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Project of the Sustainable Management of Pastures in Georgia to Demonstrate Climate Change Mitigation and Adaptation Benefits and Dividends for Local Communities

**STRENGTHENING POLICIES FOR PASTURES MANAGEMENT IN GEORGIA:
GAP ANALYSIS, INTERNATIONAL GOOD PRACTICE, AND PROPOSED ROADMAP**



FINAL REPORT

JULY 2016

DISCLAIMER



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Acronyms

APA	Agency for Protected Areas
ASP	Agency of State Property
ENPARD	European Neighborhood Programme for Agriculture and Rural Development
EU	European Union
GEF	Global Environment Facility
GEL	Georgian Lari
GIZ	German International Cooperation
ICC	Information Consultancy Center
IFAD	International Fund for Agricultural Development
LEPL	Agricultural Research Center
MoA	Ministry of Agriculture
MoEP	Ministry of Environment Protection
MoESD	Ministry of Economy and Sustainable Development
MRDI	Ministry of Regional Development and Infrastructure
NACRES	Centre for Biodiversity Conservation and Research in Georgia
NAPR	National Agency of Public Registry
NDVI	Normalized Differenced Vegetation Index
PA	Protected Area
REC	Regional Environment Centre
SAVI	Soil-Adjusted Vegetation Index
SCO	Swiss Cooperation Office
SDC	Austrian Development Cooperation
SNC	Second National Communication
TNC	Third National Communication
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention for Climate Change
VPAs	Vashlovani Protected Areas
WWF	World Wildlife Fund

1. Introduction

The EU/UNDP Project “*Sustainable management of pastures in Georgia to demonstrate Climate Change mitigation and adaptation benefits and dividends for local communities*” aims at the rehabilitation of pasturelands and the introduction of sustainable grazing practices in Georgia, and includes a pilot action focusing on one particular pasture area (Vashlovani Protected Areas, Dedoplistskaro Region). This project is one of the first projects solely dedicated to issues related to pastures management in Georgia, and has initiated a policy dialogue on pasture management at the national level with concerned stakeholders. To facilitate this dialogue, the project regularly holds meetings with stakeholders involved in pasture management in view of sharing experience, information and future plans in order to identify cross-cutting issues at the policy level for promoting sustainable land management.

It was thus proposed to call upon the Project to identify key policy gaps related to pasture management in Georgia and to provide recommendations for addressing them, through the preparing a policy package for governmental and other key national stakeholders.

The objective of this report is to provide an overall description of the current situation of pasture management systems in Georgia, and the legal, policy and institutional aspects governing the pastures. It also provides an overview of key on-going programmes and initiatives related to pastures management in Georgia and recommendations of measures needed to strengthen national policy for pastures management. The report summarizes the key policy gaps for pastures management and proposes a roadmap for action.

This report is based on a desk research and a series of consultation meetings conducted between December 2015 and June 2016 as well as a review of good international practices related to the situation in Georgia and covers the following aspects:

- Definition of pastures and pastures management;
- Description of pastures and the livestock sector in Georgia;
- Analysis of the legal, policy and financial gaps related to pastures management and key recommendations to address the policy gaps;
- Proposed Roadmap for responding to policy gaps at the national and local level.

This report constitutes a basis for discussions and consultation with all concerned stakeholders in view of establishing an agreed “**Roadmap for Strengthening Policies for Pastures Management in Georgia**”.



Figure 1. A sheep migratory route (Photo: Antonio di Vico/UNDP. 2014)

2. Definitions and applications of Pastoralism and Pastures Management

Definitions of pastoralism are generally nested in the classifications of livestock systems and agricultural systems (refer to **Box 1**). The classifications of pastures have used different parameters¹ including:

- crop production;
- animal-land relationship;
- relationship with agro-ecological zoning;
- intensity and type of production, size and value of livestock holdings;
- distance and duration of animal movement;
- types and breeds of animals kept;
- economic specialization and market integration of the livestock enterprise; and
- degree of household dependence on livestock.

Box 1. Definition of Pastoralism in Kenya's National Policy for the Sustainable Development

The 2012 policy for the development of Kenya's arid and semi-arid lands² defines pastoralism as follows: "both an economic activity and a cultural identity, but the latter does not necessarily imply the former. As an economic activity, pastoralism is an animal production system which takes advantage of the characteristic instability of rangeland environments, where key resources such as nutrients and water for livestock become available in short-lived and largely unpredictable concentrations.

Crucial aspects of pastoralist specialization are:

1. The interaction of people, animals and the environment, particularly strategic mobility of livestock and selective feeding; and
2. The development of flexible resource management systems, particularly communal land management institutions and non-exclusive entitlements to water resources.

The definition of pastoralism within the new development paradigm has emphasized two key aspects related to pastoralism which are "**Mobility**" and "**Types and breeds of animals**"³.

Mobility distributes grazing pressure and helps tracking variability of nutrients at larger scales. Mobility also promotes feeding selectivity in livestock (refer to **Box 2**). **Livestock capable of feeding selectively target only the most nutritious bites on the range, and are thus more productive. Therefore the most economically successful strategy is also the most ecologically sustainable.**

This understanding of mobility-based strategies in pastoral production has nullified the economic argument that used to be associated with policies of sedentarisation. Although previously seen as the first step of pastoral development, sedentarisation of pastoralism is now clearly understood to be counter-productive and as a factor contributing in reducing pastoral productivity and ecological sustainability, as well as being problematic for food security, land degradation and even gender.

¹Otte, M. J. and Chilonda, P. 2002. Cattle and small ruminant production systems in sub-Saharan Africa. A systematic review, Livestock Information Sector Analysis and Policy Branch, FAO Agriculture Department, Rome.

²Republic of Kenya. 2012. Sessional Paper No. 8 of 2012, on National Policy for the Sustainable Development of Northern Kenya and other Arid Lands, 'Releasing Our Full Potential', Ministry of State for Development of Northern Kenya and Other Arid Lands, Republic of Kenya, Nairobi.

³FAO/IFAD. 2016. FAO's and IFAD's Engagement in Pastoral Development. Joint Evaluation Synthesis. Report No. 3909

Box 2. Pastoral mobility reflected as a legal right

Pastoral mobility is protected as a crucial economic and ecological asset in the pastoral codes of several countries including Mauritania in 2000, Mali in 2001, Niger in 2010 and Chad in 2014.

The Pasture Law of the Kyrgyz Republic of 2009 include the following key elements which are covering mobility to a large extent:

- i. delegation of pasture management responsibility to community-based inclusive and representative committees;
- ii. a shift in the system of pasture rights allocation, from area-based to a system using 'pasture tickets' to determine the number of animal grazing days and the grazing routes; and
- iii. integrated management of low, middle and upper altitude pastures to allow better seasonal movement of livestock.

The “Types and breeds of animals” classifications have also evolved and should no longer reflect the assumption of modern breeding as ‘normality’ (e.g. with all breeds ranked in relation to improved ‘high-performing’ breeds).

Observation of pastoral breeding systems have highlighted the strategic economic use of a variety of specialized ‘types’ even within apparently homogeneous breeding populations, and the attention for complex behavioral traits in breeding, at the level of the herd such as its capacity for learning, propensity to bond emotionally with the herders, propensity for feeding selectively (refer to **Box 3**).

Box 3. Characteristics of the Tushuri sheep⁴

This 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. With time, Tushuri sheep gained the qualities that made it stress resistant and easily adaptable to changing climate. Due to a “strong knee”, Tushuri sheep is able to travel on a long distance -approximately through 4 000 km yearly. Tushuri sheep are compact with a great construction, they manage to get fed on sparse pastures, they are meaty and wool productivity increases if they eat more. They grow up quickly, have high quality meat and white, bendable, elastic and shining wool which is used for high quality carpet making.



Figure 2. Tushuri sheep

(Photo from: <http://www.agro-group.me>)

⁴Gonashvili et al, 2013. Perspectives on Sheep Farming & the Sheep Market System in Georgia. Prepared with the support of the Swiss Confederation and MercyCorps.

Based on this new paradigm, the basis for the “**sustainable management of natural resources of the pastures**” is also reconsidered and takes into account the fact that pastures dynamics are not linear and reversible: **if high stocking rates lead to overgrazing and rangeland degradation, then low stocking rates do not improve rangeland health**⁵.

The idea that pastoral rangelands are degraded is so ingrained in rural development that it is often taken for granted, in absence of effective evidence and despite the scientific uncertainty and long-standing debate around the scale and nature of the problem⁶. Degraded pastures have been documented to appear as a consequence of limiting pastoral activities and disrupting mobility, inadequate land tenure, and other inadequate policy and institutional changes disruption of customary use patterns of the pastures. While overgrazing can cause degradation of pastures, lack of grazing activities can be equally harmful for keeping the natural assets of the pastures, resulting in unwanted species which can reach infestation stage (refer to **Box 4**). The **effects of climate change and pastures resilience to climate change** is also overlooked as an inherent characteristic of the variability pastures and pastoralism, equally affected by inadequate pastures use patterns.

Box 4. Monitoring Degradation of Rangelands in Kazakhstan⁷

Kazakhstan established a monitoring plan for tracking the status of over-grazed rangelands around villages as well as under-grazed rangelands in distant pastures accounting for the concepts of mobility and variability. The geo-botanical surveys were conducted on a yearly basis between 2009 and 2011 in the sampled areas according to the monitoring protocol. The survey took into account wind erosion and water erosion. Over the 3-years period of targeted interventions in specific areas, the monitoring results showed an overall reduction of the area affected by soil erosion due to over-grazing of 23.35% and an overall reduction of the area affected by unwanted plant species due to under-grazing of 8.6%. The analysis also showed variations in the improvements between the different areas which were related to various reasons including climatic conditions. The results have supported the project in reaching consensus on regulating the use and rotation of pastures, agreements on pastures management were established between Pasture Committees, local authorities and pasture users in the project areas.



Figure 2. Bare soil pastures in Georgia (Photo from Nacres, 2013)



Figure 3. Weed infested pastures in Georgia (Photo from Raaflaub and Dobry, 2015)

⁵Easdale, M. H. and Domptail, S. E. 2014. Fate can be changed! Arid rangelands in a globalizing world. A complementary co-evolutionary perspective on the current ‘desert syndrome’. *Journal of Arid Environments* 100-101: 52-62.

⁶FAO, IFAD. 2016. FAO's and IFAD's Engagement in Pastoral Development. Joint Evaluation Synthesis. Report No. 3909

⁷UNDP-Kazakhstan. 2012. Project for the Sustainable Rangeland Management for Rural Livelihood and Environmental Integrity. Final Evaluation Report. Government of the Republic of Kazakhstan/UNDP/GEF/GIZ

3. Description of Pastures and Pastures Use in Georgia

3.1. Land tenure of Pastures in Georgia

Pastures in Georgia are included under agricultural lands. According to the Strategy for Agricultural Development in Georgia for 2015-2020, agricultural lands accounts for over 3 million ha and constitute 43.4% of the whole territory of Georgia, and includes in addition to arable lands, pastures and meadows⁸.

It is estimated that 25% of Georgia's total land area is classified as permanent pastureland⁹, which represents about 1.7 million ha of Georgia total land area of 6.9 million ha. This confirms the importance of pastures, as they constitute over 50% of the total agricultural lands in Georgia.

Following Georgia's independence, an important part of the agricultural land was privatized although the official status of agricultural land registration remains unclear. To date, there no clear delineation of state-owned, municipal and privately-owned land for agricultural land and only 20-30% of the agricultural lands are officially registered by the National Agency of Public Registry¹⁰. In 2010, with the issuance of the Law of State Property, privatization of pasture was *de facto* stopped; however, some of pasture lands were already acquired by private owners between the independence and the issuance of the Law. The current ownership of pastures is estimated as follows¹¹:

- Private owners: 15% -25%
- Municipalities: 2-5%
- APA: 2% (out of the 7% of the total Protect Areas territory at national level)
- Public Property: 70-80%

Currently, conflicting policies are driving the pastures registration process:

- On one hand, the Agency of State Property (ASP) is conducting a national inventory of all state land, including pastures, in view of strengthening the administration of state property. The inventory is expected to be finalized in September 2016, and ASP is coordinating with municipalities and concerned ministries the registration process of state property.
- On the other hand, the Ministry of Regional Development and Infrastructure (MRDI) is supporting municipalities to register state property, including pastures in view of strengthening the decentralization process in Georgia. This process is aiming at improving revenues of municipalities and is linked to various on-going legal, institutional and financial support to local development.

In addition to conflicting policies on pastures ownership, a recent assessment of pastures management indicated that the current situation of ownership and control is conflicting: The state is the *de iure* owner of the pastures, but the municipalities decide *de facto* about the use of pastures. For example, municipalities can decide which pastures are to be rented out given the municipalities' important capacity for enforcement. The assessment also indicated that the lack of proper registration of state-owned pastures, (i.e. borders and surfaces are not defined, land is not mapped, the lack of documentation and demarcation) is hindering the leasing of pastures, particularly mountain pastures, which are often used informally and free of charge by local or nomadic herders.¹²

⁸MoA 2015. Strategy for Agricultural Development in Georgia for 2015-2020.

⁹USAID, 2010. Property rights and resource governance of Georgia

¹⁰MoA 2015. Strategy for Agricultural Development in Georgia for 2015-2020.

¹¹Based on discussions at the consultation workshop on 24/06/2016.

¹²Martin Raaflaub and Lukas Marek Dobry, 2015. Pasture Management in Georgia. Swiss Cooperation Office for the South Caucasus (SCO)

As such, key policy gaps related to land tenure of pastures can be summarized as follows:

- The current trends in land tenure of pastures prove that, both in the case of centralized and decentralized efforts for the registration of pastures, the objectives of the registration process is mainly driven by fiscal goals, and as a means to increase revenues. Limited thoughts are directed towards improving pastures or reinvesting taxes or leasing profits into the pastures and grazing needs;
- Another aspect of the land tenure trends pertain to the perceived intentions of the Government of Georgia in advancing the registration of agricultural lands (including pastures) with the goal of allowing its privatization¹³. This will also have major ramifications on the use of pastures and on the development of the sector as a whole;
- The importance of clarifying communal land ownership is very essential to regulate pasture use and leasing modalities by municipalities in the light of various experiences of lease agreements through municipalities which did not provide shepherds with acceptable conditions for pastures use;
- The delineation and registration of pastures should take into account the types of pastures, and its potential for hay production as opposed to grazing only.

