winter pastures by foot walking over 10km/day. This type of farming is basically practiced in Dedoflitskaro, Signagi, Gurjaani, Telavi, Akhmeta, Sagarejo, Marneuli, Gardabani, Bolnisi, Tianeti, Akhgori, Dusheti, and other municipalities.

Distance between summer and winter pastures is over 300km and sheep and shepherds cover it twice/year.

Fixed Site: sheep during winter is fed on site basically by hay cut during summer (not using pastures at all). From end April till end of October sheep is fed at pastures close to a site. This type of sheep farming system is practiced in Ninotsminda, Dmanisi, Akhalkalaki, Tsalka, Borjomi, Akhaltsikhe, Adigeni and Tianeti municipalities.

Semi – Fixed Site: During winter sheep is fed at pastures near villages coming back at farms at night where they have additional fodder. In summer sheep is taken to nearby highland summer pastures. Currently nomad sheep farming system is the most popular in Georgia.

Let's consider production cycle according to this system:

Existing sheep stations are basically located at winter pastures. At summer pastures fences are arranged for sheep. Winter sheep stations are over 1, 000 sq. /m. that have low ceilings. No cleaning system is arranged. Shepherds throw dung from small windows located at back side of sheep stations. From front side sheep stations have few doors, basically 3 or 4. Stations inside are partitioned in several separate dwellings, accordingly buildings require several doors. Floor of sheep stations are covered by usual ground that often turn muddy.

Rooms for lambs are arranged in the same buildings that require to be more protected from cold. There is no drainage system so shepherds use straw as floor.

Sheep stations located at winter pastures were built over 40 years ago and their current condition is regrettable if we take into consideration the fact that shepherds, sometimes with their families, have to live in such buildings.

Lambing period in Georgia is in January and February, it really continues in March. If farmers are able to feed sheep in winter they would prefer winter lambing because in this case lamb gets to a selling condition faster (more than 30kg of live weight). In case of lack of winter fodder farmers try to have lambing in March because breeding ewes can go to pastures and have more milk for lambs.

In Georgia lambs are basically fed by milk and some barley for several months.

After the end of an active lambing period shepherds split flocks into small (400 – 450) sheep groups and lambs are taken to pastures that began eating independently. At this time is necessary to make all

necessary vaccinations. In April, 21 days before movement to summer pastures, sheep must be vaccinated against anthrax that is the most dangerous disease.

In April shearing of sheep begins. Weight of aTushuri Sheep wool is over 1, 5kg in case of ewe and over 3kg in case of ram. Sheep is sheared manually by “Dukardi”, by old type of shears. Each man can shear over 35 sheep however this number can be increased up to 120 sheep in case of use of electric shearing machine. Shepherds prefer shearing by old method because in this case loss of wool is less. Additionally electric shearing machine often damages leather.

Few days before moving sheep to summer pastures shepherd wash sheep in liquid against external parasites: water mixed with chemical liquid (Diazine) in a 10m long special pool, shepherds drop sheep in this pool, sheep swims to the end of the pool and come out of the liquid.

5. SHEEP MOVEMENT ROUTE AND MOVEMENT PROCESS

30-40 years ago, the order of herd transhumance was determined by Sortition within shepherds, this was the way to define whose herd will move first. By now this process is chaotic and mainly when transhumance starts depends on whether snow in highlands - in Summer pastures has melted or not.

Sheep movement route passes through 4 regions of Georgia and includes 20 municipalities. Its overall area is 13, 400, 7 ha and total length is 11, 874, 6 km.

Having sheep movement route in conditions of nomad sheep farming is important. During the soviet times the mentioned route was partially passing through territories of neighbor countries, accordingly after collapse of the Soviet Union the route required some corrections. This problem still has not been solved. Shepherds have to go through many difficulties among winter and summer pastures.

Some village populations also face this problem, for example sheep movement route passes through Tsintskaro Village in Tetrtskaro Municipality. Movement continues over 4 months every year that causes many problems to village population.

