

A Contextual Overview
of the Use of Draught Animals
in the Samstkhe Javakheti Region
of Georgia



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Abstract

A baseline market survey carried out by the SDC-funded Mercy Corps Alliances Program (which focuses on market development in the livestock sector) revealed significant levels of draught animal ownership amongst the 2624 households surveyed in the project area in Samstkhe Javakheti region of Georgia. 17.3 % of households owned one or more oxen, 10.3% owned one or more horse and 2.4% owned one or more donkeys. Draught animal usage is absent in discussion and decision making in agricultural fora and in the activities implemented both by government and INGO projects operating in the region and no current literature exists on the subject. The following study was undertaken to discover more about the husbandry and use of the three types of draught animal used in Georgia. The study revealed that the widespread use of draught animals has persisted due to their suitability to the small plots of often relatively inaccessible land and to timber extraction from the mountainous forests. Households in the region are often short of capital and lack access to credit to buy, maintain and run cars and tractors but can provide feed for their animals with relative ease and much smaller capital outlay. Following the collapse of communism in 1991 and the ensuing fuel crisis the value of draught animals increased as a source of power and for the haulage of timber. Draught animal owners handle their animals with skill and care and though many owners shoe their animals and make their own equipment the decline in certain rural specialists including harness makers, saddle cloth makers and farriers is a constraint to most users. This decline is attributed to 'modernization' and the stigma attached to the use of donkeys in particular and to draft animals in general by the younger generations who through telecommunications are increasingly exposed to urban values. It is hoped that documented information could help open the way to the recognition and consideration of the use of draught animals in Georgia in the formulation of policy and agricultural interventions¹.

1. Introduction

Draught animal usage in Samstkhe Javakheti for land cultivation, transport and forestry and herding is widespread throughout the villages surrounding the regional capital Akhaltsikhe and is in evidence in the town itself particularly in winter when donkey's and horses are used to bring in kindling for sale from the outlying villages. Horse and donkeys are also used as pack animals and horses used for herding sheep and cattle in the mountains. However draught animal usage is absent in discussion and decision making in agricultural fora and in the activities implemented both by government and INGO projects operating in the region and there is no formal literature available on the subject. National agricultural aspirations centre around land consolidation, intensification of production and mechanisation.

The Swiss Agency for Development and Cooperation (SDC) funded Mercy Corps Alliances Program is a livestock project focussed on development of the beef and dairy market sectors and commenced in October 2008. The program found when questioning key informants at the advisory level about the use of draught animals in Georgia, that they commonly stated that draught animals were not prevalent or were 'not important' in Georgian agriculture with users of draught animals considered backward; peasants rather than farmers². However a survey of 2,624 respondents conducted by the program

¹ Particularly in light of donor initiatives surrounding climate change adaptation and environmental sustainability.

² In terms of perception, a Georgian farmer would be considered a peasant if they use draught animals irrespective of the size of the land holding: a person farming a mechanized 2ha holding would be considered a farmer, the same person on the same unit using draught animals would be considered peasant even if productivity was the same.

using a closed ended household questionnaire to determine the nature of farm income and the exact role of livestock in the lives of the program target group of small-scale livestock producers, corroborated the widespread ownership of draught animals³ which prompted the desire to provide a detailed contextual overview of draught animal usage in the region.

Eight open ended interviews were conducted with seven owners of donkeys, horses and oxen and a local farmer who works with the Alliances Program, and showed that although draught animal usage is prevalent, their support services are in general, in decline. Owners often shoe, make carts, equipment and harness themselves in tandem with ‘specialists’ who perform the function of blacksmiths and farriers. However, the number of specialists has decreased and some items such as harness are hard to replace, repairs being made to old, existing equipment. Donkeys in particular are associated with poverty and ‘backwardness’ and as such numbers have declined and breeding is haphazard. The two donkey owners interviewed had bought their donkeys from a town 60km away. Horses too are sourced through word of mouth and scouring local villages. Oxen are more easily purchased from the livestock market and hold a higher status than horses being more expensive to purchase and keep and retaining resale value as meat.

Healthcare, nutrition and shoeing could undoubtedly be optimized⁴, but are presently balanced at the level at which owners on limited incomes can maintain necessary work outputs for minimum expenditure based on available resources. For optimization to take place draught animal owners would require recognition and substantive inputs from external sources for sustained improvement. However improvements in access to and quality of information for the breeding and acquisition of animals; and the ability to purchase equipment could be effected with minimal facilitation based on local resources and initiatives and are discussed in detail in the conclusion.