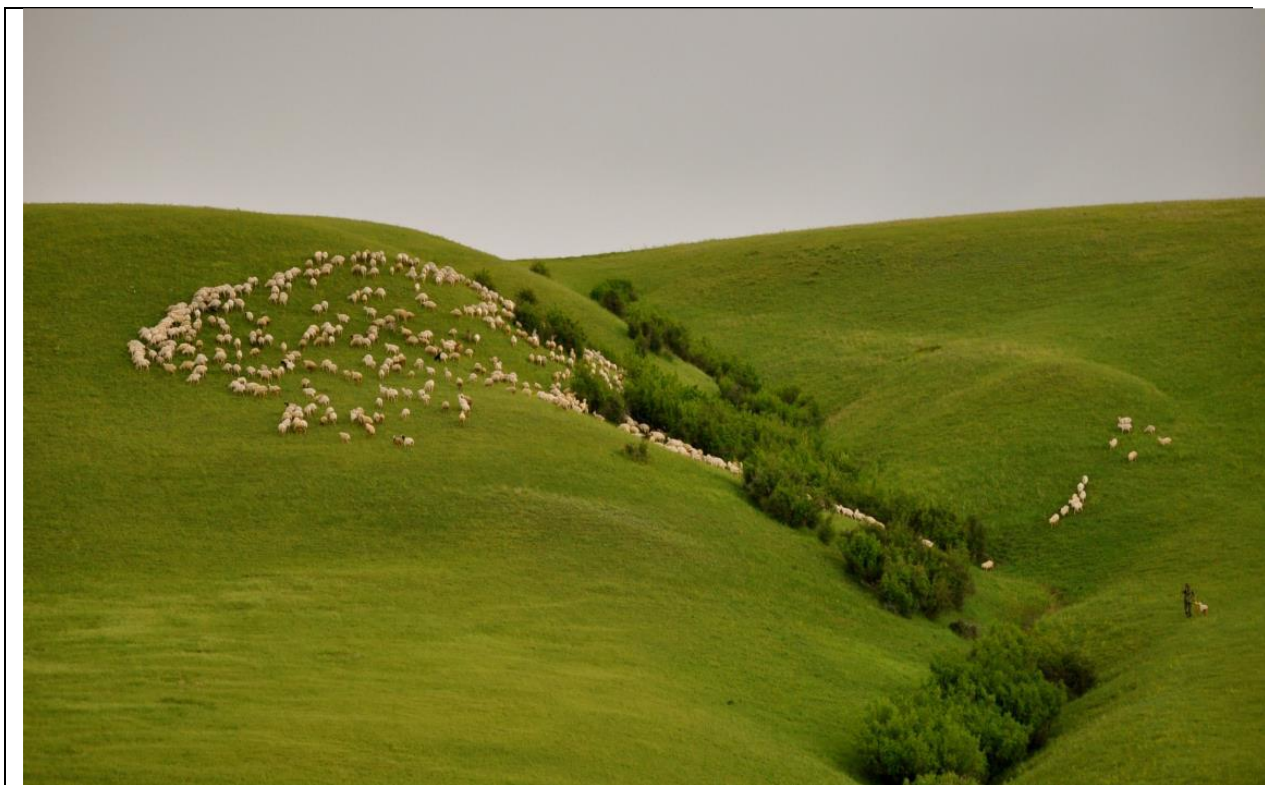


Figure 4. Sheep pasture (Photo from Gonashvili et al¹⁴)

¹³ Government of Georgia (2014): Decree N. 343 on Approval of 2014-2020 Biodiversity Strategy and Action Plan of Georgia

¹⁴Gonashvili et al, 2013. Perspectives on Sheep Farming & the Sheep Market System in Georgia. Prepared with the support of the Swiss Confederation and MercyCorps.

3.2. Costs associated with the use of pastures and livestock production

Officially, the use of pastures in Georgia is mainly regulated through the rights of issuing of lease contracts to shepherds within state owned pastures as well as in the pastures which are already privately owned. In reality, outside the 30% of private-owned pastures, it can be considered that the current practices of pasture use are mainly self-regulated, and are mostly based on old pasture use practices and customary rights; in 2009, it was estimated that only around 48% of state-owned pastureland is leased¹⁵.

The current conditions for using of pastures include several administrative steps and can be summarized as follows:

1. A land tax is fixed and collected directly by the municipalities
2. A lease price of state-owned pastures is set differently by the different institutions owning (or managing) the pastures¹⁶:
 - Agency of State Property: the cost can vary from 18-50 GEL, fixed on the basis of 1/100 of the sale price of the pastures.
 - Municipalities: the cost vary around 8 GEL/ha
 - APA: this is still being studied and will be fixed by an independent auditor, but can be re-evaluated (close to 0 GEL) to allow APA to give incentives to shepherds to adopt stricter conservation measures.
3. Private pastures are annually leased from local landowners for about 8 GEL per hectare and season¹⁷
4. Registration of the lease is done at the level of the National Agency of Public Registry, although this is not being done in a systematic way given that municipalities do not request a proof of registration.

In the current situation, the shepherds cannot afford paying all the associated costs for the production of high quality livestock through the use of pastures. The analysis of various costs has indicated that **the production costs are excessive compared to the market price and confirm the limited profits which can be obtained from the sector if all the costs associated with pastures leasing and other production costs are covered (refer to Box 5 below). This is a structural constraint for the development of the livestock sector in Georgia and for the livelihood of the shepherds if economically and environmentally sustainable practices are to be adopted.**

Box 5. Estimated costs and benefits of sheep production in Georgia¹⁸

The analysis of costs associated to production of 1,000 sheep was made accounting for the taxes and costs of leasing 800 ha of winter pastures and 350 ha of summer pastures, in addition to other expenses including fodder, vaccination, veterinary treatment, movement expenses, salt and labor expenses.

The analysis indicated that the prime cost of a sheep for a farmer who owns pastures is 110.4 GEL and for a farmer who does not own pasture is 130.4 GEL, and compared to the price of the sheep market in Georgia starting at 150 GEL. The results indicated limited profits obtained from the sheep production.

	Sheep Farmer with own pastures (1,000 sheep)	Sheep farmer who rents pastures (1,000 sheep)
Total annual expenses	67,750 GEL/year	79,250 GEL
Profit in GEL	28,050 GEL	16,550 GEL

¹⁵World Food Programme. 2009. Georgia. WFP, Rome

¹⁶ Based on discussions with APA and Agency of State Property

¹⁷WWF, 2011. Range Management of Javakheti National Park

¹⁸Gonashvili et al, 2013. Perspectives on Sheep Farming & the Sheep Market System in Georgia. Prepared with the support of the Swiss Confederation and MercyCorps.

3.3. Geographic Distribution of Pastures and Migration Routes

According to assessments conducted by GRID¹⁹ in the **Caucasus ecoregion** to support the transboundary and sub-regional cooperation in the mountain eco-region of the Caucasus, pasture areas in Georgia are mostly located in along the northern borders with the Russian Federation and southern borders with Azerbaijan, Armenia and Turkey (refer to **Figure 5** below).



Figure 5. Location of Pastures in Georgia (taken from www.grida.no)

A recent study conducted on sheep farming in Georgia²⁰ has indicated that the following types of sheep farming are practiced in Georgia:

- **Nomad (Transhumance).** This is 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 Dedoplistskaro, Signagi, Gurjaani, Telavi, Akhmeta, Sagarejo, Marneuli, Gardabani, Bolnisi, Tianeti, Akhlagori, 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.

However, different definitions of the types of use of pastures can be found in different studies, although they have been limited to general descriptions of the types of pastures use and have not provided a quantitative update of the current status of the use of pastures.

¹⁹<http://www.grida.no/graphicslib/collection/caucasus-ecoregion-environment-and-human-development-issues>

²⁰Gonashvili et al, 2013. Perspectives on Sheep Farming & the Sheep Market System in Georgia. Prepared with the support of the Swiss Confederation and MercyCorps.

A WWF study²¹ has referred to the following the types of pastures use (as presented in **Box 6**):

Transhumance, Pasture-based, and Semi-pasture based.

Another study prepared through the Swiss Cooperation²² has referred to the following types of pastures use (as presented in **Box 7**): **Pastures outside of villages, Village pastures, Hayfields.**

Although the need for harmonizing the definitions of pastures use is important, all studies have converged on the act that transhumance is the system that is most used in pastures in Georgia. However, limited up to date and accurate information are available regarding the extent of transhumance and the migratory routes of transhumance across the country.

According to Gonashvili²³, prior to the independence, the order of herd transhumance was determined by “Sortition” within shepherds, and allowed to define whose herd will move first. Gonshavili indicated that *“this process is less organized and transhumance starts mainly depending on the melting of the snow in highlands which provide the summer pastures. In the case of sheep movement migration routes, these go through 4 regions of Georgia and include 20 municipalities with an overall area is 13,400 ha and a total length is 11,874 km”*.

An accurate description of a transhumance model in the use pastures in and around the Vashlovani National Park (as presented in **Figure 6**) is provided in the assessment conducted by NACRES in 2012²⁴. According to the study, the flocks move mountain pastures in late May or early June (depending on season), for the summer. With the first cold in the mountains by mid-October, the flocks move back to the Vashlovani rangelands for the winter and this is, then, where the lambing occurs. The weaning of surviving lambs takes place by early April until the beginning of May. This is when the flocks move back to the Tusheti high mountain pastures, about 250 km north-east of Vashlovani.

²¹WWF. 2014. Sustainable Management Plan for Pastures Adjacent to Chachuna Managed Reserve– Present-day Situation and Recommendations. Prepared by Ioseb Sarjveladze.

²²Martin Raaflaub and Lukas Marek Dobry, 2015. Pasture Management in Georgia. Swiss Cooperation Office for the South Caucasus

²³Gonashvili et al, 2013. Perspectives on Sheep Farming & the Sheep Market System in Georgia. Prepared with the support of the Swiss Confederation and MercyCorps.

²⁴G. Gintzburger, 2012. Rangelands Condition and Assessment: Vashlovani national park and associated project areas. Prepared for Georgia Carnivore Conservation Project, FFI/NACRES.

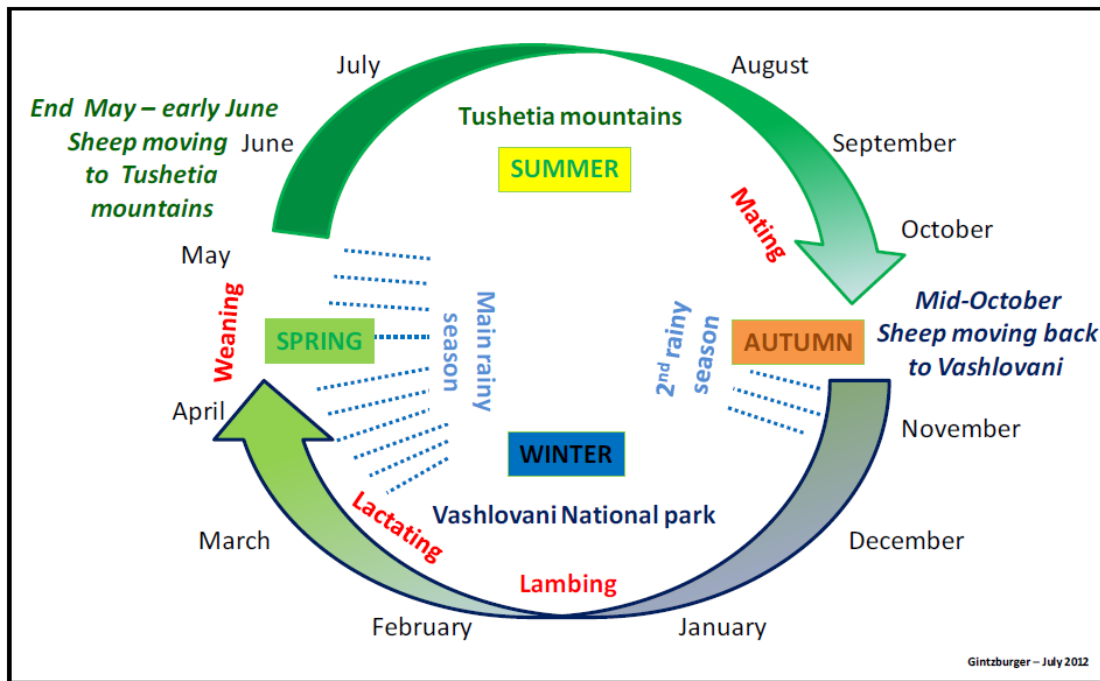


Figure 6. Pastures use and sheep movement around the Vashlovani National Park

Box 6. Systems of sheep keeping in Georgia: transhumance, pasture based, semi-pasture based²⁵

According to the Sustainable Management Plan for Pastures Adjacent to Chachuna Managed Reserve, historically, three systems of sheep keeping have been established in Georgia: transhumance, pasture based, semi-pasture based.

- **Transhumance** is basic system and at the same most complex. It implies to use natural pastures during the year. It covers about 75% of sheep available in the country. Among the peculiarities of transhumance, it is to be mentioned that this system is based on natural pastures and consumption of most part of these pastures is inconceivable without the use of sheep breeding, but is impossible for other kinds of livestock. In spite of this, the sheep does not get enough feeding from pastures, especially in winter and that's why it is necessary to provide them with supplemental nutrients (hay, straw, liquid food and food concentrates).
- **Pasture-based system**, the sheep is fed in racks and do not use pastures from November till April. From the end of April up to late autumn sheep is grazing on nearby summer pastures.
- **Semi-pasture based system**, the sheep is housed in a barn and provided with supplements at night during the winter; at daytime they are taken out to nearby pastures. While utilization of pastures, the amount of supplement feeding depends on availability of pastures and climate conditions. In the summer, flocks of sheep are taken from winter pastures to relatively nearby mountain pastures.

Box 7. Current pasture and hayfield use practices in Georgia²⁶

²⁵WWF. 2014. Sustainable Management Plan for Pastures Adjacent to Chacuna Managed Reserve– Present-day Situation and Recommendations. Prepared by Ioseb Sarjveladze.

²⁶Martin Raaflaub and Lukas Marek Dobry, 2015. Pasture Management in Georgia. Swiss Cooperation Office for the South Caucasus (SCO)

The following findings regarding the use of pastures were reported by the study based on the interviews conducted through the study:

Pastures outside of villages, mountain pastures: Pasturing is self-regulated among local and nomadic pasture users. Self-regulated means that shepherds are free to lead their herds to locations with best grass growth, coordinating herd movements and pasturing areas informally among themselves. In some regions, however, (i.e. Adjara) undocumented geographically defined pasture areas attributed to villages or families exist that are being recorded in the community memory.

Village pastures include unfenced land in and around a village. Cows are left to freely pasture these areas during the daytime. Sometimes, a shepherd is responsible to guard the cows and leads them towards the areas with best forage. Some village pastures may benefit from irrigation. No other activities (such as fertilization, bush and weeds clearing) were reported in the interviews.