Infrastructure of the livestock movement route is completely disordered. Disinfection barriers at minimum 7 places along the routes must be arranged basically in Kakheti and Kvemo Kartli territories; Sheep movement intensively at specific parts of the route must be considered and accordingly number of required disinfection pools must be identified; together with the pools disinfection barriers and water points must be arranged, for example there is no water at all along the movement route near Georgia-Azerbaijan border, on the south of Iormugalo village. This is a part of the rout on which sheep has to move 2 days. It is also important to have resting points in every 10km distance otherwise there is a risk of weakening or death of animals.

Common System Control of the movement route, which will be managed by a permanent agency, is necessary. It is also necessary to control consecutiveness of movement in order to not to overload pastures and necessary infrastructure and also to avoid traffics.

Monitoring of movement routes is also necessary in order to protect pastures belonging to villages near the movement routs and avoid conflicts between shepherds and village populations.

Veterinary Control role is also huge in movement process. Sheep cannot move without appropriate vet treatment which includes necessary vaccination against dangerous diseases. Sheep has to move along 300km distance from winter pastures to summer pastures and there is a risk of carrying of diseases that could spread in villages located on or near the movement route. Therefor regular vaccination should be carried out in these villages, 20-21 days before the transhumance starts.

Currently an infrastructure of the movement routs is completely disordered. Rehabilitation of the infrastructure is very important for development of Georgian sheep farming. Veterinary points and small quarantine zones must be arranged on the routs. There are many cases of death of sheep on the movement routs so it is also necessary to provide portable crematoriums.

It also should be considered animal movement beside sheep includes the cattle as well. In each herd 100-200 heads of cattle goes through the route with sheep. Therefore when planning above mentioned arrangements, it's essential to consider what type of animals transhumance involves. For example when planning bathing points it should be designed not only for sheep but for cows and other cattle as well.

Besides, there are cases very when dogs stay away from herd because of the difficulty of the route. Stray dogs in this kind of cases threat to the population and are the source of spreading various diseases.

A special attention must be paid to providing animal regular vaccinations and veterinary services for the populated areas nearby the Animal Movement Route. There are approximately 90 settlements where the animal movement route goes through, for example Tsintskaro and Khaishi Villages - Tetrtskaro municipality, the town Tetrtskaro and Tsalka, Gamarjveba Village - Dedoplistskaro municipality, Tibaani Vilage – Sighnaghi municipality etc.

Photo: The herd in Tsintskaro village, Kvemo Kartli



Almost in every spring, the river Algeti located near the town Marneuli, Kvemo Kartli region is flooding because of frequent rains. The animal movement route passes through this river, however, as there was no bridge shepherds had to violate the route and go through the central highway of Marneuli, which caused traffic jams and insanitary. The problem was solved in 2012 after the bridge was renovated. In 2013 animal movement route did not take place central road of Marneuli.

Summer Pastures in Georgia are located in highlands, from 1, 700 to 2, 800m above the Sea Level, where grass surface is rich and nourish. No stalls for cattle are arranged there. There are only areas fenced with rocks or/and wires for to stay overnight. In those farms where milking sheep are placed in smaller area capacity of which is over 100 sheep (called “BERA”), in this condition it is easy to catch them and avoiding mixing them with other sheep. These spaces are not roofed. Shepherds and their family members live in tents that are called “ALACHOKHI”.

Ewes and lambs must be separated at the summer pastures. Part of the shepherds which practice dairy sheep begin milking, and the other part begin drying sheep. Currently dairy sheep is practiced only in Tusheti; they produce traditional cheese in bag made by sheep leather. The most of the part of the farmers do not produce cheese and milk, they believe that the earlier sheep dries the earlier it recovers its shape in order to survive winter and will bring up a good lamb.

Livestock vaccination and treatment against internal and external parasites is also very important during being at the summer pastures. Very dangerous diseases can be spread through the internal parasite such as piroplasmosis that often cannot be treated timely because there is no access to vet services at the summer pastures and shepherds do not have appropriate vet education, additionally they cannot identify symptoms of diseases causing death of animals even in cases than diseases are easy to treat.

During being at the summer pastures in July shepherds begin shearing lambs. From 1 to 1, 5kg of wool in average is obtained from 1 lamb. Ewes and rams are sheared 1 month later, in August.