1.1 Agricultural Livelihoods in the Region

Samtskhe Javakheti is a southern region of Georgia adjoining the North Eastern border of Turkey and the Northern border of Armenia. The area is characterised by a population comprising of approximately 20% ethnic Armenians. Akhaltsikhe town with a population of 20,000 is the main municipal hub and principal market town of the region as a whole. The climate is continental and the terrain is mountainous with cultivation taking place in the fertile valleys and lower slopes. High mountain pasture is used for hay making and summer grazing. Irrigation is practiced but rainfall has been high throughout the year in recent years. Average land holdings are 0.75ha and main crops are potatoes, maize and beans as well as vegetables including tomatoes and onions. The livestock sector is dominated by dairy and beef production with sheep production in more mountainous areas. Draught animal usage for land cultivation and transport is essential in a region where farming often takes place on small, fragmented and often inaccessible land parcels, wood from high mountain slopes is the source of fuel, transhumance⁵ on high mountain pasture is widespread and high pasture is used for hay making. The high pasture is largely inaccessible to motorized transport and horses are used for the transport of goods, hay to and cheese from the mountain. Horses are also used for herding cattle and sheep and goats. Draught animals are cheaper than tractors; typically an oxen will cost around 1,800 Lari (about \$1,000), tractors are far in excess of this. Feed costs of donkeys and horses are a fraction of the fuel costs of a tractor and even oxen as the most costly draught animal to keep,

³ See Section 3.

⁴ Worming is carried out using local ‘vets’ with varying levels of qualification who sell anthelmintics. Worming is usually carried out when condition visibly deteriorates or not at all. Nutrition depends on the owner, some supplementing with barley, maize and apples for horses and donkeys and maize flour and cotton cake for oxen, other poorer owners of horses and donkeys relying on hay and grazing. Shoes are made of metal. Equipment, quality/design of shoes and fitting/hoof care/trimming could be improved.

⁵ Villagers relocate to wooden dwellings and land on the high mountain named concomitant to their villages on the lower slopes. Cattle are grazed and cheese made and stored in brine for sale in the town Akhaltsikhe. The high pasture is accessible by the lorries used for forestry or by 4x4 but still represents a challenge. Horses are used for the transportation of household goods, cheese and transport up and down the mountain as it is quicker and cheaper, as well as herding.

compare very favourably to the fuel and maintenance costs of tractors as well as retaining a high resale value as meat.

1.2 The Alliances Program Survey Results

The initial figures obtained through the Alliances Program inception survey of 2,624 households encompassing three municipalities; Adigeni, Aspindza and Akhaltsikhe, indicated widespread draught animal ownership throughout the project area. The questions in the survey pertained only to types of animals owned and the figures obtained were for ox, horse and donkey ownership per surveyed household. Table 1 shows the figures for ownership per household of the 2,624 people surveyed and Map 1 the distribution of draught oxen in the surveyed communities.

Table 1: Number of draught animals (Oxen, Horses and Donkeys) in the survey area and number of Households (HH) owning one or more draught animals

	Oxen	Horses	Donkeys
Number of Draught Animals	866	338	65
HH owning 1 or more draught animals	453	270	62
% HH owning 1 or more draught animals	17.3	10.3	2.4