Hayfields: Hay is made individually by farmers (and businessmen). Hay is made on private hayfields, on surfaces rented from the municipality for that purpose, or as a secondary crop, e.g. in the rows between grape plants. Hay is cut at a very late stage (seed ripening stage, in mountain pasture even later), apparently in order to increase the quantity per harvest. Moreover, farmers avoid cutting hay before the stable dry summer weather conditions have set in, because the limited availability of machinery impedes the timed use of short dry weather windows.

3.4. Key constraints linked to transhumance routes and grazing practices

Available literature on pastures and transhumance have indicated key challenges facing the shepherds in their movements as well as at during the settlement in the pastures.

Regarding transhumance routes, the following constraints can be highlighted:

- At the time of the Soviet Union, some transhumance routes used to pass through neighboring countries, however, since the independence, some of these routes still require corrections and shepherds still face difficulties moving between winter and summer pastures;
- There is no transhumance management system to organize the sequence of animal movement, and to protect pastures belonging to villages near the movement routes to avoid conflicts between shepherds and village populations;
- Some of the transhumance routes go through villages causing disruption and unsanitary conditions over the 4 months of transhumance period every year;
- Infrastructure of the livestock movement route is very poor, disinfection pools are lacking, water and barriers at resting points are needed every 10km to avoid weakening or death of the animals;
- Given that animal movement includes sheep as well as cattle, the planning of needed infrastructure on the transhumance routes should take into account the types of animals going through these routes.



Figure 7. Sheep movement going through the central road of Marneuli prior 2012²⁷

Regarding summer pastures, the following constraints can be summarized:

- In summer Pastures, there are no stalls for grazing herds, basic fencing is done with rocks or/and wires for to keep the animals overnight. Shepherds and their family members live in tents.
- Only in farms where milking of sheep is practiced, animals are placed in smaller areas, although with no rooftops, including around 100 sheep, in a way they can be easily captured and in order to avoid mixing them with other sheep.

²⁷Gonashvili et al, 2013. Perspectives on Sheep Farming & the Sheep Market System in Georgia. Prepared with the support of the Swiss Confederation and MercyCorps.

Regarding winter pastures, the following constraints can be summarized:

- Animals' stations are mainly located in winter pastures, the 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.



Figure 8. Remaining farm in winter pastures in Chachuna²⁸

Regarding veterinary services, the following constraints can be summarized:

- Veterinary services are weak at all levels. Limited veterinary services are available at the villages although vaccinations are needed 20-21 days before the transhumance starts. No veterinary services and quarantine zones are available on the transhumance routes. Although efforts are underway to provide veterinary support and vaccination in the summer pastures, these services remain limited and do not respond to the actual needs. In many cases, this can lead to loss of animals even when diseases could have been easy to treat.
- The Project of the Sustainable Management of Pastures in Georgia has also demonstrated that extensive awareness and training of shepherds is needed regarding preventive veterinary services; shepherds are reluctant to call upon preventive services even when they are readily available.

Regarding feeding practices, the following constraints can be summarized:

- Transhumance shepherds rarely feed their herds with additional fodder, except in the winter time, when the pastures would be dormant and dry, and don't provide needed diet of lactating ewes. The

²⁸MoEP/UNDP, 2014. Assessment for the Feasibility of Targeted Pastures

winter feed gap coincides with the coldest period and the lambing period, possibly inducing noticeable lamb mortality and diseases outbreak.

3.5. Quality of pastures and classification methods

The status of pastures and their quality in Georgia has been mainly affected by the lack of available winter pastures which have shrunk drastically due to the loss of access to winter pastures in neighboring countries including in Azerbaijan and Dagestan after the independence²⁹.

Another factor affecting the classification methods is the lack of clear standards for grazing in winter and summer pastures.

For winter pastures, “Guidelines” were issued as by the Ministry of Agriculture and Food as part of a publication in 1983, however, these were not legally binding. No updated norms or regulations were issued since then for winter pastures.

For summer pasture, “Guidelines” were also issued as part of various publications in 1959 and 2010. As in the case of the guidelines for winter pastures, these were also not legally binding (refer to **Box 8**).

Box 8. Available guidelines for grazing in winter and mountain pastures

For winter pasture, guidelines have indicated 3 heads (sheep) per 1 hectare. These guidelines were issued as part of the publication “*Technologies of transhumant livestock farming in the light of intensification by V. Kumsishvili*” in 1983.

For summer pastures, guidelines have indicated different number of heads per hectare of mountainous pastures as per the table below (and were based on ZAZANASHVILI 2010, AGHABABYAN 1959):

Pasture type	Cow			Sheep		
	Good	Mean	Bad	Good	Mean	Bad
Alpine	0,7	0,5	0,3	4,5	3,5	2,5
Sub-alpine	1,5	1	0,5	6	4,5	2,5
Meadow-steppes	1	0,6	0,4	4	3	2

As such, available analysis of the status of pastures is based on these “questionable” norms, and confirms an overall increasing pressure on winter pastures in Georgia.

A recent analysis has indicated that the current total area of winter pastures is around 300,000 ha in Georgia and estimated that 1 ha of winter pasture is used by 3 or 4 sheep (based on the number of sheep), which is beyond the current guidelines of 0.8 sheep to 1 ha of winter pasture. The analysis also indicated that such

²⁹Martin Raaflaub and Lukas Marek Dobry, 2015. Pasture Management in Georgia. Swiss Cooperation Office for the South Caucasus (SCO)

guidelines were taking into account the fact that sheep should be getting additional nutrition; while currently in Georgia, 95% of farmers do not give additional nutrition to sheep.³⁰

Trends of overgrazing of winter pastures are documented in the WWF study in the winter pastures adjacent to Chachuna Managed Reserve and which showed that the actual sheep load is equal to 3-4 heads per hectare, but that the real situation can be much worse. The WWF study also indicated that the species composition of grass of these pastures has diminished.³¹

As such, various available reports have covered the issue of overgrazing and degradation of winter pastures although this issue merits to be taken with caution due to various factors affecting the pastures including:

- **Lack of comprehensive assessments of summer and winter pastures;**
- **Studies have focused on limited pastures areas along movement routes or drinking spots;**
- **The impact of climate change on pastures has not been evaluated.**

More recently, several Pastures Management Plans have been conducted in specific areas in Georgia, although most of these were dedicated to protected areas or to pastures adjacent to them. As the available assessments of the pastures have mainly covered the protected areas in Georgia, it is not possible to provide an adequate overview of the status of pastures across the country. Although the pastures management plans were restricted to protected areas and their surroundings, important information regarding the use of pastures and their management are provided in these assessments.

To date, Pastures Management Plans have been prepared for the following protected areas:

- **Range Management Plan for the Borjomi-Kharagauli National Park** and Support Zone, prepared by MoEP in 2004. However, it should be noted that this document was not officially adopted by MoEP nor it was used as a basis for guidance.
- **Management of Pastures within the Vashlovani Protected Area** and its adjacent territories have benefited from extensive support, including the following:
 - i. A study for the management of pastures was prepared by MoEP in 2007 but was not officially adopted.
 - ii. An Assessment of Rangelands Condition of the Vashlovani National Park and associated project areas was prepared by G. Gintzburger, July 2012 (for Georgia Carnivore Conservation Project, FFI/NACRES).
 - iii. An assessment of Pastures in Vashlovani National Park was prepared by NACRES in 2013 (for the MoEP/UNDP Project of the Sustainable Management of Pastures in Georgia).
 - iv. Based on the above assessment, a Sustainable Pasture Management Plan for Vashlovani National Park has been prepared by the MoEP/UNDP Project of the Sustainable Management of Pastures in Georgia. The Plan is currently in the review process by different municipalities/APA and is expected to be approved soon. This VPA pasture management plan can be considered as the first in its kind in Georgia and will be the first which will be formally adopted by all concerned stakeholders.
- **Range Management Plan of the Javakheti National Park** was prepared by WWF in 2011. This plan was not officially adopted by MoEP, however it is used as guidance for pasture management.

³⁰Gonashvili et al, 2013. Perspectives on Sheep Farming & the Sheep Market System in Georgia. Prepared with the support of the Swiss Confederation and MercyCorps.

³¹WWF.2011. Range Management of Javakheti National Park: inventory of current situation and ideas of pasture improvement for the support and traditional use zone. Prepared by MarinusGebhardt

- **Sustainable Management Plan for Pastures Adjacent to Chachuna Managed Reserve** was prepared by WWF in 2014. This was followed by an Operating Range Management Plans for the Pastures Adjacent to Chachuna Managed Reserve prepared by WWF in 2015. This plan is considered as a guiding document for private pastures and is not legally-binding.

This lack of legally binding norms for pasture and the multitude of actors engaged in the development of pasture management plans have resulted in the adoption of different methods for the classifications of pastures across the various studies.

In the Vashlovani National Park, a Soil-Adjusted Vegetation Index (SAVI) model was used to create a standing biomass distribution map. This map was used to classify all available pastures according to standing biomass and create a less detailed but more practical map with 5 classes of pastures from very low biomass (“very poor” pasture) to very high (“excellent” pasture).³² **The results of the study showed that 46% of pastures in the Vashlovani National Park are classified as Moderate to Poor quality** (refer to **Table 1** and **Figure 9** below).

Classification levels	Pastures condition	% of surveyed area
1	Excellent	47
2	Good	7
3	Moderate	26
4	Poor	20
5	Very poor	0

Table 1. Classification of pastures in the Vashlovani National Park

In the Javakheti National Park, field methods for assessing the vegetation cover adopted a classification with a four level: Not damaged (100-80%), Slightly damaged (80-65%), Mean damaged (65-50%), Heavily damaged (<50%). The degradation rate of pastures was calculated by Normalized Differenced Vegetation Index (NDVI) of Landsat 7 imageries.³³ **The results of the study showed that 55% of the pastures in the Javakheti National Park are classified as Mean to Heavily Damaged condition** (refer to **Table 2** and **Figure 10** below).

Classification levels	Pasturescondition	% of surveyed area
1	Not damaged	33%
2	Slightly damaged	7%
3	Mean damaged	19%
4	Heavily damaged	36%

Table 2. Classification of pastures in the Javakheti National Park

³²MoEP/UNDP. 2013. Assessment of Pastures in the Vashlovani National Park. Prepared by NACRES.

³³WWF.2011. Range Management of the Javakheti National Park

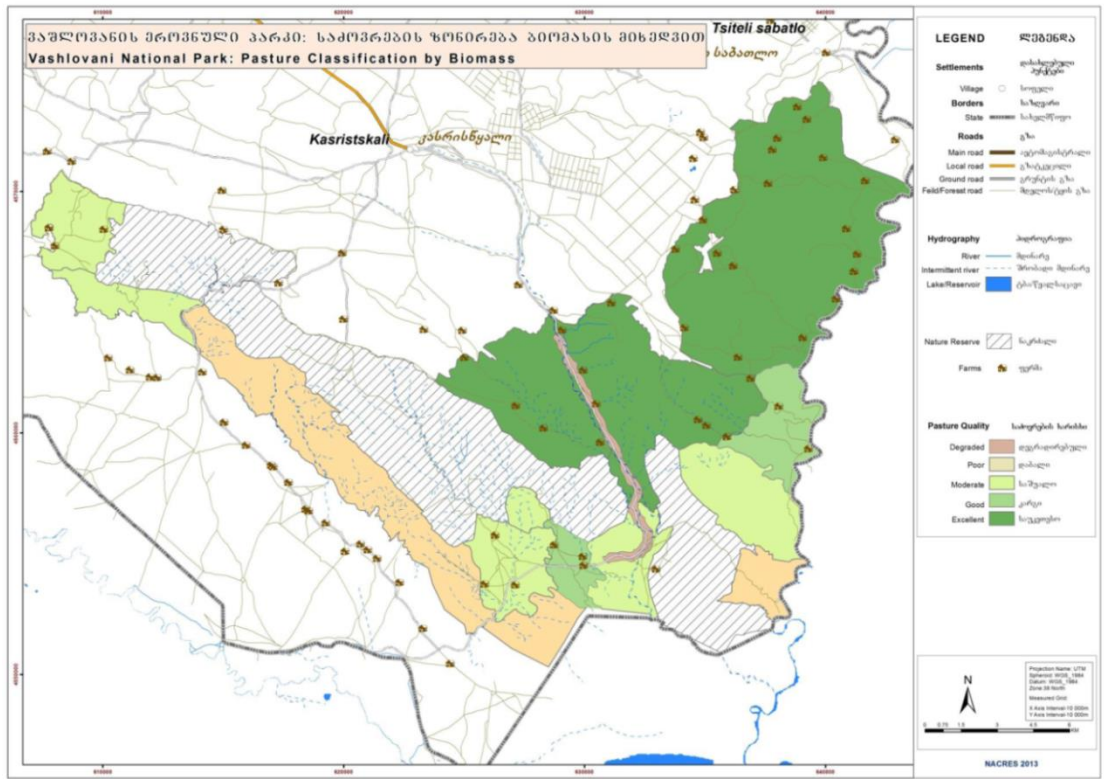


Figure 9. Pasture classification in the Vashlovani National Park

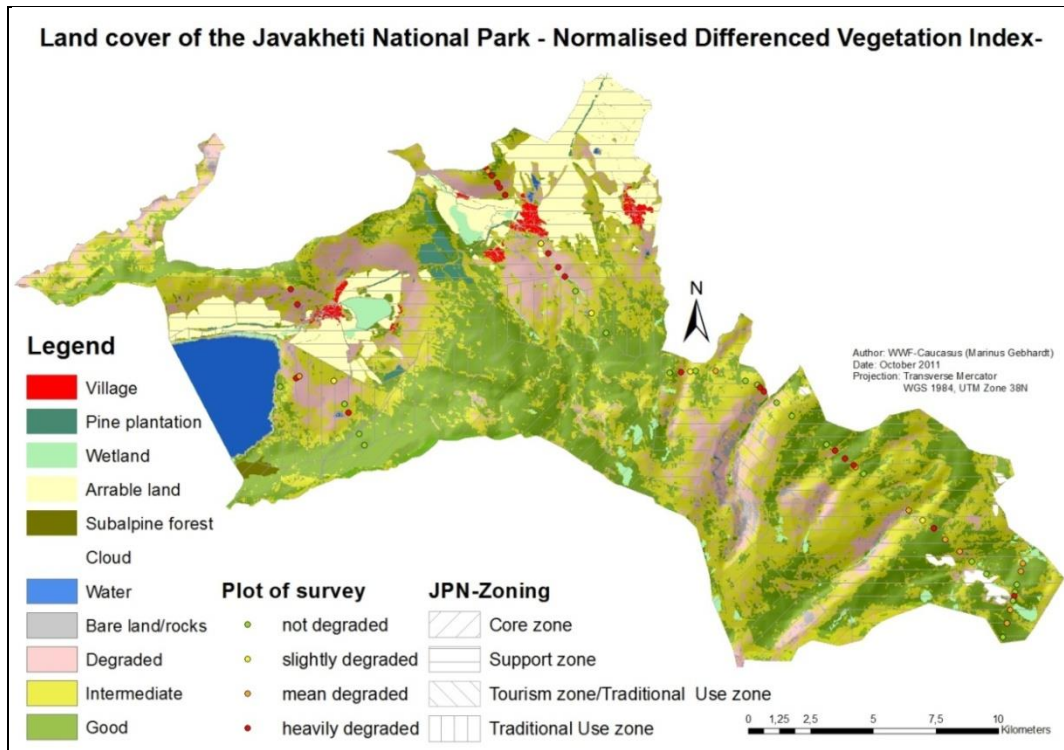


Figure 10. Vegetation cover of the Javakheti National Park

3.6. Impact of climate change on pastures

According to Georgia's Third National Communication (TNC) to the UNFCCC, it is predicted that by 2050 warming due to climate change will mostly occur in coastal zone and mountainous regions of Ajara (1.6-1.7 °C). By 2100, the biggest increment of temperature (+4.2 °C) is anticipated in Batumi. Annual precipitations have mostly increased in low-mountain zone of Svaneti and middle-mountain regions of Ajara (+14%). In general, precipitation increased in most regions of West Georgia, and decreased in East Georgia by 6-8%. By 2050, according to the forecast, sustainable trends of increase of precipitation is anticipated in West Georgia, further their decrease will begin on the whole territory by 10-20% till 2100.³⁴