After shearing in case if a farmer is going to have early lambing, they mix ewes and rams that were separated before. In this way rams do not bother ewes so they keep more energy weight. From September-October shepherd begin moving sheep to winter pastures during which period is also important to treat sheep against external/internal parasites, also against blackleg, and other infections in order to avoid complications that can appear at the time of lambing.

6. SHEEP CARE EXPENSES

In the tables below are given expenses and profits that sheep farmers have in case of having 1, 000 sheep.

A sheep farmer who has his own pasture and over 1, 000 sheep requires 800 ha of winter pasture for which he pays annual tax 1, 200 GEL. For the same number of sheep minimum 350 ha of summer pasture is required. In this case tax for a summer pasture is 5, 250 GEL. So the farmer has to pay 17, 250 GEL for pastures.

A sheep farmer who does not own pasture pays from 25 to 30 GEL/ha instead of 15 GEL. Accordingly an expense for winter pasture in case of 1, 000 sheep 20, 000 GEL and expense for summer pasture is 8, 750 GEL. The total land tax in this case is 28, 750 GEL.

For 1 000 Ewe	Own land expenses	Rented land expenses
Winter pasture	800 ha	800 ha
Summer pasture	350 ha	350 ha
Land tax per ha	15 GEL	25 GEL
Total land tax	17 250 GEL	28 750 GEL

Additionally from 300 to 400gr/day of barley is necessary for one sheep in winter period (300grX60days = 18kg. 18kgX0, 5GEL = 9 GEL) and for 1, 000 sheep is required barley costing over 9, 000 GEL.

Necessary vaccinations and other vet treatment costs 9 GEL/sheep. So for 1, 000 sheep it is 9, 000 GEL; Movement expenses – 2,500 GEL; Salt – 1, 000 GEL.

Salary for employed staff for 1, 000 sheep is 29, 000 GEL: 6 shepherds are required for 1, 000 sheep during 5 months after lambing. Monthly salary of each shepherd is 500 GEL, accordingly 15, 000 GEL for shepherds for the mentioned period. 4 shepherds are required during the rest 7 months so total payment for them is 14, 000 GEL.

Expenses connected with death of sheep and other unforeseen expenses compose **5, 000 GEL/year**.

The tables for additional and total annual expenses see below.

Additional expenses – for 1 000 ewe	
Fodder expenses	9 000 GEL
Vaccination/vet treatment	9 000 GEL
Movement expenses	2 500 GEL
Salt	1 000 GEL
Labor expenses	29 000 GEL
Total expenses	50 500 GEL

Total annual expenses for 1 000 sheep care	
Sheep Farmer with own pastures	67 750 GEL/year;
Sheep farmer who rents pastures	79 250 GEL/year;

6.1 ADDITIONAL NUTRITION FOR EWE

The following table shows portion of additional nutrition which is necessary in order to keep sheep in a normal condition. During lambing ewe requires special nutrition in order to keep milk enough milk for lamb:

Lactating ewe portion

Nutrition title	Feeding period		2 nd period of feeding	
	1 st month	2 nd month	1 st month	2 nd month
	Nutrition quantity in kg.	Nutrition quantity in kg.	Nutrition quantity in kg.	Nutrition quantity in kg.
1) Hay (cereal)	0.8	0.5	0.4	0.3
2) hay (leguminous)	0.8	0.5	0.4	0.4
3) silage (maize)	2.0	2.0	2.0	2.0
4) concentrates	0.3	0.3	0.3	0.3

5) karbamide, gr	14.0	-	10	-
6) Phosphoric acid, salt(gr)	-	-	-	7
Total Nutrition unit:	1.59	1.27	1.17	1.11

Pregnant ewe portion

Nutrition title	1 st period of pregnancy	2 nd period of pregnancy
	Nutrition quantity, kg	Nutrition quantity, kg
1) Hay (Lucerne)	0.8	1.0
2) silage (maize)	2.0	2.5
3) concentrate	0.2	0.250
4) karbamide (gr)	10	8
5) Phosphoric Acid (gr)	5	7
Total nutrition unit:	1.03	1.28

* Comment: during the last month of pregnancy silage must be substituted by hay and concentrates.

7. REVENUE FROM SHEEP SALE

Price of a sheep/lamb in the Georgian market starts from 150 GEL. Below is provided information concerning the following:

- Prime cost of Georgian sheep including annual expenses for a 1, 000 sheep owner.
- Annual income of the same farmer including pastures (own or rented).