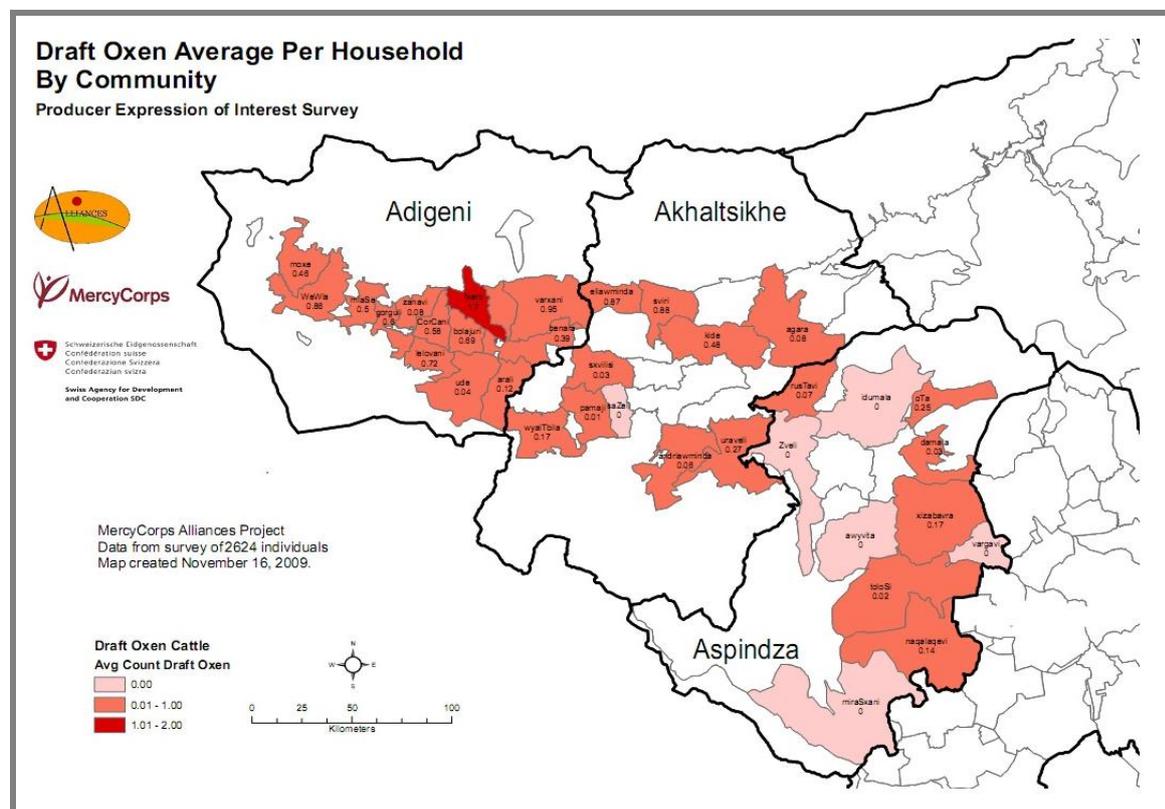


Figure 1 Map showing distribution of draught oxen in the surveyed communities

2. Methodology

The eight interviews were held in-situ, in villages and fields and were semi formal with a set of twenty open ended questions which covered:

- Income generating activities: amount of land owned, crops farmed
- How many and what type of draught animals owned
- Uses/activities throughout the year
- Work outputs
- Feeding, breeding, purchase and training, castration, when and who and whether male or female animals are preferred

- Purchasing, buying and making of equipment, harness and carts
- Shoeing when, where, how often, how and carried out by who
- Health problems and their treatment
- Grazing practices
- Whether owners hire or lend their animals and what kind of payment or in kind arrangements exist
- Problems and constraints encountered

Seven interviews were conducted with local draught animal users and one general interview with an agricultural advisor for the Alliances program who is a local farmer with excellent knowledge of local farming practices and whose information has been amalgamated into the sections below. The interviews were conducted in different villages in three different municipalities at varying distances from Akhaltsikhe which included very mountainous and forested terrain as well as valley and lower mountain slope arable land.

3. Findings: Draught Animals in Detail: Husbandry and Use

Draught animal type, amount of land owned, main sources of income and the work output for the different types of draught animals have been collated in Table 2. Compilations of the remaining information have been summarised according to each type of animal.

Table 2 Draught Animal Type, Land Owned, Income, Uses & Work Output

Draught Animal Type And Village	#	Land Owned (ha)	Main sources of income (In order of priority)	Uses/Activities	Work Output
Donkeys					
Ude Village	1	0.6	Farming: potatoes, maize, beans, onions and garlic	Transport to and from fields including, seeds, harvested crops, hay and manure for spreading and transport of wood for winter, transport of goods.	N/A
Tskruti Village	1	0.65	Farming Sale of kindling in town in winter Building	Same as above Transport of kindling wood into town and building materials from town to village. Land cultivation; ploughing, rowing up potatoes.	200-300kg 3-4 km 0.2ha/day
Horses					
Ude Village	2	0.7	Farming Land cultivation services Shoeing	Land cultivation Transport of goods	0.5 ⁶ ha /day
Tskruti Village	1	1 5(rented)	Farming: dairy, beef stores, pigs and crops Forestry	Riding Transport of goods Herding (cattle) Transport of goods and wood for cheese making to high pasture	N/A
Nakalakevi Village	1	0.95	Farming	Land cultivation Herding (sheep) Riding Transport of crops, hay and goods	0.15 ⁷ ha/day

⁶ Spring rates. Tractors or oxen are used for autumn ploughing as the ground is heavier.