In the framework of the Third National Communication of the country, the impact of Climate Change on the Agricultural Sector of Georgia was studied for two regions – Ajara and Kakheti. The study confirmed that intensified and more frequent precipitation as a result of warming causes washing down of soil on mountain slopes, which, against the background of extensive exploitation of grass cover, is accompanied by dramatic decrease of productivity of hay lands and pastures and erosion of pastures, that, in its turn, has negative impact on the development of livestock farming in both regions.

Under the Second National Communication (SNC) to the UNFCCC, the Dedoplistskaro region was selected as one of the priority regions for which in-depth assessments were conducted given significant threat of desertification in this area; and which can serve as a basis for projecting the impacts of climate change on pastures across the territories.³⁵

The SNC showed that land degradation stands as one of the most acute problems in the region, and consequently affecting pastures in the region. The depth of humus in agricultural lands, having been highly productive in the past, is being significantly decreased as a result of growing wind erosion. As an example, the humus content in Shiraki soils has decreased from 7.5% in 1983 to 3.2% in 2006, resulting in land fertility to be almost halved (refer to **Box 9**).

Box 9. Impact of climate change on pastures in Georgia

The SNC indicated that land degradation in the Dedoplistskaro region is affecting the winter pastures which occupy 52% of the region's total area. Until the 1990s, a significant part of sheep flocks were traditionally driven to winter pastures at the Caspian sea shore, in neighboring Dagestan. At present, about 50,000 sheep spend the winter in these territories. As a result, the load on pastures exceeds by 2-3 times the normal value believed to be 3-4 sheep per ha. Overgrazing adds up to the impact of climate change including strong winds and rainfall, and increases the process of desertification. It is estimated that 80% of the region's pastures are affected by overgrazing and to some degree subject to degradation.



Figure 11. Degraded pastures in Chachuna
(Photo from NACRES. 2013)

³⁴ MoEP, UNDP. 2015. Georgia's Third National Communication to the UNFCCC.

³⁵ MoEP, UNDP. 2009. Georgia's Second National Communication to the UNFCCC.

It has also been demonstrated that the climate change scenario in Georgia will lead to significant changes to agricultural crop yields by the year 2020. For example, studies predict that the yield of maize will decrease by up to 15% and winter wheat yield will decrease by up to 20 percent in certain regions of Georgia (as presented in **Figure 12** below). Although the variability of changes to crop yield makes it difficult to draw any correlation between yield and effect on agricultural production value, the reduction of crop yields are expected to have implications on farmers who need to make choices about which crops will be most profitable³⁶.

Similar projections on pastures production and forage would merit to be conducted, as well as the identification of forage crops which are resilient to climate change.

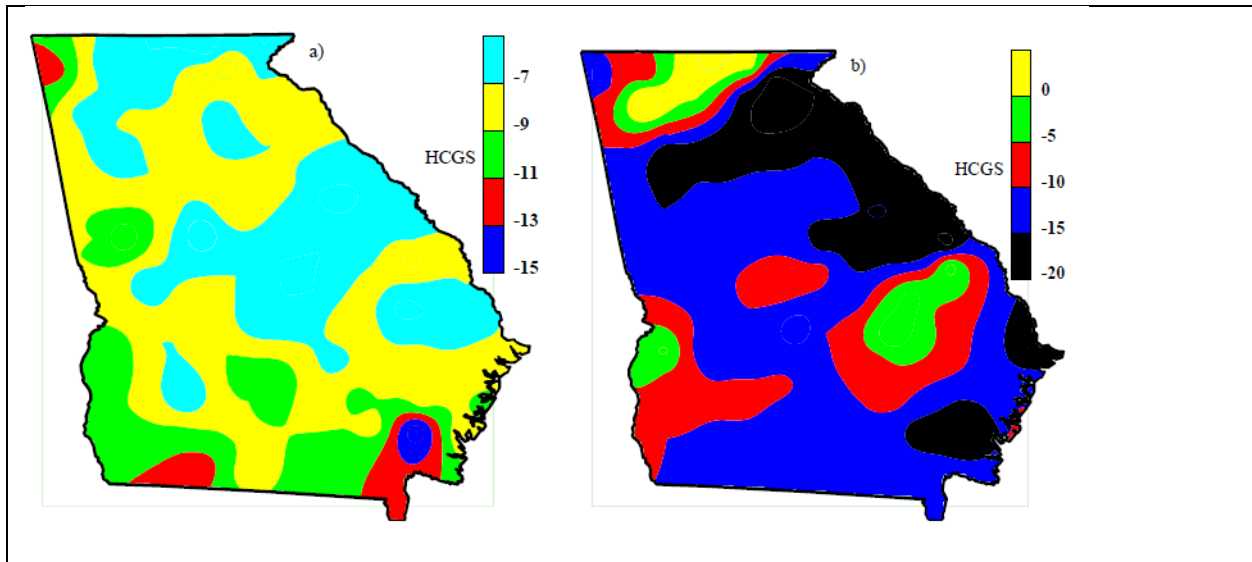


Figure 12. Spatial distribution of maize (a) and winter wheat (b).

³⁶Center for Integrative Environmental Research. 2008. Economic Impacts of Climate Change on Georgia

4. Pastures' contribution to the economy

4.1. The livestock within the agricultural sector

As pastures are considered under agricultural lands, their economic value is also accounted for under the agricultural sector. In Georgia, the agriculture sector has faced major challenges since Georgia's independence.

The land reform implemented following the independence has caused a significant fragmentation and the privatization of agricultural lands which did not support the development of the agricultural sector in general. The Agricultural Census of 2004 accounted that 66.9% land users owned about 0.1-1 hectares of land, 23.3% - 1 to 5 hectares, and only 0.15% owned more than 50-500 hectares. This fragmentation is further aggravated by the fact that one hectare of land owned by households is divided into 2-3 parcels. An analysis of farming systems conducted by IFAD³⁷ has illustrated three main farming situations:

- (i) Lower elevation small mechanized farms of 1.25 hectares with arable crops and few livestock;
- (ii) Small draft or manually cultivated farms of 0.5 hectares and livestock as the main activity;
- (iii) Transhumance grazers totally reliant on livestock and pastures.

According to the IFAD study, the livestock subsector is probably the most important activity of the one million small farm households.

This fragmentation, the failure to modernize and the limited number of farmers' organizations has resulted in a situation where the majority of the farmers cannot benefit from economies of scale nor compete with importing suppliers. Other key problems of the sector are: major capital disinvestment; the Russian embargo; the world economic recession; limited access to credit (lending to the sector only accounts for 1% of total lending); absence of a functioning agricultural research-education-extension system; lack of a well-functioning land market; poor condition of irrigation systems and other infrastructures and widespread impact of livestock diseases³⁸.

As such, the agriculture sector has reflected a significant decrease in its share of the GDP from 31% in 1990 to 9% in 2013 although it still accounts for about 52% of the country's labor force³⁹. The agricultural sector's dramatic reduction in productivity is reflected in the significant decrease in the livestock numbers, specifically for the numbers of pigs, sheep and goats, while the number of cattle remained stable over the years (refer to **Table 3**).

Table 3. Sown Area, Livestock Numbers, and Share of Agriculture in GDP 1990-2013⁴⁰

Year	Sown Area (Ha)	Cattle	Pig	Sheep and Goat	Share of Agriculture in GDP
1990	701,900	1,298,300	880,200	1,618,100	31.6%
2013	310,700	1,229,700	191,200	856,800	9.3%

The limited productivity of the agricultural sector is also a major cause of rural poverty; according to GeoStat, in 2013, the average annual salary of a farm worker amounted to only 64% of the national average, which is widening the income gap between urban and rural residents; in 2012, 18.8% of the rural population were living below the national poverty line compared to only 10.5% of the urban population.

³⁷IFAD 2014. Final Project Performance Assessment of RDP for Mountainous and Highland Areas project 2001 - 2011

³⁸http://ceas.europa.eu/delegations/georgia/projects/overview/agriculture_and_rural_development/index_en.htm

³⁹ Agriculture comprises of primary production, forestry, and fishery. Source: GeoStat

⁴⁰MoA 2015. Strategy for Agricultural Development in Georgia for 2015-2020.

4.2. Value chains related to the livestock sector

The livestock sector is mainly concentrated on the sale of live animals, most of which are exported to few destinations, which makes the sector vulnerable to disruption. As an example, the closure of the Iranian market for the Georgian sheep in 2011 has confirmed the vulnerability of this sector in its dependence on limited number of destinations.

Although livestock products figure among the ten agricultural exports with the largest volumes, these products are constituted mainly of unprocessed products and include live sheep and goats and live bovine animals which represent only 4% and 7% respectively of the agricultural exports volumes (refer to **Figure 13** below)⁴¹.

Several constraints are hindering the development of the market of live animals and should be considered as part of the current practices adopted in the live animals in order to improve this market without jeopardizing the market price and its competitiveness with other countries and include:

- **guarantee the quality of the live animals regarding lack of diseases through robust veterinary control; and**
- **guarantee an acceptable weight of the animals and ensuring adequate feeding practices especially during winter seasons and on the migration routes.**

It should also be noted that the share of livestock sales in the local market is limited, especially in the case of the sheep market which is very weak in Georgia, and marketing of local production of livestock is important in order to improve the sector's performance given the limited demand local livestock products.

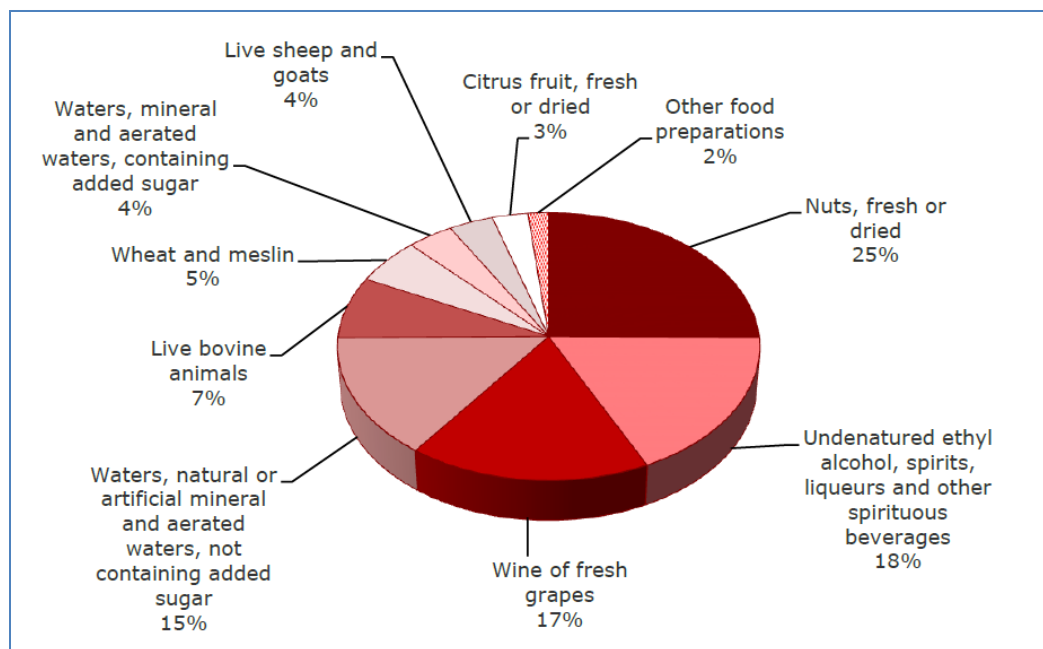


Figure 13. The ten agricultural exports with the largest volumes (average 2009-2014)

In addition to the limited destinations, the livestock exports are constrained by the limited diversification of the value chain and its reliance on live animals rather than high value processed products which can

⁴¹Georgian Economic Team/ISET, 2014. Study paper of Georgian agricultural exports

significantly boost employment in the processing industry and value-added in areas such as packaging, transportation and quality control as well as strengthen resilience of the sector to economic as well as environmental shocks (refer to **Box 10** below).

In the case of the livestock sector, value chain is very limited and does not present much of its products. Other value chains from the livestock sector also need to be investigated in view of diversification of the revenues of farmers and improving their livelihoods. It should be noted that the Association of Georgian Shepherds has conducted a food chain assessment related to grazing.

Two main value chain products of the sector should also be considered in the development of value chain products and include the following⁴²:

1. **Dairy product.** Currently, dairy production is limited to internal use by the farmers, except for the Tushuri Leather Bag Cheese, which is mainly produced in eastern Georgia in a traditional way, and sold in the local market. No other dairy products are available on the market and limited research and support has been provided to farmers for the identification and development of dairy productivity. The last research concerning identification of dairy productivity of the Georgian sheep was carried out in 1947. Several aspects hinder the development of the dairy production and include the lack of collection centers, transportation and current practices for interrupting lactation for the purpose of animal fattening.
2. **Wool production.** Georgia has a capacity of producing 1.7 million kg of wool/year, which remains below the absorption capacity of modern washing factories requiring the processing of 7 million 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.