Death rate of lambs born by 1, 000 ewes is 15%. Also an owner has to keep some female lambs due to farther reproduction. Accordingly in case of 850 lambs born the farmer can sell only 600.

Revenue from Sheep Sale for a 1, 000 Sheep Owner				
Capacity		Available for Sale	Price	Revenue from sales
Lambs	850 heads	600 heads (30-40kg)	150 GEL	90 000 GEL
Wool	4 000 kg	4 000 kg	1. 2 GEL/kg	4 800 GEL
Total sale				94 800GEL

So prime cost of sheep for sale for a farmer who owns pastures is 110. 4 GEL and for an owner who does not own pasture is 130.4 GEL accordingly their approximate annual profit is 28, 050 GEL and 16, 550 GEL respectively.

	Sheep Farmer who Owns Pasture (1000 sheep)	Sheep Farmer who doesn't Own Pasture (1000 sheep)
Total expenses	67 750 GEL/year	79 250 GEL/year
Profit	28, 050 GEL/year	16, 550 GEL/year

8. GEORGIAN SHEEP MARKET

8.1 THE INTERNAL MARKET

According to National Statistics Agency in 2011 production of sheep and goat meat in Georgia was 4, 000 tones. It has been known that weight of meat of one Georgian sheep is 15kg in average. If we consider official statistics 260, 000 sheep was slaughtered for the local market in Georgia during 2011. Here, we one more time face inaccuracy of official statistics: Sheep export from Georgia has begun in in spring of 2012; accordingly there was no sheep export in 2011. So if the total number of sheep in the country was 576, 800, 150, 000 was exported and number of ewes was 407, 700 than 19, 100 sheep left in Georgia instead of the 260, 000.

Sheep slaughterhouses have been operating in Georgia since 2012 and they are basically focused on export. The local market does not require a special certificate (so called certificate N2) for sheep sale and accordingly it is impossible to calculate number of sheep slaughtered for the local market in the country during a year.

We guess that number of sheep slaughtered during a year is 50, 000 that are basically purchased by Muslim population of Georgia. Mutton is not very popular in among Georgian people. There are no restaurants in Georgia offering any meal cooked by mutton.

In the Georgian market price of sheep is from 100 to 200 GEL. Price depends on sheep quality and period of a year. Currently price of mutton is 9 or 10GEL/kg.

High number of sheep is sold at Marneuli (Sunday), Iormugalo (Friday) and Kabali (Thursday) markets by farmers and re-sellers.

Tushuri Leather Bag Cheese, which is produced in eastern Georgia in a traditional way, is sold well in the local market. This kind of cheese is produced by unskimmed milk. It requires a sheep leather bag therefore sheep is fleeced in a special way called "GUDURI". This is a way when leather is not cut along stomach. Then leather is placed on forked sticks in order to dry it well. Before making a bag leather must be sheared, soften in water and ripped places must be filled. Tail side stays opened in order to put there cheese but other opened parts must be tied up with rope. In the end the bag must be turned inside out so that wool side of the leather appeared inside.

Traditional leather bags have been substituted by polyethylene bags because it makes the job easier however taste of cheese made in the modern way has different taste.

Retail price of 1kg of leather bag cheese is from 15 to 20GEL and wholesale price is from 9 to 12GEL/kg.

Sheep Leather Bag Cheese production is an unhygienic process that makes it less popular.

Georgian sheep is mainly exported in the following countries: Libya, Lebanon, Syria, Jordan, Iran, Saudi Arabia, Egypt, Azerbaijan, Qatar, Kuwait, Iraq, United Arab Emirates, Oman and Israel.

Additionally, it has to be mentioned that Georgian sheep is popular in these countries because of fat tail (Tushuri sheep). This type of sheep is popular in the mentioned countries because it is very similar to Syrian Avass sheep which is very popular and expansive in Muslim countries. Price of Australian Merinos mutton is \$8/kg, price of Avass \$15/kg, price of Tushuri mutton hesitates between the mentioned prices. Huge work has to be done in order to keep this price at these markets (export, quality and veterinary issues).

