

Appendix 7: Agriculture Profile of the Akhalkalaki Municipality



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In Akhalkalaki municipality in the range of 1600-2000 above sea level there is mountainous black soils. Higher than that there are highland meadow black soils. Some plains covered by marshy soil. Near river Chobareti, where the artificially cultivated pine forest grow brown and humus-carbonated soils were formed. On the lower slopes of the highlands there are black and mountainous meadow soils. The most common area on the river sides and terraces are the alluvial carbonate soils. In the foothill zones are spread transitional types of grey-brown and forest brown soils. Due to the strong erosive processes there are varieties of different types of erosion. The modern structure of soils gives an advantage to produce high nutritive value and ecologically pure agricultural products, certainly such crops as potatoes, carrots, beets, maize, wheat, etc. Natural hay lands and pastures are located in alpine and subalpine zones, which is one of the solid prerequisites for the development of cattle and sheep breeding.

According to the ICC of Akhalkalaki 77% territory of the municipality are agricultural lands. The main fields of agriculture in Akhalkalaki are crop production, animal breeding, bee keeping and fisheries. The total area of the agricultural lands of the municipality is 95 706 hectares out of which 32 003 hectares are arable land (18 163.8 ha or 57% is private), 47 hectares are perennial plants (100% private), 3 487 hectares are haylands (883 ha or 25% is private) and 59 309 hectares are pasture lands (20 ha or 0.03% is private). 860 hectares of the municipal lands are household plots.

Agriculture in the municipality is dominated by small family farms (self-employed farmers), cultivating 1.25 ha of land on average. On top of that these lands are usually fragmented into no less than 2–4 plots and mainly utilized for subsistence agriculture. Fragmentation of the lands has been a result of reform programme launched in 1992, which distributed part of the arable land to rural households for subsistence farming. The remaining portion, which still comprises 79% of the agricultural lands has been retained in state ownership partly for leasing to larger market-oriented farms. However, small and fragmented land plots remain a major constraint in increasing rural productivity and in developing a functioning land market.

According to the Information and Consultation Center (ICC) of the Ministry of Agriculture in Akhalkalaki by 2017 there are 351 medium and large scale farmers in the municipality who have: at least 10 heads of cattle and more, 10 heads of pigs and more, 25 sheep and more, 10 bee hives and more, 200 poultry and more, 5 hectares of arable land and more, 1 hectare of perennial fruit plants and more. According to ICC there are grain producers, potato growers, honey producers, cattle and sheep farmers, and dairy producers. Approximately 13000 number of the small and medium farmers are counted in the municipality of Akhalkalaki by the year 2018. It has to be noted that in Akhalkalaki municipality there are 62 registered agriculture co-operatives, however it was found that actual cooperatives, who are well aware of cooperation and united in purpose to cooperate does not exceed 10. Below is given statistical information provided by Akhalkalaki Information Consultation Center (ICC) for the year 2017.

	Number of Farmers	Number of Employed	Production Volume	Area of Land
Grain Production (farmers with 3 ha and more)	73	502	13 761.6 T. of barley average yield 1.8 T/ha	7 744 ha. Barley
			4 064.6 T. of wheat average yield 2.1 T/ha	1 920 ha. Wheat
			358.3 T. of oats average yield 1.1 T/ha	319 ha. Oats
Potato Growing	179	1 601	144 880 T.	11 163 ha.