⁷ On mountainous terrain, using a more complicated reversible plough from the Soviet Era.

Oxen					
Ude Village	2	0.65	Farming Hire of oxen for ploughing	Land cultivation Transport of goods	0.25/ha
Atskhuri Village	2	0.5 (crop 1 hay)	Forestry Farming; potatoes & vegetables	Timber (haulage) Land cultivation Transport of crops, hay and goods	Ploughing 0.1ha/8hrs Harrowing 0.35ha/5/6hrs Weeding 0.4/4/5hrs Harvesting potatoes 0.3/5hrs Timber haulage 1m ³ over 7km

3.1 Oxen

The results of the Alliances survey showed oxen to be the most prevalent draught animal. Oxen are used for ploughing in autumn as well as spring, for harrowing, harvesting potatoes, rowing up and inter row cultivation and for transport as well as timber haulage. They are used in pairs for all operations although one owner reported that they used to be used singly for timber extraction. In the 1995-1996 energy crisis the population turned to the forests as a source of fuel and oxen were used as a source of power. The demand and the price of oxen then increased. Prices of oxen started to decrease two years ago when restrictions on timber extraction and forestry protection measures including the issuing of forestry licenses were introduced. The advantage of oxen in the eyes of owners is that they can be used for land cultivation, transport and haulage, have superior strength to horses allowing them to be used for heavier land operations such as autumn ploughing and can then be sold for meat. The simplicity of the equipment is considered another advantage. Owners tend to make the wooden structures such as wooden yokes and plough shafts and take them to the blacksmiths who attach the metal components such as the metal tip of the ploughs. Oxen are the most expensive of the draught animals to keep, requiring the greatest food input however their feed costs for a year is estimated to be a third of the minimum fuel cost of a tractor for a year⁸.

Of the two owners interviewed, one owner's main source of income was farming, the hiring of his oxen for ploughing and using the oxen for forestry for personal fuel consumption, whilst the other interviewee's main income was from timber extraction. The latter interviewee was asked in-depth questions about the shoeing of oxen as well as he use of oxen in forestry. Both owners feed hay, maize flour, cotton seed cake⁹ and maize stover, and when not working in the summer both owners take their oxen to the high pasture to graze with the dairy and beef cattle. The oxen are used for ploughing and harrowing in April, inter-row cultivation in June and July, harvesting in September and October and transport throughout the year for distances up to two km. Forestry activities begin from October and through the winter. The snow makes the logs much easier to extract.

Both owners worm their oxen using the local 'vet'. One owner depending on condition, the other four/five times a year. The forester owner reported that lice and mites were a problem and that particular care of the oxen's necks must be taken in the rain as the wet causes friction resulting in sores. To combat this he washes the animals' necks with soap. The forester reported that oxen owners try to find improved bulls for breeding and that calves are selected at one year for strong necks and thick, strong legs and castrated before they are a year old. Males are preferred. Training begins at two years although the oxen are handled before then, the oxen begin by pulling small loads

⁸ One oxen is calculated as needing 1.5t hay/year and other feeds include maize and cotton seed cake. Farmers often do not calculate the costs feed such as hay and maize which they produce themselves whereas petrol is a cash outlay. A rough cost comparison was reckoned at 350/400 Lari/yr/ox as opposed to an absolute minimum of 1000 lari/yr to fuel a tractor.

⁹ Distributors in the villages sell the cotton seed cake which is not produced in the region.

e.g. 100kg and this is increased in stages. Oxen cost approximately \$1,000¹⁰ each at three years old and when older sell for approximately \$600 each¹¹. Animals are sold if they become injured. Both owners prefer to drive their own oxen when doing jobs for other people rather than allowing others to use their animals. The forester however does not accept payment for his use of the oxen for work other than forestry. Neighbours are not expected to pay for help, but provide the hay for feed and will aid the oxen owners in other ways such as help with building.