In 2009 foreign businessmen became interested in Georgian sheep because of its low price (from 50 to 60GEL). During that time Georgia was exporting sheep only in Azerbaijan.

Since 2009 due to competition and increased demand price of Georgian sheep has increased by 2, 5. In 2010 Iran became interested in Georgian sheep. Iran is a second big sheep market after Saudi Arabia.

In 2010 price of live sheep in Georgia was from 130 to 180 GEL and export price from \$95 to \$110. In 2011 price on Georgian sheep increased again despite closing of Iranian market for Georgia. The market was closed due to export of diseased sheep that was a fault of the government of Georgia. Prices were increased due to the following reasons: price of check for brucellosis increased and became 5 GEL (was 2 GEL); increased price for petrol, land tax for pastures (before it was 3 GEL/ha, now it is 15 GEL + 15 GEL for highland pastures); and decreased rate of US Dollar.

Information provided above is proved by various information concerning reduce of number of those interested in purchasing of Georgian Sheep¹. Currently clients from Muslim countries are interested in purchasing of Georgian live sheep during religious celebrations, during this period price and demand on Georgian sheep increases, in other cases sheep price remains low.

In Georgia not everyone knows that protein content rate in mutton significantly exceeds protein content rate in pork. Mutton fat contains 29mg% of cholesterol while beef fat contains 75mg% and pork fat from 75 to 126%. Mutton also contains calcium and phosphorus. Content of micro elements in mutton is significantly more than in other animals' meat.

We believe that information campaign due to popularization of Georgian Sheep will support to increase of sales in the local market.

As for Georgian sheep wool, it was sold only in Azerbaijan but since 2011 it has been exported in Turkey. Currently there is demand on Georgian wool in India as well.

Georgia has a capacity of 1, 700, 000 kg of wool production. This amount is not enough for modern washing factory which process 7, 000, 000 kg of wool/year however it would be enough for small processing factories. Wool collection centers must be opened where wool will be stored, fumigated, pressed and sent for export.

The last research concerning identification of dairy productivity of the Georgian sheep was carried out in 1947. According to data average annual lactation per sheep was 48kg. Minimum lactation was 5kg and maximum 165kg. 30kg out of 48 kg was spent for lamb feeding and 15 for leather bag cheese production which is about 3kg of cheese/sheep.

¹ http://saqinform.ge/index.php?option=com_content&view=article&id=395:2010-09-08-14-38-27&catid=99:actual1&Itemid=419#axzz2LnvNfjgM

Three parties participate in export of Georgian sheep: 1) A producer 2) An Exporter 3) A Purchaser (normally foreigner).

A Producer, Sheep Farmer is a person who produces and sells sheep. These kinds of farmers normally do not participate in the process of export. They sell sheep locally, on site.

An Exporter normally is an individual or a physical body. His activities are connected with carrying on of live sheep export procedures, with correct performance of these procedures. They do not participate in any activities connected with sheep care. They purchase sheep from sheep farmers and sell them in Free on Board (FOB) or Coast Insurance Freight (CIF) conditions.

A Purchaser is a representative of foreign country a legal body who has a right to bring live animal in a country.

Import Requirements is a list of requirements performed by a vet service of an exporter country which issues a certificate. This certificate is normally issued by NFA in Georgia. In the mentioned certificate must be mentioned number of days required for quarantine of sheep before export. It could be from 2 to 30 days. According to requirement of United Arab Emirates it is 21 days. An exporter must inform a representative of NFA concerning a place of quarantine. NFA representative is obliged to check sheep during quarantine several times. An exporter pays quarantine registration fee – 0, 20GEL/sheep. Georgian sheep is popular in Arabic Countries because it looks like and very similar to Syrian Avass sheep breed. Political situation in Syria is not stable and therefore demand on Georgian sheep has increased however sheep exporting potential in Georgia has decreased due to the aforementioned problems.

In 2009 Georgia exported 266, 244 sheep; in 2010 – 178, 000 sheep; in 2011 – 150, 000 sheep; in 2012 – 120, 000 sheep.