Box 10. Why focus on diversification and processed agricultural products⁴³

A diverse export structure, in terms of both products and destinations, has the important advantage of reducing dependence and vulnerability to shocks caused by production shortfalls (due for example to weather, or the outbreak of a plant or animal disease) or by trade policy changes (e.g. an import ban in an importing country). In addition, there are several advantages to exporting especially processed agricultural products as opposed to primary commodities. International agricultural trade is shifting towards high value processed products, a trend which was slowed but not reversed by recent peaks in prices for primary commodity such as grains and oilseeds.

Exporting processed agricultural products generates employment in the processing industry and value-added in areas such as packaging, transportation and quality control. This can provide an important impetus to the economic development and diversification of rural areas. Furthermore, prices for processed agricultural products are generally less volatile than prices for agricultural commodities. Many processed agricultural products are easier to store than primary commodities, so their exports can be spread out over time, thus making better use of available infrastructure (e.g. harbour capacities) and reducing the need to sell into temporary glut markets.

⁴²Gonashvili et al, 2013. Perspectives on Sheep Farming & the Sheep Market System in Georgia. Prepared with the support of the Swiss Confederation and MercyCorps.

⁴³Georgian Economic Team/ISET, 2014. Study paper of Georgian agricultural exports

5. Legal framework related to pasture management

There are several legal frameworks addressing the regulation of pastures in Georgia, although these can be conflicting and unclear in some ways.

An initial legal analysis related to pastures management was conducted under the EU/UNDP Project “*Sustainable management of pastures in Georgia to demonstrate Climate Change mitigation and adaptation benefits and dividends for local communities*” and identified the key regulations related to pastures but focused mainly on those related the protected areas⁴⁴. A comprehensive assessment of laws and regulations related to land management in general is found in the Second National Action Programme to Combat Desertification for 2014-2022⁴⁵. The recent study on Pastures Management has also investigated the legal framework related to pastures in Georgia⁴⁶.

Based on the above studies, a list of laws and specific articles under the different laws is presented in the **Table 4** below in chronological order and provides a rapid overview of the historical developments of the legal framework related to pastures management and key legal gaps to be taken into consideration.

Despite multitude of laws and regulation, the “**Law on soil conservation, restoration and improvement of its productivity of 2003**” remains the only active regulation that directly regulates land management and which entrusted MoA the responsibility for monitoring and enforcement of the conservation of lands, including pastures. Article 4 of this Law prohibited the “*Excessive amount of grazing beyond the permitted limit in the high mountain pastures, which lead to erosion processes*”; however, it did not set any norms for mountain pastures. The Law also failed to make any reference to lowland (winter) pastures. As such, the only available norms for winter as well as mountain pastures are outdated and unofficial standards presented earlier in section 3.6.

The only definition of pasture in the legislation in Georgia is found in the “**Law on Public Registry of 2008**” which defines pastures as one of the categories of agricultural land.

Beyond the above 2 laws, most of the regulations related to pastures in Georgia have been mainly addressing setting deadlines and conditions for the privatization of pastures.

As such, in 2005, some of self-government units used the right stipulated in the “**Organic Law on Local Self-Governance of 2005**” in order to register pastures under the ownership of the self-government units. However, the “**Amendment made to the Organic Law in 2010**” prevented the transfer of pastures to the self-government units. Consequently, pastures have not been transferred to self-government units since 2010. This law was abolished in 2014, when Local Self-Government Code was adopted.

Since 2010, the privatization of pastures was regulated under the “**Law of State Property of 2010**”, which regulated leasing of pastures and “*set out May 1, 2011 as a deadline for privatization of agricultural lands, which was acceptable for privatization previously*”. As such, under this Law, privatization of pastures and livestock migration routes was significantly restricted.

The latest regulation related to pastures is found in the “**Local Self-Government Code of 2014**” which established the present structure of regions, self-electing cities and municipalities and the framework for transfer of services and powers to municipalities. Although this Law allows municipalities to apply to the Public Registry to register agricultural land (including pasture) which is within the territory of the municipality, the same paragraph stipulates that such request of the municipality “does not strip the state from the right to register non-registered agricultural lands under the state ownership”.

Table 4. Key laws and regulations related to pastures management

⁴⁴UNDP/EU, 2013. Use of Pastures in the Traditional Use Zone of Vashlovani National Park: Legal and institutional aspects. Prepared y NACRES

⁴⁵MoEP, 2014. Second National Action Programme to Combat Desertification for 2014-2022.

⁴⁶S. Svanadze, National Programme Officer, Swiss Cooperation Office, Tbilisi. Taken from Annex 2 of “Pasture Management in Georgia. Martin Raaflaub and Lukas Marek Dobry, 2015. Swiss Cooperation Office for the South Caucasus (SCO)”

Year of issuance	Title of regulation	Relevance to pastures management
1996	Law on Protected Areas System	Article 5 permitted traditional use zone activities, implemented in the form of integrated programs described in the management plan of the given protected area. The permitted activities within this zone include: hay making as permitted by natural productivity, livestock grazing, fuel wood collection.
2003	Law on soil conservation, restoration and improvement of its productivity	Article 4 of this law prohibits the “Excessive amount of grazing beyond the permitted limit in the high mountain pastures, which lead to erosion processes”. However, it fails to make any reference to lowland (winter) pastures. Article 12 of this law defines MoA as the competent authority of soil conservation and fertility restoration and improvement with respect to inspection and requesting to halt any damage.
2005	Law on Spatial Planning and Urbanization	The law sets the spatial planning principles, priorities, objectives and tasks, special territorial planning and planning documents and roles in territorial development. Article 22 of this law the special structuring plan of the municipality includes the following types: urban areas, rural areas, natural landscape areas and special areas.
2005	Organic Law on Regional Development (Which was abolished in 2014)	Article 47 stipulated that agricultural land that was not subject to privatization (i.e. pastures that were not granted on lease) should be transferred under the ownership of a self-government unit. However, the amendment made to the Organic Law in 2010 set forth that pastures should not be transferred under the ownership of self-government units.
2008	Law on Public Registry	The law defines pasture as one of the categories of agricultural land. There is no other definition of pasture in the legislation of the country.
2010	Law on State Property	Article 4 stipulates that pastures, except the ones granted on lease before July 30, 2005 and the ones that are attached to construction-buildings standing on it, that are either in private property of natural persons and/or legal entities or/and in state property on the basis of an act issued by respective state or local government body with observance of relevant rules and procedure, shall not be subject to privatization. Article 7 stipulates that agricultural land (including pastures) which are not leased might be subject to privatization in accordance with the procedures of direct selling according to the Governmental decision Article 47 sets out that May 1, 2011 as a deadline for privatization of agricultural lands. If a lessee does not act as stated above, lease agreement will be repealed and the land will be privatized in accordance with the generally established rule, similar to the rule on privatization of the land under state ownership and granted on lease in the form of either auction or direct selling.
2013	Law on Agricultural Cooperatives	This law allowed the creation of the Agricultural Cooperatives Development Agency. The Agency promotes entrepreneurial activities of agricultural cooperatives and assists them in cultivating their lands and to bring them into the country’s economy.
2014	Local Self-Government Code	Article 107 allows municipalities to apply to the Public Registry to register agricultural land (including pasture) which is not under registration and is within the territory of the municipality under its ownership. However, the same paragraph stipulates that such request of the municipality “does not strip the state from the right to register non-registered agricultural lands under the state ownership”.
2015	Law on Mountainous Areas Development	The law supports the social development of 1500-1600 villages situated in mountainous areas with an altitude above 800m. It promotes rural development and limits rural migration. Through the law, several incentives have been established for the residents, including the Mountain Development Fund of the value of \$8 million.

As such, it can be concluded that the two key regulations related to pastures management (namely the Law on State Property of 2010 and the Law and Code on Local Self-Government of 2014) have continuously included conflicting directives with regards to the privatization of pastures as well as to relegating their ownership to local governments and to keep them within the states ownership. This trend is also reflected in practice as indicated earlier with regards to conflicting policies and practices driving the pastures registration process in “**Section 3.1. Land tenure of Pastures in Georgia**”.

Other key legal and regulatory aspects related to pastures management include the following:

- “**Law on Protected Areas System of 1996**” permitted hay making and grazing within the “traditional use zone”, if these are conducted “*in the form of integrated programs described in the management plan of the given protected area*”. Moreover, Decree No 125 of 2013 on the initial auction price and organization of public auction addresses the leasing of immovable property on protected areas and regulates the privatization of state property including pastures (except protected landscape and multiple use territory). APA was thus given the right to lease pastures in agreement with local municipalities through a simplified procedure, namely without a tendering process.
- “**Law on Agricultural Cooperatives of 2013**” allowed the creation of the Agricultural Cooperatives Development Agency in view of promoting entrepreneurial activities of agricultural cooperatives and assists them in cultivating their lands and to bring them into the country’s economy.
- “**Law on Mountainous Areas Development of 2015**” supports the social development of 1500-1600 villages situated in mountainous areas with an altitude above 800m. It promotes rural development and limits rural migration. Through the law, several incentives have been established for the residents, including the Mountain Development Fund of the value of \$8 million.

These legal instruments are highly relevant for supporting a balanced management and development of pastures and appropriate grazing practices in Georgia and should be taken into account in policy setting of pastures management.

6. Institutional framework related to pasture management

This section provides an identification of the institutional responsibilities related to pastures management under key stakeholders at the central and local levels.

6.1. Ministry of Agriculture (MoA)

MoA is the key institution in Georgia for planning and implementing agricultural development including the development of pastures. As pastures are considered agricultural lands, MoA's responsibility covers livestock in general, including pastures and transhumance herds.

Before 2012, agriculture has not been viewed as priority and governmental spending on the agricultural sector has been erratic. At its low-point in 2010, spending on agriculture was 0.44% of total government spending (refer to **Figure 14**). Between 2000 and 2007, the number of the MoA employees dropped by 87% and this significantly reduced its ability to carry out even its most basic statutory responsibilities, during this period, 19 regulatory and inspection departments and municipal branches reporting to MoA were closed⁴⁷.

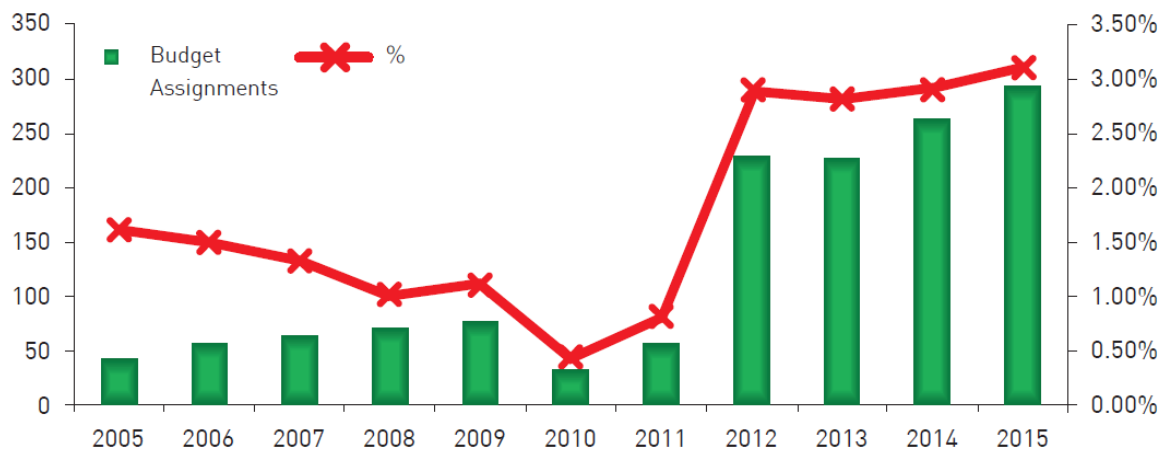


Figure 14. Budget allocation to the MoA between 2005 and 2015 (in Million GEL)

Since 2012, support to MoA has been significantly increased, both at the financial and institutional levels, and the MoA has established several units with the following functions:

- **Extension Services** have been established in all 59 districts in the country composed of 5-6 employees at district level, in addition to 10 **Coordination Units** at regional level with 6 employees in each unit. The Extension Services are reporting on daily basis to the central administration with regards to the services provided on issues such as livestock and plants (services similar to those in Lithuania and Latvia). The services also provide ad-hoc technical advice (on crops for example) and laboratory analysis.
- **The Agricultural Research Centre** of MoA was established in 2014 with an important role in scientific development. It aims at developing agriculture and food production, promoting the

⁴⁷MoA, 2015. Strategy for Agricultural Development in Georgia for 2015-2020.

preservation of animal and plant agro biodiversity, reconstruction of the breed selection stations, supporting animals artificial insemination process and breeding activities, developing seed/planting material standardization and certification system, introducing new technologies, providing extension services to farm workers, conducting risk assessment in food safety, veterinary and plant protection fields, and providing support to the development of biologically clean agriculture etc.

- **The Agricultural Cooperatives Development Agency** was established in 2013 to promote entrepreneurial activities of agricultural cooperatives and assist them in cultivating their lands and to bring them into the country's economy.
- **The MoA has also recently established under its responsibility several agencies which allow modern approaches, innovations and technologies** and will allow it to optimize agricultural production and successful development of economic activities; these include:
 - National Food Agency,
 - National Wine Agency,
 - Projects' Management Agency,
 - Georgian United Systems of Amelioration Company,
 - Laboratory of the Ministry of Agriculture,
 - Rural and Agricultural Development Fund.

MoA has also identified **Development of Breeding System and Veterinary Support as key priorities** under its Agriculture Development Strategy as presented in Section 6 of this report. Several programmes and projects have also been initiated by MoA to support pastures management as presented in Section 6.2.

However, to date, MoA has not been involved in planning and implementing a comprehensive approach for pastures management, although it has established the needed basis for initiating policies and legal reform for managing pastures including establishing a monitoring protocol of pastures which can be up-scaled through its own structures.

As an example, some **veterinary and phytosanitary inspection** functions related to pastures management are also held by other institutions in Georgia and merit to be harmonized (refer to **Box 11**).

Box 11. Border control for veterinary and phytosanitary inspection points for agriculture import/export monitoring⁴⁸

Prior to 2006 the MoA structures undertook the functions of quarantine and phytosanitary border control. In 2006, this function was transferred to the Revenue Service of the Ministry of Finance, which undertakes control in accordance with the rules established by international organizations FAO, OIE, and IPPC and policies put in place by the MoA.