Shoeing

Shoeing is done by a specialist. Shoes can be bought in the market in Akhaltsikhe or can be made by the specialist. The 'shoe' for one foot consists of two separate half-disc metal plates which are affixed to each portion of the hoof with four nails. Oxen are shod every one to two months in peak work periods to protect the hoof and prevent slipping. The animal is tied at the head, mouth and legs, the head drawn to one side and the legs raised by means of a specially designed pivot. The shoeing operation is done as quickly as possible and takes under half an hour. According to the owners; the oxen should not have eaten beforehand to prevent asphyxiation when the head is tied to the side. Two people are needed, one to hold the legs and one to put the shoes on.

3.2 Horses

Horses are used for all land cultivation activities; ploughing, harrowing, rowing up of potatoes, inter-row cultivation, harvesting, dung spreading, timber haulage and transportation. In the mountainous areas where sheep become the prevalent livestock, horses are the main form of transport of goods to the high pastures and herding. Horses are also used in villages where forestry is prevalent for timber extraction and haulage. Horses in the region whether for haulage, land cultivation operations or transport are used singly¹².

One owner kept two horses, one stallion and a gelding and shod his own horses and those of others for 20 lari¹³ /horse. He stated that the horses needed shoeing two or three times a month in peak work periods. Another took his horse to a 'specialist'¹⁴ in a neighbouring town. The third horse in the mountainous region went unshod. Owners generally make or buy their own carts. One interviewee in the mountainous Nakalakevi village used a multi-functional reversible plough, capable of ridging and harvesting from a design from the Soviet era copied by his uncle. The owners stated that 'specialists' in harness and blanket making had disappeared and that farriers were less common, attributing the decline to mechanisation. Car tyres or metal wheels are generally used for carts, four wheel carts being used on flatter terrain with two wheeled carts used for transport in the mountains. Formerly wheels were made of oak and rimmed with metal but the specialists who made these wheels have now gone. The inability to buy new harness was stated as a constraint.

Two of the owners did not worm their horses and the other wormed his horse once a year using a local 'vet' in the village determined by its condition. None of the owners had any health problems with their horses. One owner in Tskruti village was new to horses, the others had learned from their fathers. Horses are handled from birth, with bits put in their mouth and loads put on their back including young children. Training with carts begins at two years old. Foals are taken to work with their mothers, attached to carts and to the fields. In general however, most horses in the region are used without bits. Horses are sourced by word of mouth and cost around 400 lari¹⁵. Males are castrated at three years. Males are preferred as they are considered to be stronger. Castration is not

¹⁰ One dollar (June 2010) equals 1.8 Georgian Lari . 1800 Lari.

¹¹ The forester sold his twenty year old oxen pair for this amount recently.

¹² The horses would be classified as ponies in the UK standing at an average of about 13.5 hands high. They are similar in type to working horses found in other parts of the world e.g. Ethiopia and are characterized by endurance, great strength relative to their size and the ability to maintain condition on poor quality feed.

¹³ \$11

¹⁴ A *Mchedeli* is someone who works with metal. A *Xkhari mchedeli* is a farrier who can trim the hoof. A *Nalbandi* is a blacksmith who can forge shoes and metal parts for carts, harness and iron tips for ploughs.

¹⁵ \$222

uniform, of the four horses in the investigation two were entire. Breeding is informal and haphazard with horses in the same village taken to each other for breeding. One owner in Nakalakevi village described how the demand for horse breeding had increased after the fall of the Soviet Union and the break-up of the communal '*kolkhoz*' farms, which included the distribution of land and the consequent need for the means to cultivate it. He stated that most people were too poor to pay for the fuel costs of tractors.

In Ude village where oxen ownership is prevalent the owner stated that he preferred horses as oxen require more feed than horses and cannot be left on their own. In the other villages horses were preferred for being more flexible in use for long distance transport and herding in the mountains as well as land cultivation. The cost implications of the greater feed requirements of oxen are also a major factor as well as initial purchase costs.

The horses in the survey were generally grazed on field boundaries or tethered, although free grazing was allowed by two of the owners on the higher pasture in the summer. The Alliances advisor described a lower quality hay '*leli*' which is fed to horses and also described a more recent practice in the recent milder winters of not providing supplementary feed and allowing horses to free graze. These horses form herds to protect themselves from wolf attack¹⁶. He also indicated that horse husbandry was variable with some owners allowing their horses to wander with minimal feed inputs and better owners, worming their animals, over-wintering them in stables and supplementing their feed. What effect income has on the level of husbandry could be a subject for further investigation. Of the owners in the survey one in the mountainous village fed only hay and grass and the two others supplemented hay with barley and apples. Horses are watered morning and evening and taken to water in the fields, if available.