Reasons for decrease of exports are:

- Last few winters in Georgia were quite severe especially in 2012. During almost 3 months was freezing and pastures were covered by snow. Farmers sad that there was double rate of death of lambs (from 20 to 40%). Normally death rate is from 10 to 20% during winter.
- In 2009 exporters were purchasing old sheep as well due to low price nobody recently this interest has been disappeared.
- Georgian sheep farmers have been less caring about sheep health and production quality that has damaged reputation of Georgian sheep.
- Sheep in Georgia is not sold according to its weight. Foreign purchasers are not happy with this kind of tendency because sheep loses its weight during transportation.

9. CONCLUSIONS AND RECOMMENDATIONS

9.1 SHEEP DEVELOPMENT PROBLEMS IN THE COUNTRY

- Non-existence of the modern technologies (this field is fully base on traditional technologies of 18th and 19th centuries in Georgia).
- Currently sheep farming is a high risk sphere. Insurance companies refuse to insure this business and also banks refuse to issue credits for it.
- Selection of Georgian sheep breed is not carried out.
- Deficit of qualified vet doctors and animal technicians. (average age of vet doctors in Georgia is 52)

- Training of qualified staff is also a problem; level of education does not meet modern demands and needs. Appropriate infrastructure does not exist in Georgia.
- There is no experimental-demonstration farm in the country. Foreign sheep breeds are not brought and tested in Georgia.
- Registration and demarcation of sheep movement routes has to be finished. Washing points, disinfection barriers, quarantines, drinking points and other infrastructure must be arranged. (Sheep Movement Route was passing through Tsintskaro Village in Tetrtskaro Municipality along 5km distance during many years. Over 25 flocks were passing through this village daily and this process was continuing during 3 months per year. Accordingly the local population had to live in conditions of bad small and insanitary. A special group of the Ministry of Agriculture has changed direction of the mentioned part of the route however the problem still exists and will exist unless demarcation of this part of the route is made and appropriate services will provide alternative route to shepherds).
- There is no National Programme of Animal Identification in the country due to which epizootic condition is complicated.
- There are problems of wool sale in the country (since 2012 demand on wool is increased however it is necessary to establish appropriate services and infrastructure).
- There is no Sheep Milk Collection Centers in the country where high quality cheese could be made while existing Sheep Leather Bag Cheese made in household conditions is harmful for human health because it is made in bad hygiene conditions.

9.2 MEASURES TO BE TAKEN

- **It is important to establish experimental-demonstration farm in the country** which will provide protection of Georgian sheep breed in way of proper selection and where foreign sheep breeds will be tested. This kind of farm has to be funded by the state or donor organizations. Foreign sheep breeds must be brought in Georgia in order to check how adopted they are to Georgian natural conditions. Capacity building courses of sheep farmers must be carried out.
- We believe that free of tax minimum in agriculture sphere which is 200, 000GEL must be increased to 500, 000 or must be fully cancelled. In this case farmers will not doubt expansion of their businesses especially now, when government of Georgia is considering legislative amendments concerning cooperative farming which will allow farmers to unite their production power.
- Development of Sheep Farmers Unions is of paramount importance in order to protect their interests, involve them in various projects, relations with donors.
- Increase of Export Potential is very important. An exporter is not a sheep farmer, he may have other source of income as well and his participation in sheep export may be a temporary business. If Georgia loses any more export markets it would of course cause some economic damage of the exporter however economic damage of sheep farmers, who's main and only income is sheep farming, would be much greater. Due to non-existence of export sheep farmers will not be able to sell their products in the local market due to low demand and this sphere will be destroyed in Georgia.
- In those regions and municipalities where sheep farming has been practiced (Dedoflistskaro, Akhmeta, Signagi, Sagarejo, Gardabani, Marneuli Tsalka, Dmanisi, Ninotsminda, Akhalkalaki and Aspindza) local private vet services must be established which will be equipped by modern equipment.
- **Sheep Farmers have to receive trainings concerning veterinary.** They must be able to timely identify diseases. Often farmers do not address vet doctors due to lack of finances, accordingly after trainings they will be able to solve some vet problems by themselves.
- **Infrastructure and management of Sheep movement Routs must be urgently organized.** It will allow shepherd to move safely and avoid conflicts with village population as well as spread of diseases.