As a result of collaboration between the specialists of the revenue service and the MoA, the rules of phytosanitary and veterinary border control were updated by relevant amendments. The control mechanisms and the list of commodities and items under control upgraded. Also, the list of items requiring permits was updated and information sharing principles agreed upon. Training will be provided to staff at border control and inspection points on food product and coordination improved between LEPL Revenue Service of the Ministry of Finance and the LEPL National Food Agency of the Ministry of Agriculture.

⁴⁸ MoA, 2015. Strategy for Agricultural Development in Georgia for 2015-2020.

6.2. Ministry of Environment Protection (MoEP)/Agency for Protected Areas (APA)

MoEP has been relegated responsibilities related to pastures through several functions.

The National Environmental Agency, within the MoEP, has been charged among others, with the monitoring of soil erosion, degradation and productivity, however, the National Environmental Agency's activities this area is incomplete, fragmented and non-systematic⁴⁹.

Under the responsibility of MoEP, APA is responsible for the pastures within PAs including the leasing of these pastures, except when the pastures were already under a lease through municipalities.

In this context, APA sets the price for leasing based on an independent auditor's recommendation; this price is communicated to the municipality which will provide APA with a list of shepherds to enter into leasing contract with.

However, the leasing price might diverge from the fixed price in case the pastures in the PA merit special attention and APA might compromise on the price in order to allow stricter management conditions of the pastures.

As indicated in Section 3.6., APA has developed pastures management plans for pastures within PAs. While several pastures management plans and related studies were prepared for different National Parks and Managed Reserve since 2004, none of these plans has been officially approved and as such they are not legally binding. However, it is expected that the coming up Sustainable Pasture Management Plan for the Vashlovani National Park which has been prepared by the MoEP/UNDP Project of the Sustainable Management of Pastures in Georgia will be the first pasture management plan to be formally adopted by all concerned stakeholders (as detailed in Section 3.6.).

In fact, MoEP and APA have assessed and piloted their its institutional responsibilities regarding pasture management through the Project of the Sustainable Management of Pastures in Georgia which will be used as a basis for up-scaling institutional and policy recommendations for pasture management across the country (refer to **Box 12**).

Box 12. Key deliverables of the Project of the Sustainable Management of Pastures in Georgia

Since 2013, APA has initiated needed assessments and pilot activities for establishing sustainable grazing practices in PAs through the "Project of the Sustainable Management of Pastures in Georgia to Demonstrate Climate Change Mitigation and Adaptation Benefits and Dividends for Local Communities". The project is focusing on the pastures in the Vashlovani Protected Area (VPA) as a pilot action for the rehabilitation of pastures and the introduction of sustainable grazing practices in this area. The project also established a consultative approach at local and central level. The key deliverables include the following:

- Establishing the Pasture Stakeholders Committee which meets 2 times per year as a platform for institutional coordination on pastures management.
- Pasture classification of VPA based on satellite imagery and a Soil-Adjusted Vegetation Index (SAVI) model and allowed the identification of the stocking rates and productivity levels of the pastures. This same method was also applied in 2 other PAs.
- Establishment of a vegetation map for the pasture areas of VPA, identify potential alternative pastures outside VNP, propose rehabilitation/management measures for priority sections and propose relevant recommendations.
- Development of Sustainable Pasture Management Plan for Vashlovani Protected Areas and implementation of priority measures.
- Establishing veterinary services for Tush shepherds; to date, around 5,000 sheep have already benefited from these services.

⁴⁹MoEP, 2014. Second National Action Programme to Combat Desertification for 2014-2022.

6.3. Ministry of Economy and Sustainable Development (MoESD)/Agency of State Property (ASP)

MoESD has an important role in the supporting agricultural development as well as pastures through its role in overseeing land management policies in general and the process of privatization of state owned lands as well as their registration in specific.

The ASP is responsible for the organization of pasture lease contracts on state owned lands, it issues leasing contract for a duration up to 49 years. For pastures, a unique pricing system has been adopted for all types of pastures, as opposed to other agricultural lands; for example, for hay meadows, prices vary depending if they are irrigated or not.

Institutionally, the ASP has 7 service centers across the administrative units of the country; these are based within the Governorates' structures which allow their operation at regional level. In addition, a representative of the ASP is also present at the level of each municipality as part of the Justice Hall under the local representation of the Ministry of Justice.

At the signature of the lease, and every 5 years, the ASP requires a report on the conditions of the pastures to be conducted through the following institutions:

- the soil and land laboratory (privately owned)
- the judicial expertise bureau (state owned under the Ministry of Justice)

Such reports are already in place for the other agricultural lands categories including arable lands and hay meadows. The lease owners are requested to pay for the assessment (estimated value of \$50), and the report is submitted to the MoA for clearance.

The ASP is currently conducting a nationwide inventory of state property and will be able by mid-2016 to indicate the state properties covering all 3 categories of agricultural lands including pastures. Unless municipalities have registered the pastures prior to the completion of the inventory, it is estimated that the pasture will be property of the ASP. The inventory will not cover forest under the Forest Fund nor PAs under APA as these are already managed by the respective institutions.

Until mid-2016, the ASP will stop issuance of any lease for pastures and will resume such activity once the inventory is completed.

The inventory will be made public once it is completed; consultations with concerned ministries have already been conducted and have covered the analysis adopted by ASP for assessing the market price of all land categories.

6.4. Ministry of Regional Development and Infrastructure (MRDI)

MRDI is in charge of regional development policies in addition to overseeing the development of the infrastructure, including water, roads and others.

In terms of agricultural development and pastures management, MRDI ensures provision of needed infrastructure to farmers.

MRDI is also in the process of strengthening policies and laws which allow transferring the implementation of services from central level to municipalities. In line with the Law and Code of Local Self-Government, and with the support of UNDP and GIZ, the MRDI has developed Regional Action Plans (for a duration of 7 years) of all regions and has initiated the development of municipal development plans (for a duration of 4 years) for 40 municipalities.

MRDI is also aiming at linking the implementation of this planning process to the Regional Development Fund, which will ensure a strategic approach in the disbursement of funds; this could cover aspects related to pastures management both at municipal as well as at regional levels.

To date, the municipalities are in charge of issuing pastures lease contracts to shepherds on their pastures; municipalities are also aiming at acquiring state land in order to further improve their revenues.

The leasing is made mostly according to cadastral zoning, but occasionally, it can follow local customary grazing habits; this could include managing pastures outside the cadastral areas of the municipality. This is the case of the VNP which is situated in the district of Dedoplistkaro, however, the winter pastures and summer pastures within the VNP are under the jurisdiction of the Akhmeta municipality which is leasing pastures directly to shepherds.

Municipalities are monitoring pastures through the land specialists of the municipalities who have limited resources to oversee the leasing process (old paper maps, not always available...).

6.5. Association of shepherds

Two associations of shepherds currently exist for the estimated number of 6,000 to 7,000 shepherds in the country; these include the following:

- Association of Georgian Shepherds, covering 60 members
- Tush Shepherds Association, covering 40 members.

Given this limited representation, the associations are not very effective in promoting a policy dialogue related to grazing in the country. There is also no experience of associations or cooperatives of shepherds at local level which could support economic and organizational planning of the shepherds, although agricultural cooperatives do exist in the country.

The study on pastures management in Georgia reported that informal common decision making and implementation through discussions and leading towards consensus. Common action in some cases included common work for irrigation and reduction of the village herd after the village pasture was reduced. The opinion of elder farmers and of the shepherd is considered to have an increased weight in decision processes due to their experience. The study indicated that the benefits of introducing formalized structures were mostly rejected; this was judged incompatible with Georgian mentality. In some villages, pasture use conflicts were reported, primarily regarding trespassing nomadic herds, which did not respect the villagers' user rights and which could not be expelled. On mountain pastures, only minor conflicts which could easily be settled were reported.⁵⁰

⁵⁰Martin Raaflaub and Lukas Marek Dobry, 2015. Pasture Management in Georgia. Swiss Cooperation Office for the South Caucasus (SCO)

7. Policies, plans and projects related to pasture management

7.1. Strategies and plans related to pastures management

Several national strategies and plans have covered pastures and livestock activities in Georgia from different sectoral levels; however, no strategy has been dedicated to pastures management taking into consideration the specificity of pastures (refer to **Box 13**).

From the agricultural sector, the key related strategies which covered pastures management include the following:

- Strategy for Agricultural Development in Georgia for 2015-2020 prepared by MoA in 2015.
- Rural Development Strategy Position Paper prepared by FAO in 2015.

However, the both strategies did not address pastures and pastures management in an integral way. For instance, the Strategy for Agricultural Development has addressed aspects related to pastures from the perspective of livestock development and specific recommendations such as Provision of Veterinary services and Development of Breeding System included as part of the strategy.

Key recommendations related to pastures in the Strategy for Agricultural Development included the following:

- **Measure 3.4.6. Development of Breeding System.** Special attention should be paid to investigation, restoring and improvement of farmed animals, birds, fish, insects of local breeds and populations; establishment of genetic and information bank. In order to improve animal and bird species the establishment of breeding farms, unified breed registration system, and service centers for breeding activities and animal artificial insemination will be promoted in all municipalities. Local breeding methodology will be developed, seed bulls, assessment of genotype at the early stages of development, identification and subsequent use of potential animals with breed improvement capacity.
- **Measure 3.6.2- Veterinary.** Functioning of a reliable and efficient system for animal health protection, surveillance and monitoring is necessary for production of safe and quality food. This comprises of introduction of countrywide surveillance software in order to avoid the spread of contagious and potentially dangerous diseases to animals and humans. Both public and private sectors will be engaged in the process of efficient veterinary services provision. Relevant preventive and eradication programs against infectious animal diseases will be developed and implemented based on the current and expected risk analysis. LEPL Scientific-Research Center will be actively involved in this process. State veterinary control will be conducted on risk based results.

Other strategies have addressed the impact of grazing on natural resources and ecosystems and include the following:

- Second National Environmental Action Plan for 2012-2016, prepared by MoEP in 2012
- Second National Action Programme to Combat Desertification for 2014-2022 prepared by MoEP in 2014.
- National Biodiversity Strategy and Action Plan for 2014-20120 prepared by MoEP in 2014.

As in the case of the Strategy for Agricultural Development, despite the national importance of such strategies, they remain short of providing a strategic vision for the long-term planning of the pastures management in Georgia.

Box 13. Updated National Rangeland Strategy for Jordan⁵¹

Key challenges

The National Rangeland Strategy was developed in 2001. The Strategy and the related legislations have not been effective mainly because of the absence of national consensus and the lack of integrated plans. The status of poor management and use of the rangeland resources has not changed, which led to destruction of plant cover and weakening of productive capacities of rangelands. At present the rangelands of Jordan cannot provide animal feed for more than 3 month during the good rainy seasons and less than one month or none during the drought years. In addition vast rangeland areas (about 10 million du) known as claimed tribal lands have been allocated to private owners without proper plans for their restoration, development and management. This facilitated promotion of real-estate business in the rangeland areas and use of large areas for non-agricultural purposes.

Vision

Conservation and Sustainable Management of Rangelands

Strategy Main Goals

1. Rangelands sustainable development and management
2. Improvement of social and economic conditions for livestock breeders and pastoral communities taking into consideration gender issues
3. Enhancement of capacity building (training and awareness)
4. Monitoring and evaluation of rangeland status
5. Engagement of Local communities in sustainable rangeland development and management.

⁵¹Ministry of Agriculture/EU/IUCN. 2014. Updated National Rangeland Strategy for Jordan.

7.2. Projects related to pastures management

The MoA has initiated several projects with the support of various funding agencies to develop the agricultural sector and which addressed pastures management to a certain extent.

In this context, the European Union (EU) has supported in the agriculture sector in Georgia since the 90's, initially via food security budget support programmes, and more recently through projects implemented by International Organizations, and/or NGOs. In 2012, the EU funded the **European Neighborhood Programme for Agriculture and Rural Development (ENPARD)**, with a budget of €40 million. In 2014, an extra €12 million were added to the ENPARD to finance further actions. The general objective of ENPARD is to increase food production in Georgia and reduce rural poverty. The specific objective is to support the implementation of the national sector strategy and strengthening small farmers' organizations.

The EU is also supporting Georgia in needed improvements in the food safety and phyto-sanitary (SPS) fronts, and to align the SPS systems, policies and legislation with the EU regulations in these fields. To this aim, the EU provides substantial technical assistance and capacity building through various initiatives:

- **A Comprehensive Institutional Building Programme** (EU finding €2.7 million) will support the National Food Agency of Georgia during 2012 in improving its functioning.
- **A Twinning Project in support of the Revenue Service of Georgia** (€ 1 million) is currently providing assistance to improve the food safety border controls of Georgia.
- Via the FAO, the **EU is assisting Georgia in controlling the foot and mouth animal disease** and several TAIEX and other technical assistance actions are constantly implemented to provide further support to Georgia to improve its food safety mechanisms

In 2015, **Georgia's Agriculture Ministry and National Food Agency signed a memorandum with Mercy Corps, outlining plans to create 5 bio-safety centres.** These will be situated in two towns in Kakheti (Dedoplistskaro and Signagi) and three towns in Kvemo Kartli (Gardabani, Marneuli, and Bolnisi). Two will be equipped by Mercy Corps, and three by the Agency. These provisions aim to reduce the risk of cattle disease, to assist the development of animal husbandry, and to strengthen the capacity of various governmental structures. The memorandum also provides for the restoration and modernization of routes required for the seasonal movement of cattle, which have not been restored since the collapse of the USSR.⁵²

Another relevant project to pastures management includes the International Fund for Agricultural Development (IFAD) project “**Rural Development Project for Mountainous and Highland Areas project**” to improve community access to productive natural resources, namely firewood and summer grazing, and access to markets and social services. In the first phase, four spatially separate mountain districts were included, namely Ambrolauri, Azpindza, Dusheti and Shuakhevi.

In the second phase, three districts remained, but Ambrolauri was replaced by the more remote Oni District. The project has supported the renovation and construction of 63 km of community road and 14 bridges in mountainous areas and was effective in improving general accessibility and quality of life for beneficiary communities, however, according to the project's evaluation report, no apparent impact on farm productivity and household incomes had resulted from these projects⁵³.

⁵² Georgian Agriculture Finance Bulletin, Edition #32, April 2015

⁵³IFAD, 2014. Final Project Performance Assessment of the Rural Development Project for Mountainous and Highland Areas project 2001 - 2011

From an environmental point of view, several projects related to pastures management and grazing activities are implemented through MoEP in Georgia. The main project related to pasture management is the Project of the Sustainable Management of Pastures in Georgia.