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(farmers with 3 ha and more)			average yield 13 T/ha	
Honey production (farmers with 10 beehives and more)	71	192	38.02 T.	
Cattle and Sheep Farming (farmers with 10 heads of cattle and 25 sheep and more) Сельское хозяйство крупного рогатого скота и овец	60	74	30 827 heads of cattle Out of which 18 255 is dairy cows	147.1 T of meat
			14 732 heads of sheep	58.98 T of lamb
Diary Production (farmers with 10 heads of cows and more)	203	601	1 709.9 T. of milk	
			197.47 T. of cheese	
		Employed in total: 2 970		

Crop production – the main horticultural activity is the potato growing occupying over 11 000 hectares of land, which is about 35 percent of the entire arable lands and 11.5 percent of the total agricultural lands. There are many types of potato breeds but the best yield varieties are - Jelly, Marfona, Agria, Fabula, Arinda, Arnova, etc. the fertility of which is quite high compared to others. The average yield of potatoes in the municipality is 15 tons per hectare, and the total potato production is approximately 150 000 tonnes. Income derived from potato growing activity is insufficient and of a low level due to poor productivity and the inefficiency of farming methods. Furthermore, the cost of potato production is high due to the expense of inputs such as seeds, irrigation, fertilizers and pesticides. There are also problems with depredation of plants and crops by vermin (crows and rodents). In addition, extreme weather events such as hailstorms etc., risk damaging the entire crop harvest (ICC Akhalkalaki, 2017).

In 2017 grain production (barley, wheat and oats) occupied 9 983 hectares. The total harvest was about 18 184.5 tons of barley, wheat and oats, which is mainly consumed by local people. The wheat is mainly milled in Akhaltsikhe and Ninotsminda, which increases the cost of the product. The cumulative temperature in this zone is low, hence without special agro technologies and modern selective measures it is not sufficient to cultivate grain culture. If the farmers were provided by high quality varieties of wheat and they would carry out correct agricultural work, wheat production will be doubled, and the local demand will be fully satisfied (ICC Akhalkalaki, 2017). In terms of vegetables, cabbage, carrots, beets, onions and garlic are also produced. Cultivating the orchards is limited due to the climate conditions of the municipality.

Thermal regime, duration of vegetation period, sum of active temperature and damp are enough for specific types of grains (not only spring wheat, barley, oat but for autumn wheat as well), vegetables, root vegetables and potatoes. The best conditions for potatoes, considering heat and humidity climate resources, are in Javakheti Plateau. Climate conditions for the potato growing are significantly different. Potatoes require a lot of water as its reproductive period coincides with the beginning of dry period. Wheat maturity period starts by July 30; it starts in June in the most parts of Georgia. Wheat maturity period completes in the first decade of August. The earliest phase for harvest is June 29, and the latest is August 25. An important element of increasing crop productivity is the rehabilitation of the seed production system in the country. There is a further need for the improvement of institutional capacities of the Phytosanitary and Quarantine services and the food control laboratories for pesticide registration and quality control, as well as residue monitoring. This can be done through the effective implementation of an integrated pesticide registration and quality control scheme in accordance with international standards. Furthermore, there are gaps in managing the hazardous chemicals and introducing the Integrated Pest Management systems.

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Livestock breeding - as of December 2017 there were registered 30 827 cattle including dairy cows, 14 732 sheep, 7 978 pigs. Milk and cheese production is one of the most common activities. Productivity of the dairy farming is below average and the meat production is less developed. In winter time the livestock is mainly fed by hay. Farmers do not use combined food and food additives due to its expensive price and its low quality that eventually causes low productivity and weight loss in livestock. In addition to that hygiene and sanitary norms in farms are poorly protected, private veterinary services are poorly provided due to the scarce of the veterinarians, farmers do not know modern technologies of cattle breeding and treatment, all of which eventually negatively affect productivity. There is no enclosure, so cattle are herded together on common pasturelands, milked by hand and housed individually within household back yards (ICC Akhalkalaki, 2017).

There are a number of critical problems contributing to low livestock productivity: insufficient supervision and support of breeding services for farmers, limited animal identification and performance recording system, limited animal movement control and traceability system, inadequate feed production and pasture management, and an unorganized system for the marketing of products of animal origin. The strengthening of the capacities of both state and private veterinarian services for early recognition and response for zoonotic and transboundary animal diseases is a major area that can contribute to growth of the animal husbandry sector and the protection of animal and public health.