- Export of sheep which is not vaccinated against Foot and Mouth disease must be prohibited because Georgia is under the risk of spread of this disease due to its neighbor countries. This vaccination must an obligation all over the country otherwise the country will lose an opportunity of sheep export for several years.
- **Wool sale and export must be supported.** First of all we need a state support on the international level in popularization of Georgian wool. Sheep Farmers Association of Georgia published an announcement concerning Georgian wool on one of the information portals last year (www.woolnews.net) that had a various responses and as a result we exported wool in Turkey. This event had a result: traders that were purchasing wool for low prices became obliged to increase prices. This year wool cost twice more than last year. We believe that we have to more actively work with the mentioned portal.
- **It is important to develop infrastructure of additional nutrition production. It is also necessary to carry out target programmes in the way of co-financing (additional nutrition is important for sheep in winter. In winter of 2012 due to lack of additional nutrition over 40% of sheep have died).**
- Georgia with its location and natural resources can be a leader of mutton markets of Muslim countries if problems concerning transportation will be resolved.
- **Exporters must offer sheep prices according to weight.** We believe that some trainings and capacity building courses for exporters in order to teach them various bank products so later they will be able to correctly export products to markets.

9.3 EXPECTED REPERCUSSION

If all the aforementioned measures will be taken, Georgia will receive a profit from sheep farming. According to data provided by National Statistics Agency of Georgia the money received from sheep export in 2009 was 17 054 000 USD; in 2010 - 7 843 000 USD and in 2011 – 2 921 000 USD;

All these results were reached despite the fact that before 2009 there was not conducted any activities by governmental or nongovernmental organizations for finding markets for Georgian sheep. Therefore, if the Georgian Government becomes interested in sheep farming development and implements purposeful projects, this sphere will defiantly become one of the main directions of Georgian Agriculture's livestock sector.

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ANNEX 1

Table 1. Number of Sheep & Goat, Data of Statistics National Agency:

წლები Year	მსხვილფეხა რქოსანი პირუტყვი Cattle	მათ შორის ფური და კამეჩი Of which milkers	ღორი Pigs	ცხვარი და თხა Sheep and Goats
1986	1634.7	645.8	1150.4	1938.5
1987	1584.8	626.1	1117.8	1920.5
1988	1547.8	620.2	1099.2	1894.0
1989	1426.6	587.8	1027.8	1833.5
1990	1298.3	551.7	880.2	1618.1
1991	1207.9	542.9	732.5	1469.6
1992	1002.6	502.0	476.2	1191.6
1993	928.6	486.5	365.1	958.1
1994	944.1	514.4	366.9	793.3
1995	973.6	531.3	352.6	724.8
1996	1008.0	543.6	332.5	652.0
1997	1027.2	551.0	330.3	583.5
1998	1050.9	575.0	365.9	586.7
1999	1122.1	640.1	411.1	633.4
2000	1177.4	646.3	443.4	627.6
2001	1180.2	678.3	445.4	659.2
2002	1216.0	704.8	446.1	699.5
2003	1242.5	728.0	473.8	722.2
2004	1177.9	705.4	483.9	804.9
2005	1190.6	709.9	455.3	815.3
2006	1080.3	591.2	343.5	789.2
2007	1048.5	541.0	109.9	797.1
2008	1045.5	560.6	86.4	769.4
2009	1014.7	537.6	135.2	673.8
2010	1049.4	561.7	110.1	653.9
2011	1087.6	587.7	105.1	630.4

ANNEX 2

Table 4. Shares of Family holding and agricultural enterprises in livestock numbers, Statistics National Agency Data, 2011:

ცხრილი 3.3. ოჯახური მემურნობებისა და სასოფლო-სამეურნეო საწარმოების წილები პირუტყვის სულაღობაში
(წლის ბოლოსათვის, პროცენტობით)

TABLE 3.3. SHARES OF FAMILY HOLDINGS AND AGRICULTURAL ENTERPRISES IN LIVESTOCK NUMBERS
(as of end of year, as percentages)