Old and injured horses are taken to the market for sale. Who is buying these horses and for what market could be the subject of further study. Only the two horse owner used his horses for hired work with the owner driving the horses himself for ploughing in spring at 20/30 lari/day¹⁷.

3.3 Donkeys

Two donkey owners were interviewed, one a female in her seventies and the other a younger Armenian male. Age and socio-economic status play a significant role in donkey ownership. Owners of donkeys tend to be over fifty with more limited sources of income and less land. Younger members of the family often dissuade older members from purchasing or using donkeys due to the stigma attached¹⁸. This was attributed to the spread of TV ownership and mobile phones reducing the isolation of the villages and increasing exposure to urban values. Whereas each family would once have had a donkey, ownership has declined, which was attributed by the interviewees to mechanisation, and are now harder to source. Both of the donkeys in the survey were bought in Akhalkalaki, a predominantly Armenian town about seventy km from Akhaltsikhe. The donkeys in the survey cost 60 lari for a 6 month old female and 130 lari for a 3 year old female¹⁹.

Donkeys are easier to train and have the lowest feeding costs of all draught animals in use, making them suitable for older, lower income owners. Most males are castrated to make them easier to work, and males are preferred as females are unable to work when pregnant. Equipment including carts is homemade and costs between 50-100 lari²⁰ to buy. The male owner stated that cart wheels were hard to buy. The donkey of the female owner was fed only hay and the other fed hay, barley and maize. Training involves using an unloaded cart and increasing the weight. Both interviewees lend their animals to neighbours expecting them to provide feed for them but accept no payment. The male

¹⁶ The interviewee described how horses in these herds form a closed circle with their hindquarters to the outside kicking out at the wolves.

¹⁷ \$20

¹⁸ I.e. Donkeys as a symbol of poverty and 'backwardness'.

¹⁹ \$33 & \$70

²⁰ 100 lari equals \$55.

owner had tried to breed from his donkey but had had no success; the other stated there were no male donkeys in the village. The donkeys are grazed tethered, at the sides of roads and field boundaries. Lack of hay for feeding was mentioned as a problem²¹. Both owners had no health problems with their donkeys and do not worm their animals. Both donkeys were unshod.

3.4. Note on Health and Handling

Nutrition and health care, particularly intestinal parasite control²², could be optimized; however draught animal users handle their animals with skill and care. No goads or rough handling was in evidence, whips are sometimes used but only when required and with restraint.

4. Conclusion

It is hoped that this investigation will help instigate recognition of the importance of the role of draught animals in lives of the large number of people dependant on natural resource based livelihoods in Georgia. Inclusion of draught animal usage in policy discussion and decision making would help to provide a fuller understanding of famers' livelihoods and better inform interventions at the community level. Documented information may also help in drawing the attention of donors and grantees to draught animal ownership and usage which is often among the poorer section of the community, a section which habitually does not qualify for inclusion in market led donor initiatives. The simple interventions which could address the key areas of constraint identified through the study are prime candidates for small grants such as those available through embassies.

The two key areas in need of support in which improvement can be effected with minimal intervention relate to external linkages and services; specifically, improved information for the breeding and acquisition of animals and access to new equipment. Better linkages between owners and a forum for advertising could considerably improve matters. As a first step much could be done by working in tandem with the market development initiatives of the Alliances Program, in particular using the upcoming agricultural newspaper for advertising and establishing an advertisement board in the upcoming new livestock market. This could be used for the consolidation and dissemination of information of those wishing to sell, breed or acquire new animals and to advertise services, information that is presently available only through word of mouth and is limited by geographical isolation and limited transport. The possibility of the sale of harness and equipment in a local agricultural suppliers shop in Akhaltsikhe can also be investigated as a candidate for a small grant or investment opportunity procuring equipment and harness from the cart makers in Bakuriani, a ski resort 60km away where tourism has meant that harness and carts are still being made.

²¹ Due to having to purchase it from outside and the cost incurred rather than unavailability.

²² A further area of study would be to ascertain the worm burdens of the different types of draught animals and to compare them to ordinary livestock. Several factors to consider would be the effect of the low grazing density typical in Georgia and the role if any the pasture which is rich in herbs possibly with anthelmintic properties plays in controlling intestinal parasites.