The inland fisheries - in Akhalkalaki there are 56 fish producers, out of which 51 are active and about 18 registered individual entrepreneurs and limited liability companies. There are approximately 35 925 m² of artificial fish ponds in the municipality mostly producing trout. Total fish production as declared by the fish producers estimates more than 94 tons per year. Production depends entirely on the success of hatchery operations. Currently there is only one large scale operator, which supplies trout fingerlings locally as well as to other regions. However, fish hatchery production in Georgia is not stable because of the unavailability of stable fish fingerlings stocks. Alternatively, carp, lake herring and other fish species are grown in natural water reservoirs (ICC Akhalkalaki, 2017).

Apiculture - is one of the major agricultural activities in Akhalkalaki. Dry periods are lengthy in the main part of the territory, which is a positive factor for apiculture development. It eliminates the risks of bee fungal diseases. The region is characterized with low rate of nebulosity – only 15-20 % of arch of the sky is covered with clouds. Summer months are characterized with low rate of nebulosity and only 10% of arch of the sky is covered with clouds. There are 4 845 beehives in the municipality (as per 2017). Currently there are 71 professional registered and non-registered beekeepers and nearly the same amount of start-uppers for whom apiculture is a supplementary activity alongside other agricultural activities (ICC Akhalkalaki, 2017).

Pasture and Transhumance Routes - There are transhumance routes and large areas of pasture lands to and across the municipality. Neither the pasture land nor transhumance routes are managed properly which causes the following severe problems: over grazing; erosion; desertification as well as reduction in livestock productivity.

Agriculture Infrastructure – Agriculture consultation service is available in the Akhalkalaki municipality through Farmers Information and Consultation Center of Ministry of Agriculture.

The nearest laboratory which provides animal blood analyses services is located in the Akhaltsikhe, Samtskhe Javakheti Region. This laboratory is a part of laboratory network managed by LEPL Laboratory of Ministry of Agriculture. Services available through Akhalkalaki Laboratory Surveillance Stations could be found online¹. Farmers require better access to laboratory services (including mobile laboratories) in order to check food safety and quality notably for milk and meat, fruits and vegetables but also for animal health and soil consistency.

¹ List of Laboratory Services, Laboratory of Ministry of Agriculture of Georgia: <http://lma.gov.ge/index.php?lang=en>

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LLC Grain Logistics Company provides distribution and testing new sorts of grain, which is later introduced among the farmers. However, farmers require access to and support from local agriculture research centers, which would test and assess other strains and breeds.

There is no agriculture technology nor machinery widely in use. Agriculture machinery (tractors and equipment) are mainly obsolete from Soviet-era and not sufficient in terms of quality and quantity. Technologies are old and require modernization. There is state owned mechanization service center - LTD Meqanizatori in Akhalkalaki municipality providing the full range of required services such as ploughing (different kinds at different depth), sowing, harrowing, cultivation, disinfecting and harvesting. Also there are other small agricultural service providers operating in the municipality villages but in most of the cases they own single unit of tractors and combines with limited aggregates and functions. This equipment is outdated but prices for the services are ~30% cheaper compared to LTD Mechanization's prices². It should also be underlined that services offered by LTD Meqanizatori are hardly available for small-holder families because they are not priority clients.

There is a need for at least two new and extensive agro-service centers assuming that the existing centers are not sufficiently mechanized or of sufficient standard to meet farmer's needs.

Two slaughterhouses are available in the Akhalkalaki municipality but currently not operational. In terms of food safety there are some areas that require particular attention include legislation, control and certification of institutions and operators on the food market (public and private), capacity development of food inspection services and improving the food safety information system, harmonization of food standards with Codex Alimentarius.