Other projects implemented by MoEP are also supporting pastures management and include the following:

- **Project for Harmonization of Information Management for Improved Knowledge and Monitoring** of the Global Environment in Georgia, implemented by UNDP with funding from the Global Environment Facility (GEF). The project aims to develop individual and organizational capacities in MoEP and the Environmental Information and Education Centre in order to improve monitoring of environmental impacts and trends for collaborative environmental management.
- **Project for Integrated erosion control in mountainous regions in South Caucasus** implemented by the German International Cooperation (GIZ). The project aims at supporting APA to strengthen several PAs in Georgia. The project combines a community-based approach with ecosystem-based adaptation measures. Erosion and the condition of pasture land are assessed and mapped in the pilot regions as a basis for identifying suitable erosion control measures and incentive instruments will be developed, for improving pasture quality, adapting lease agreements and establishing and developing value chains.
- **Project for Applying Landscape and Sustainable Land Management for Mitigating Land Degradation and Contributing to Poverty Reduction in Rural Areas** implemented by the United Nations Environment Programme (UNEP) through the Regional Environment Centre (REC) for the Caucasus with funding from GEF.
- **Project for the Expansion and Improved Management Effectiveness of the Achara Region Protected Areas**, implemented by UNDP through APA with funding from GEF.
- **Project for the development of pastures management plan outside PAs** implemented by World Wildlife Fund (WWF) through funding from the German Government. The project covered the Javakheti summer pastures and the Chachuna winter pastures. The project was established a methodology for assessing pastures and identified 3 levels of pasture degradation as well as recommendations for each type of degradation. The project also implemented pilot activities at the level of the degraded pastures.

Other institutions have also initiated projects which can support pastures management include the following:

- **Project for fostering regional and local development in Georgia** implemented by MRDI, with one component implemented through UNDP with funding from the Swiss Cooperation Office (SCO) and the Austrian Development Cooperation (SDC) and another component implemented by GIZ with funding from the German Government. The project aims at strengthening the regional development process, ensuring a coordinated and harmonized approach among stakeholders which can play an important role in supporting pastoralists and pastures management.
- **Fund for rural development** under the office of the Prime Minister. The fund was established in 2013 with a budget of US\$1 billion credit and it is expected that initiatives under this fund can support pastures management at local as well as regional level in Georgia.

8. Proposed Roadmap for Pastures Management in Georgia

The report has highlighted the importance of pastures as a driver for rural development and poverty alleviation. Pastures also constitute an important part of Georgia's ecosystem and contribute significantly to the functioning of its economic, social as well as environmental services.

The following sections provide the proposed way forward for addressing policy and institutional aspects related to pastures management in Georgia.

8.1. Establishing a national committee for steering a national dialogue for pastures management

The establishment of a national committee can support a participatory approach involving all concerned stakeholders in identifying the needed strategy and priority actions for pastures management (refer to **Box 14 and Box 15**). Through such a Committee, national consultations can be planned to include all relevant departments within the concerned institutions, local Governments, municipalities, pastoralists, NGOs and the international donor community into a national dialogue for reaching consensus and partnership building for pastures management.

The composition of the committee should remain restricted to a limited number of institutions in order to allow its effectiveness in decision making and can include the following:

- Ministry of Agriculture (MoA)
- Ministry of Environment Protection (MoEP)
- Ministry of Economy and Sustainable Development (MoESD)
- Ministry of Regional Development and Infrastructure (MRDI)
- Associations of shepherds

Box 14. Working Group of the National Rangeland Management Strategy & Policy for Namibia

In 2008, Namibia initiated the development of its National Rangeland Management Strategy & Policy, which was based on an extensive participatory approach. The Strategy & Policy were approved by the Cabinet and their implementation launched in 2012.

Namibia's Strategy & Policy was prepared by a Working Group including the following members:

- Various departments of the Ministry of Agriculture, Water & Forestry
- Active NGOs in the field of Rural Development & Nature Conservation
- A Farmers' Support Programme
- Consultants

Box 15. National Committee of the Updated National Rangeland Strategy for Jordan

As a follow up on the National Rangeland Strategy for Jordan of 2001, Jordan initiated the preparation of its Updated National Rangeland Strategy for Jordan in 2013. The Updated Strategy was launched in 2014 and was based on an extensive participatory approach.

For this purpose, Jordan established a National Rangeland Strategy Committee including the following members:

- Various departments from the Ministry of Agriculture
- Active NGOs in the field of Rural Development & Nature Conservation
- Consultants

8.2. Understanding pastures management in the new development paradigm

It is important to reach a common understanding of the situation and challenges governing pastures management in Georgia in order to generate a clear and comprehensive vision of addressing these challenges. Pastoralism within the new development paradigm has emphasized two key aspects which are structural to consider and which are “**Mobility**” and “**Types and breeds of animals**”.

Mobility allows the distribution of grazing pressure and helps tracking variability of nutrients at larger scales. Mobility is now clearly understood as a factor contributing in improving pastoral productivity and ecological sustainability, as well as supporting food security and land management.

Adapted types and breeds of animals promote complex behavioral traits in breeding, at the level of the herd such as its capacity for learning, propensity to bond emotionally with the herders, propensity for feeding selectively.

Adequate pastoral practices are proved to support “**sustainable management of natural resources of the pastures**” as they take into account the pastures dynamics; degraded pastures appear as a consequence of limiting pastoral activities and disrupting mobility, but also due to inadequate land tenure, and other inadequate policy and institutional changes which disrupt customary use patterns of the pastures.

Experience from other countries has shown that misunderstanding pastures management has been a common practice and as such new approaches have looked into scrutinizing such misunderstandings by investigating the properties of the systems which were overlooked (refer to **Box 16**).

The analysis conducted in this report has converged on the key challenges facing Georgia in moving forward a national reform for pastures management at the policy and institutional levels; these include the following aspects:

➤ **Harmonize legal and policy framework governing pastures**

Inconsistencies in the legal framework for pastures management are negatively affecting pastures development, the two key regulations related to pastures management (namely the Law on State Property of 2010 and the Law and Code on Local Self-Government of 2014) have continuously included conflicting directives with regards to the privatization of pastures as well as to relegating their ownership to local governments and to keep them within the states ownership.

Moreover, regulations for pastures management are outdated; currently, the only governmental agency developing regulations for sustainable management of pastures is APA and this is mainly done within PAs boundaries.

This conflicting legal framework is also reflected at the policy level with regards to pastures management; current policies are mainly focused on the need for the state and municipalities to generate public income by selling and leasing pastures and collecting related taxes; while there is a pressing need to reconsider the important role of pastures management in economic and social development of rural areas and in reducing poverty.

As such, it is important to ensure that appropriate policies are in place to avoid that low-income pasture users don't lose access to pastures or face increased taxation without getting economically feasible returns. It is thus important to assess the approach adopted by ASP and municipalities for fixing leasing prices pastures and identify economic scenarios which could replace current lease value of pasture lands under ASP which might be challenging conditions to meet by shepherds.

It is also important to investigate the land tenure of transhumance routes and the possibility for the acquisition of private parcels on these routes.

➤ **Strengthen institutional responsibilities for responding to pastoral development**

The multitude and confusing legal framework is also leading to unclear and overlapping institutional responsibilities for pastures management; this adds up to a historical background of a weak agricultural sector and a weak local development set up in Georgia. Institutional strengthening is crucial to ensure that the concerned institutions can be involved in pastures governance and service delivery including the provision of basic services and key infrastructure, as well as markets development.

The current institutional responsibilities should be strengthened in order to respond to key challenges for pastures development and pastoralists' livelihood including:

- Limited extension services for small farms including veterinary services and livestock certification capacity,
- Limitations of the production value chain, ensuring to support that animals are in better shape to overcome the bottleneck of high rejection rates on export markets;
- Weak agro-processing including collection and storage facilities, in addition to post-production stages such as packaging and branding
- Lack of market access and organized wholesale and retail markets and export opportunities,
- Lack of affordable credit for small farm agriculture.

Box 16. Understanding pastures management: perceived problems to generated opportunities⁵⁴	
Key characteristics perceived as problems	<ul style="list-style-type: none"> - Low productivity and High variability - Intensification of per hectare output (overgrazing) - Low population density - Land degradation (linear ecological processes) - Common property (often perceived as open access)
Measures implemented	<ul style="list-style-type: none"> - Lower stocking rates (intensification of per head livestock output) - High yielding breeds introduction and discouragement of locally adapted livestock - Privatization and sedentarization - Market orientation of products
Overlooked system properties of arid rangelands	<ul style="list-style-type: none"> - Traditional system resilient to variability in time and space - Communal or mobile pastoral systems subject to informal rules for management - Multi-purpose function of traditional systems - Complex rangeland dynamics (not linear, cross-scale interactions)
Problems generated by the measures	<ul style="list-style-type: none"> - Reduced flexibility due to specialization, financial pressure - Increased vulnerability - Low stocking rates not reversing degradation - Indirect effect: increased risk of degradation
Key characteristics seen as opportunities in a new development path	<ul style="list-style-type: none"> - High variability as a key to high biodiversity and agro-diversity - Low population ¼ less waste, less management needed, wilder areas, other human nature relationship - Low energy demand and many opportunities for clear energy production (e.g. solar, wind energy, wireless communications). - Traditional common systems as solutions to current open source access in nationalized systems - Low productivity for agriculture but higher for other land uses (e.g. game production, tourism)

⁵⁴Easdale, M. H. and Domptail, S. E. 2014. Fate can be changed! Arid rangelands in a globalizing world. A complementary co-evolutionary perspective on the current 'desert syndrome'. Journal of Arid Environments 100-101: 52-62.

8.3. Strengthening organizational structures of pastures users

The report has indicated the reluctance of shepherds to work within formal organizational structures in light of the historical and cultural background in Georgia. However, pastoral structures can have an important role in supporting shepherds by optimizing current practices as well as facilitating access to services including the following:

- **Organizing access to winter and summer pastures**, specifically in light of the loss of summer grazing areas in the Russian Federation and the inability of households to purchase feed to maintain animals over winter which dramatically increased pressure on winter pastures.
- **Improving feeding practices**, given that the lack of additional fodder is due to both a cultural understanding and economic considerations which can be best addressed through organized structures at the level of the shepherds.
- **Addressing constraints related to transhumance routes**, specifically with regards to the correction of routes to reduce the difficulties moving between winter and summer pastures as well as organizing the sequence of animal movement, and to address poor infrastructure on the transhumance routes.
- **Improving access to extension services as well as financial services**, services can be provided in a more efficient and effective way when shepherds are better organized to benefit from veterinary services, livestock certification, support for agro-processing services including collection and storage facilities, access to affordable credit for small farm agriculture.
- **Using new technologies**, collective operations can be further optimized through adoption of new technologies are adapted to the pastoral livelihoods such as motorbike, portable motor-pumps, phone banking, resource mapping using Google earth.
- **Increasing resilience and strengthening pastoral risk management**, in order to manage risks including those related to climate change and account for factors at the scale of operations relevant to pastoral systems at regional level and not only a development approach set by default at the village and community.

It is therefore important to investigate the most appropriate modalities for bringing the shepherds into associations or cooperatives (refer to Box 17).

The role of MoA in supporting cooperatives should be strengthened and extended to the shepherds and small farmers to strengthen the livestock sector as a whole. Cooperation between shepherds and regional authorities and municipalities should also be investigated and integrated within the on-going local and regional planning processes under the MDRI.

Given extensive experience and know-how generated through the pastures management plans under MoEP/APA, up-scaling of the findings of these plans should be considered with regards to identification of **alternative pastures** as well as **proposed actions at technical/agronomical level** such as improving forage quality, potential of complementary feeding, management of seasonal variability of forage growth, fertilization, strategic positioning of animal watering installations, distant pastures management.

Box 17. From informal to formal Pasture Committees in Kazakhstan

Between 2009 and 2012, Kazakhstan implemented the Sustainable Rangeland Management Project with the support of UNDP/GEF and which aimed at “Demonstration of good practice in rangeland management that promotes both the ecological integrity of natural grasslands and rural livelihood”. Among its planned results at the local level, the project supported the establishment of grazing rules within the villages involved in the Project and which were approved by the villages’ Pasture Committees.

The project support the Pasture Committees evolved into an institutional set up, by transforming these Committees into cooperatives or into a public funds (as appropriate) in order to benefit from Governmental procedures and support for such structures. Although the local stakeholders were aware that the Pasture Committees don’t benefit from legally approved functions, they were considered as an important transitional step needed for the mobilization of local farmers into legally recognized structures.

In 2009, four Pasture Committees were established in the selected pilot rural districts, based on open election of members at joint meetings of pasture resources users and “Statutes of the Pasture Committees” were approved by pasture resources users.

In May 2010, first meetings of Pasture Committees were held to plan needed improvements of the pasture management and infrastructure; Investment Plans were also developed at the level of each Committee.

By end of the project in 2012, three out of four of the pasture committees have become cooperatives and one pasture committee became a public fund. Accordingly, all the Pasture Committees evolved into legally registered functions at the local agency of the Ministry of Justice.

8.4. Establishing a national strategy for pastures management

Based on a better understanding of pastures management, it will be possible to establish a strategy and set a common vision for long-term as well as short-term objectives for pastures management. The vision should allow the positioning of pastures and pastures management within the appropriate economic, social as well as environmental development framework and ensure that the relevant policies and plans are aligned with the new vision for pastures management.

Through the strategic vision, it will be possible to identify priorities for action in order to respond to policy, institutional as well as technical gaps related to pastures management. A limited number of priorities with a set timeframe and implementation modalities should be defined; and the institutional responsibilities related to each action clarified.

The national strategy will also allow mobilizing needed financial and human resources from national as well as international sources.

International experience has shown that a strategic approach for pastures management can support a coherent and long-term policy and institutional reform which will lead to significant improvements in the sector.

Annexes 1 and 2 provide a summary of the evolution of pastures management in Kyrgyz republic and in Austria respectively; these confirm that significant improvements of the livestock sector and the overall management of pastures can be reached when a strategic and long-term policy reform is adopted in the country.

Annex 1. Case study on the evolution of pastures management in Kyrgyzstan

After Kyrgyzstan's independence in 1991, fragmentation of responsibilities over pastureland between different levels of government authorities provided ample opportunity to wealthy and influential farmers to acquire exclusive access rights to the most productive pasture areas. This led to over-grazing of winter pastures near villages, reduced attention by communities to the maintenance of vital pasture infrastructure, and under-grazing of summer pastures, leading to degeneration of pasture composition and quality⁵⁵.

In 2009, Kyrgyzstan passed its "Pasture Law", which laid a legal foundation for decentralized community-based pasture management. This pasture management reform started as a measure to devolve management responsibilities to local governments and communities in order to promote sustainable resource management practices and ensure effective management. As such, a major management transfer of pasture resources was made from central and provincial/district level administration to the level of local governments and further to resource users.