	ოჯახური მემურნობების წილები			Shares of family holdings		
	2007	2008	2009	2010	2011	
მსხვილფეხა რქოსანი პირუტყვი	99.6	99.8	99.3	99.7	99.7	Cattle
მათ შორის ფური და ფურკამეჩი	99.6	99.9	99.6	99.6	99.8	Of which milkers
ღორი	99.4	99.8	100.0	99.4	99.6	Pigs
ცხვარი და თხა	98.2	97.8	94.9	96.6	95.7	Sheep and goats
ფრინველი	78.5	76.9	79.3	76.7	72.6	Poultry
ფუტკრის ოჯახი	100.0	99.8	99.7	99.9	99.8	Beehives
	სასოფლო-სამეურნეო საწარმოების წილები			Shares of agricultural enterprises		
	2007	2008	2009	2010	2011	
მსხვილფეხა რქოსანი პირუტყვი	0.4	0.2	0.7	0.3	0.3	Cattle
მათ შორის ფური და ფურკამეჩი	0.4	0.1	0.4	0.4	0.2	Of which milkers
ღორი	0.6	0.2	0	0.6	0.4	Pigs
ცხვარი და თხა	1.8	2.2	5.1	3.4	4.3	Sheep and goats
ფრინველი	21.5	23.1	20.7	23.3	27.4	Poultry
ფუტკრის ოჯახი	0.0	0.2	0.3	0.1	0.2	Beehives

ANNEX 3

Table 5. Numer of sheep by regions, Statistics National Agency Data, 2011:

ცხრილი 3.8. ცხვრის სულაღობა რეგიონების მიხედვით
(წლის ბოლოსათვის, ათასი სული)

TABLE 3.8. NUMBERS OF SHEEP BY REGIONS (as of end of year, ths. heads)

	2007	2008	2009	2010	2011	
საქართველო	711.0	690.0	602.3	596.8	576.8	Georgia
მათ შორის:						Of which:
მცხეთა-მთიანეთი	67.0	79.8	50.0	43.6	40.7	Mtskheta-Mtianeti
კახეთი	313.9	300.2	269.4	276.0	294.3	Kakheti
ქვემო ქართლი	210.1	206.8	131.8	149.1	123.2	Kvemo Kartli
სამცხე-ჯავახეთი	72.8	61.7	87.4	74.8	72.2	Samtskhe-Javakheti
დანარჩენი რეგიონები	47.2	41.5	63.7	53.3	46.4	The remaining regions

ANNEX 4

Table 6. Production of sheep and goat meat by regions, Statistics National Agency Data, 2011:

ცხრილი 3.20. ცხვრისა და თხის ხორცის წარმოება რეგიონების მიხედვით (დაკლულ წონაში, ათასი ტონა)

TABLE 3.20. PRODUCTION OF SHEEP AND GOAT MEAT BY REGIONS
(in slaughtered weight, ths. tons)

	2007	2008	2009	2010	2011	
საქართველო	7.5	7.5	4.1	4.9	4.0	Georgia
მათ შორის:						Of which:
მცხეთა-მთიანეთი	0.7	0.8	0.4	0.4	0.3	Mtskheta-Mtianeti
კახეთი	3.1	3.3	1.8	2.1	1.9	Kakheti
ქვემო ქართლი	2.3	2.2	1.1	1.0	0.8	Kvemo Kartli
სამცხე-ჯავახეთი	0.9	0.7	0.5	0.7	0.5	Samtskhe-Javakheti
დანარჩენი რეგიონები	0.5	0.5	0.3	0.7	0.5	The remaining regions

ANNEX 5

Table 7. Average litter of kids and lambs per 100 females by region, Statistics National Agency Data, 2011:

ცხრილი 3.35. თიკნისა და ბატკნის საშუალო ნამატი 100 დედა პირუტყვისაზე რეგიონების მიხედვით (სული)

TABLE 3.35. AVERAGE LITTER OF KIDS AND LAMBS PER 100 FEMALES BY REGIONS (heads)

	2007	2008	2009	2010	2011	
საქართველო	105	102	105	105	97	Georgia
მათ შორის:						Of which:
მცხეთა-მთიანეთი	99	97	99	90	86	Mtskheta-Mtianeti
კახეთი	107	103	105	112	96	Kakheti
ქვემო ქართლი	104	100	106	100	98	Kvemo Kartli
სამცხე-ჯავახეთი	107	105	107	96	104	Samtskhe-Javakheti
დანარჩენი რეგიონები	106	107	106	112	102	The remaining regions