Irrigations system

The majority of the agricultural lands are not irrigated. Communities require an irrigation system for farmland as well as to provide drinking water to livestock. Thus, the irrigation system needs to be rehabilitated or in most cases developed entirely. The collection of water has to be extended and irrigation channels or pipelines have to be constructed. The community possesses a natural resource to irrigate land holdings with the self-running water; few places requiring the use of electric pumps. Farmers claim that they are ready to pay the fees necessary for the maintenance of the irrigation system. It is believed that most of the irrigation systems could ensure water supply to the farmlands and that the solution to the irrigation problem will also solve the issue of misuse of drinking water for watering purposes. The irrigation system is degraded throughout the municipality. The central irrigation channels are managed by the Georgian Amelioration Ltd, which is a state owned company. Local authorities do not have the capacity and appropriate authority to improve the system while farmers' main complaints are addressed towards local self-government.

According to the information provided by the Georgian Amelioration Ltd, in 2015, 150 hectares of farmlands had access to the watering water supply, in 2016 access, supply areas were increased up to 1000 hectares and in 2017, it has reached 1600 hectares. However, actual watered territories by farmers in 2015 were 71 hectares, in 2016 – 350 hectares and in 2017 watered territories reached only 583 hectares. In 2015 there were 144 customers/consumers, in 2016 – 630 and in 2017 the number of customers reached 804.

According to the 2016-2020 program for Rehabilitation of the Amelioration System in Akhalkalaki municipality it is planned that by 2020 there will be access to the watering water supply for 3 784 hectares of the farm lands.

During the project implementation and service provision process Georgian Amelioration Ltd finds several constraints and problems as follows:

- Inexistence of the water consumers organisations who will distribute water locally and organize water usage;
- Water consumers do not address Samtskhe-Javakheti service center in order to apply for the service provision before the season starts;
- Farmers refuse signing service contract agreements with the Georgian Amelioration Ltd.

² <http://mechanization.ge/>

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Below presented table shows details about the Akhalkalaki municipality's amelioration infrastructure rehabilitation implementation program for 2017-2020 provided by the Georgian Amelioration Ltd.

#	Object names	Status	Territories available with the water supply after the rehabilitation (hectares)
1	Diliska-Ptena-Chunchkha water pump station pressure pipeline and watering system rehabilitation (stage 1)	Ongoing	934
2	Diliska-Ptena-Chunchkha water pump station's connection works to the power supply network	Tender has been announced	
3	Rehabilitation of the watering network in Ptena zone of the Diliska-Ptena-Chunchkha water pump station (stage 1)	Planned	450
4	Okami water pump station pressure pipeline and watering network development (stage 1)	Completed	
5	Okami amelioration pump station's power supply	Tender has been announced	
6	Rehabilitation of the watering network in the villages of Gogasheni, Apnia, Okami and Kartsebi zones of the Okami water pump station (primary distribution lines)	Planned	300
7	Rehabilitation of the main channel and primary distribution pipes of Zresi mechanical watering system	Tender has been announced	
8	Rehabilitation of the main channel and primary distribution pipes of Zresi mechanical watering system	Planned	1 500
9	Rehabilitation of the main channel and hydrotechnical buildings of Zaki-Khando-Kotelia	Planned	600
<i>Total activities financed by the state funds</i>			3 784

Finance - Agro loans represent only small part of the portfolios. The banks do not have developed strategy for improving and expanding the agro credit services. Limited access to financial resources, especially to low-interest and long-term loans raise problems: Absence of timely and sufficient amount of quality agricultural production facilities; Lack of up-to-date and effective agricultural technologies and equipment; Insufficient, outdated and ineffective infrastructure for post-harvest handling, etc.³.

According to the research conducted by FAO⁴ at village level within the households involved in agriculture, it was found that 47% of the respondents have debts (30% reported bank loan). Also, it was found that 55% of the respondents who are not able to borrow money if needed for an agricultural investment is due to the fact that 37% of them already have debts or 59% of them who are unable to repay.

According to the same research it was found that households are poorly aware about specific investment support programmes such as Plant Your Future (3%), Preferential Agro Credit (20%), Beekeeping Cooperatives (6%), Agro-production Promotion (1%) and Produce in Georgia (5%).