The major change in policy was possible in part thanks to the political economy for executing such change at the national level. An effective national champion in the form of the Pasture Department Director was able to push for the changes in the system and secure political support sufficient to pass the legislation. These policy initiatives in support of the smallholders in the livestock sector were linked to social targets such as increased access to pastures, economic factors such as improved animal productivity and profitability (in addition to increased number of livestock), and environmental targets, such as improved areas of pasture and increased areas under sustainable use.

The key features of the 2009 Law on Pastures include the following (refer to Figures below):

- Pasture Users Unions are bodies of territorial public self-government with judicial authority;
- All members of Pasture Users Unions (all adults of the locality) have the right to use pastures within the provisions of the Community Pasture Management Plan;
- The executive body of the Pasture Users Unions is the Pasture Committee composed of pasture users (majority representation in the Committee), specialists and deputies of local self-government bodies;
- The Pasture Committee shall: develop and implement long-term and annual Community Pasture Management Plan; monitor pasture conditions; issue pasture tickets to herders in accordance with the annual Community Pasture Management Plan (head-based; with authority to set the annual fees); manage pasture use revenue for Pasture Committee administration and for pasture infrastructure improvement;
- Pasture lease and sub-lease contracts are banned;
- The boundaries of pastures between local administrative entities (Ayil Akmaks) are defined and agreed.

Since then, various donors supported the government for development and adoption of an adequate legal and institutional framework for governing the management and use of pastures and veterinary services, infrastructure environment for farmers and herders, with a strong emphasis on the livestock sector. This allowed increasing the productivity of livestock farmers, and reducing animal diseases that have an impact on public health, such as brucellosis.

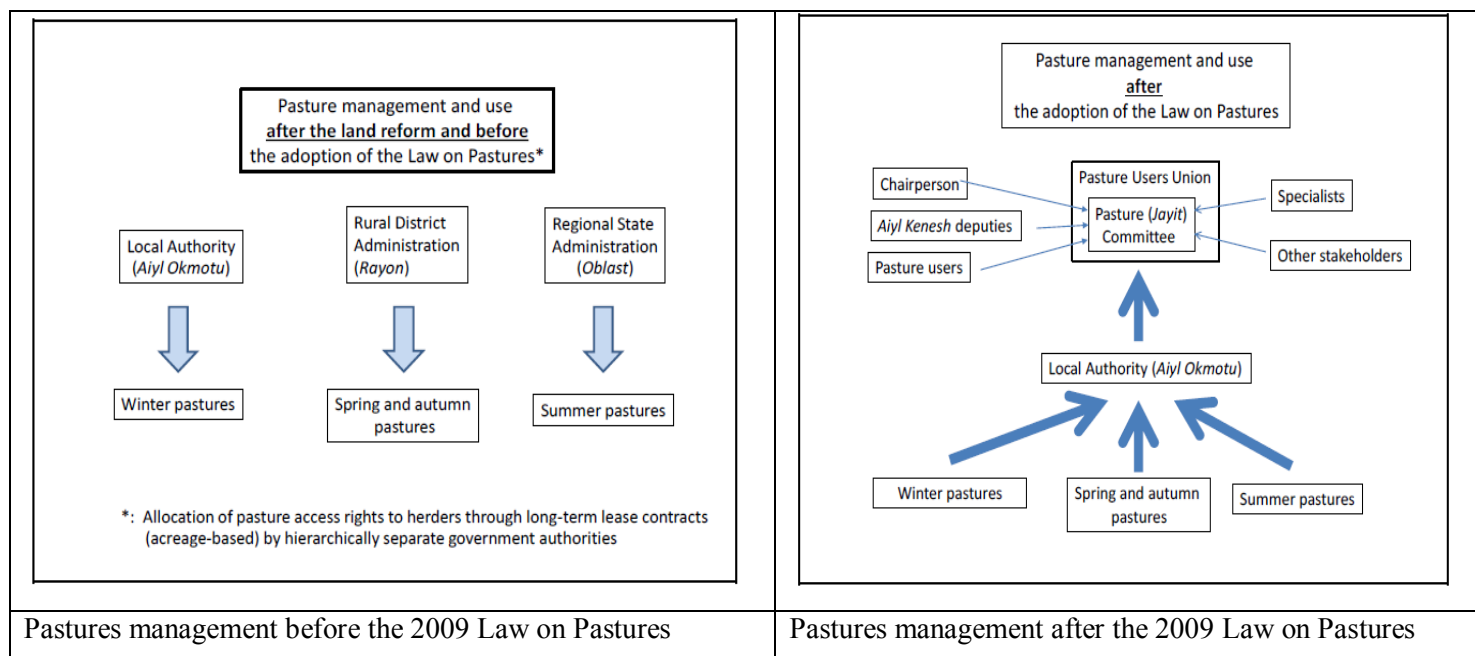
⁵⁵IFAD, 2016. Access to Markets Project. Detailed project design report

With donor support, 454 Pasture Users Unions were established since 2010 across the country covering all pasture resources. The assessment of one of these projects confirmed that significant beneficiary contributions to infrastructural investments, a steady increase of pasture fees collected was recorded (from KGS 33 million in 2010 to KGS 130 million in 2014) and full self-financing of some infrastructure rehabilitation after the grant support from the project were a clear indication of their empowerment and sense of ownership. Evaluation surveys indicated that in over 80 per cent of the Pasture Users Unions, the majority or all pasture users pay pasture tickets.⁵⁶

Beyond legal and institutional support, international donors are also providing needed access to improve the products aggregation functions within the livestock value chains (including cold chain infrastructure) in order to support processing expansion, while allowing smallholders to be part of — and benefit from it. This will allow setting quality standards for raw products, ensuring quality control and delivery mechanisms, and achieving a better managed seasonality of supply.

In addition to donor support, the "Programme of pasture farming in the Kyrgyz Republic" (2012-2015) was also approved by the Kyrgyz Government resolution #89 dated February 2012. Despite constraints and challenges still facing the sector, major improvements are already noticeable.

Between 2009-2014 the number of heads of cattle, horses and sheep increased by 14 percent, 16 percent and 27 percent respectively.⁵⁷ Between 2008 and 2013, the production of cattle milk and meat increased by 12 percent and 6 percent respectively.⁵⁸ Reports have indicated that over the past 3 years, milk yields increased from 4-5 to 6-7 litres per cow/day; and weight gains for cattle bred for meat increased from 280 kg to 300 kg prior to slaughter. This is attributable mainly to improved access to remote pastures and water as well as a significant reduction in disease supported by a long-term policy and institutional reform for the management of pastures in the country.



⁵⁶ IFAD. 2016. Project Performance Assessment of the Agricultural Investments and Services Project. Kyrgyz Republic

⁵⁷ FAOSTAT

⁵⁸ FAOSTAT

Annex 2. Case study on the evolution of pastures management in Austria

The surface area of agricultural land in Austria is around 3.19 million hectares, of which 1.39 million hectares are arable land and 1.73 million hectares are permanent grassland (pastures and meadows). Over the past 50 years, agricultural land has decreased by around 0.9 million hectares, of which the reduction of grassland in the alpine area was around 0.7 million hectares turning into forest areas or was built upon.⁵⁹

Mountain pastureland stretches from altitudes between 700 m and 2000 m. Pasturing traditionally is organised in seasonal progressions following altitudinal belts. It starts at the stage of the “Niederalm” (lower pastures 700 - 1100 m), either in private or in common property, completed by the commonly governed “Mittelalm” (middle pastures 1200 - 1400 m), the “Hochalm” (high pastures 1600 - 1700 m) and the “Galtalm” (1800 - 2000 m). The latest, in former times were utilized by young cattle and undemanding sheep, whereas on the former three, milk cows, mother cows, horses and occasionally pigs were held, supervised by alp staff. Nowadays most of the pastures situated above the climatic timberline are abandoned, while considerable parts of the pastures in lower and middle altitudes have remained in use as shown in the Figure A2-1 below.⁶⁰

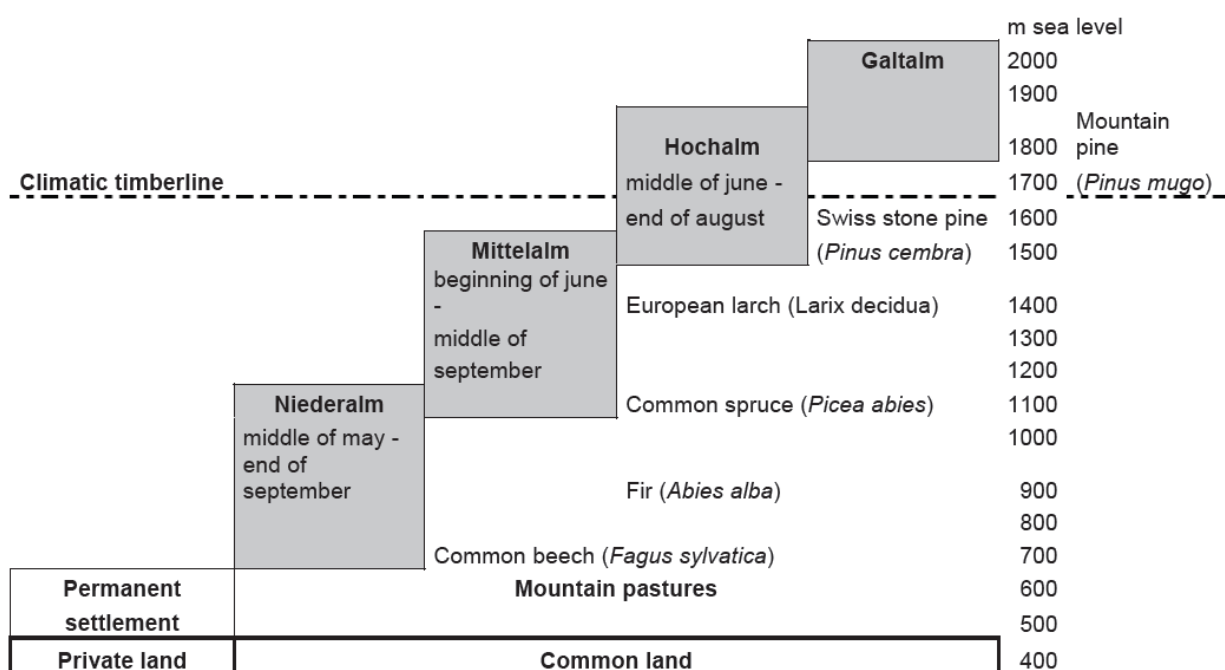


Figure A2-1. Organisation of agriculture and the mountain pasturing system in Austria

Management patterns and management strategies in Upper Austrian mountain pastureland follow key patterns classified as follows:

1. Intensification
2. Rationalisation /Simplification
3. Traditional rotation
4. Maintenance and gradual withdrawal

In the course of overall structural transformation in the Austrian economy, Alpine pasture use lost a great deal of its significance between World War II and the mid-1970s. Many Alpine pastures were left unused,

⁵⁹ Buchagraber K., Schaumberger A. and Potsch E.M. 2011. Grassland Farming in Austria - status quo and future prospective

⁶⁰ Peter Kurz. 2013. Management strategies and landscape diversity in commonly governed mountain pastures: a case study from Austrian Alps

especially in eastern Austrian mountain pasture areas. Between 1952 and 1986, the total mountain pasture area was significantly reduced; the forested pasture areas lost 27 %, the unproductive pastures areas 28 % and the Alpine pasture area 16 %; leading to a total loss of approx. 142,000 hectares of pasture area. After that time, the introduction of state support for Alpine pastures as well as the regulation on Alpine pasture milk in the Austrian market regulation law resulted in a certain degree of consolidation in Austrian Alpine pasture use.

In the late 1960ies, withdrawal of alpine pasturing was damped by the introduction of several national support programmes. First and foremost stands the so-called “Alpungsprämie”, granted to farmers for each livestock-unit brought up on mountain pastures. In addition, support was completed by facilitation for investments in buildings, infrastructure and projects on re-cultivation of pastureland.

In 1995, the Austrian programme for the promotion of an environmentally compatible, extensive and natural habitat-preserving farming (ÖPUL) placed high value on the entirety of Austrian farming in its first programme period. As such, mountain pastureland was integrated into this single farm payment agro-environmental scheme. When entering the national agro-environmental scheme ÖPUL, farmers have to verify sufficient area of forage acreage for the number of livestock held. Alpine pastures are a welcome opportunity with farmers to optimize this balance. However, they are only accepted if kept in a good condition, while areas covered with weed, shrub, heather or wood are excluded from the balance adopted for calculation of subsidies (s. ÖPUL 2007). This recently has stimulated renewed economic appeals to improve conditions of alpine pastures and their management. A total of 89.2% of all the utilized area today is farmed according to the ÖPUL criteria. The high acceptance (73.1% of all farms currently take part in ÖPUL) is proof of the great willingness of Austrian farmers to integrate environmentally-friendly and resource-sparing measures into their farming systems. There are 28 differing measures offered in the current ÖPUL 07 programme, of which many have also influence on the quantity and quality of forage production from grassland.

Since 1995, Austrian hill farmers have also been able to avail themselves of promotion schemes for hill farmers provided by the European Union. In western and southern Austria, traditional pasture use for milk and cheese production is still very important, whereas eastern Austrian Alpine pasture use is dominated by extensive young livestock keeping. In 1997, Alpine pastures and mountain meadowland covered 851,128 hectares (approx. 25% of Austria’s total agricultural area). With more than 12,000 Alpine pastures in use, on which approx. 70,000 Alpine pasture farmers grazed approx. 500,000 head of cattle, Austria has the highest alpine farming figures in the EU.⁶¹

Mountain farming in Europe faces many challenges. On the one hand, it is a provider of high quality food with attributes linked to the mountain environment and the system of production. In addition society also recognizes the benefits of sustainable mountain farming systems that respect the environment, notably in terms of biodiversity and maintaining High Nature Value grassland and related ecosystem services such as protection of soil, carbon sequestration and landscape protection. On the other hand, despite global concerns of food security and the anticipated need to increase world food production over the coming decades, it is seldom the case that mountain farms can nowadays compete economically with lowland farms in the production of dairy and meat products. Therefore, mountain farmers need to obtain a premium price for their products, or payments for providing public goods and services as a by-product of farming which have wider benefits for society, or additional off-farm income.⁶²

⁶¹ http://austria-forum.org/af/AEIOU/Almwirtschaft/Almwirtschaft_english

⁶² Hopkins A., 2011. Mountainous farming in Europe