³ OXFAM, *Evaluation of the preferential Agro Credit in Georgia, Tbilisi 2017*

⁴ *Assessment of Rural Agricultural Investment Capacities and Corresponding Extension Needs in Georgia, FAO, Tbilisi 2017*

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Apparently, only 12% of the respondents knew where to find info on support programs of the Ministry of Agriculture (e.g. Regional office of the Ministry of agriculture, APMA or ACDA website etc.) and 4% knew other Donor programmes which provide support for agricultural production in the Municipality such as NGOs, various projects etc.

Agricultural products, mostly potato and cheese, are transported to Tbilisi, Kutaisi and other regions of Georgia. The products are transported through specially equipped buses and trucks. Local cheese producers are producing Sulguni, which is sold immediately. Another types of cheese are Lori, which needs 2 month of ageing period and Georgian factory cheese, which needs an ageing period of four months. According to the ICC Akhalkalaki there are 6 registered cheese producing companies and 121 farmers who produce cheese. Although, in fact the figures are much higher due to the unregistered small scale household farmers who produce cheese on poor food safety standards. Cheese production is seasonal and very short. The cheese producer collects milk locally and produces cheese in Akhalkalaki. Mostly they sell to the wholesale buyer who provides distribution to the shops and marketplaces in Tbilisi and other regions. Local cheese producers do not cooperate in milk collection and pricing. They are strongly price competitive against each other. Legally registered cheese producers who have HACCP standard are checked and controlled by NFA, they also pay taxes. On the contrary, local small-scale household cheese production is not prohibited; they operate without food safety controls and they do not pay taxes, thus creating unhealthy competition with the local producers who operate legally. On top of that some companies are producing cheese from the milk powder rather than natural milk.

Individual farmer has difficulty in accessing markets and in selling their harvest at desirable prices. There are no organized marketplaces locally where farmers sell agricultural products at wholesale and retail prices. Also wholesale infrastructure in terms of collection points/hubs for agricultural products and facilities for consolidation as well as value chain of goods and production that would allow delivery and sale to the wholesale market are poorly developed. On top of that access to the markets outside the municipality for individual small scale farmer is not efficient due to the extra expenses of transportation costs (0.05-0.09 GEL per kg). It is believed that intermediaries and traders generally benefit at the expense of farmers as they buy agricultural products at bargain prices locally and sell for much higher price margin in wholesale and retail markets. A similar situation exists with milk production with farmers complaining about low market prices for liquid milk and added value produce. Akhalkalaki town's open agricultural market is the primary sales point for agricultural products from the rural areas of Akhalkalaki district and the neighbouring districts of Ninotsminda, and Aspindza. Traders from eastern Georgia and Armenia also sell agricultural products, mainly fruits and vegetables, at the Akhalkalaki market. The rural population of Akhalkalaki sells less than 10% of locally produced agricultural products in the Akhalkalaki market. 70% of farmers sell and exchange their own agriculture produce for those goods (mostly food, fruits and vegetables) which they do not themselves produce locally; other goods are bartered locally door-to-door by small scale traders. Overall, farmers report difficulties in price and market volatility and stability for agricultural produce, a consequence of which is unsold potato produced and the dumping of this in local rivers and surrounding areas.

Companies have difficulty in producing appropriately labelled package cheese. Local cheese producers are interested in producing different varieties of cheese but they do not have sufficient resources and infrastructure. Farmers and cheese producers need to be united however, again, the cooperative experience and trust between producers is very poor. Farmers are not stable providing stable milk price regularly. Sometimes they produce cheese by themselves and sell to wholesale buyers rather than selling to local cheese producers, which is not efficient for two reasons: the cost of cheese production at home is much higher first, and second, they sell cheese at a low price. It is more lucrative for farmers to simply sell milk rather than cheese. However, farmers tend not to calculate costs and benefits.