



ALCP | Alliances
Caucasus 2
REGIONAL MARKET ALLIANCES IN THE SOUTH CAUCASUS

ALLIANCES CAUCASUS 2
REGIONAL LORI (BACON) PRODUCTION,
MARKET RESEARCH, OCTOBER 2022

KEY CONTACT POINTS

Mercy Corps Georgia

Lela Kobakhidze

Main Office Coordinator

8 Megobroba street

Marneuli 3000, Georgia

Tel: +995 (357) 22-00-20

Mobile: + 995 (595) 24 24 59

Email: mocoordinator@alcp.ge

Mercy Corps Georgia

Helen Bradbury

ALCP Team Leader

8 Megobroba street

Marneuli 3000, Georgia

Tel: + 995 (357) 22-00-20

Mobile: + 995 (595) 56 00 69

Email: teamleader@alcp.ge

Mercy Corps Georgia

Irakli Kasrashvili

Country Director

48 A.Tsagareli street

Tbilisi 0194, Georgia

Tel: + 995 (32) 25-24-71

Mobile: + 995 (599) 10 43 70

Email: ikasrashvili@mercy Corps.org

KEY CONTACT POINTS	2
VISION AND MEANS OF CHANGE	4
METHODOLOGY	5
CROSS CUTTING THEMES	5
CLIMATE CHANGE	5
GENDER EQUALITY, DIVERSITY, AND SOCIAL INCLUSION (GEDSI) IN PIG FARMING AND LORI PRODUCTION	5
SUMMARY MARKET ANALYSIS	8
CORE PROGRAMME TARGET GROUP & PRO POOR POTENTIAL	8
PART 1: SUPPORTING FUNCTIONS IN PIG HUSBANDRY FOR LORI PRODUCTION	10
INTRODUCTION TO PIF FARMING IN GEORGIA FOR LORI	10
BREED	11
FEED	12
PIG SLAUGHTERING	12
PART 2: CORE MARKET: REGIONAL LORI AND VICHINA PRODUCTION IN RACHA AND KAKHETI REGIONS	13
RACHULI LORI	13
IBERICO HAM PRODUCTION	14
KAKHURI VICHINA	14
MARKET FOR LORI	15
DEMAND	15
SUPPLY	15
PART 3: RULES REGULATIONS IN PIG FARMING AND LORI PRODUCTION	16
DANGERS AND RISKS IN PIG FARMING AND THE ROLE OF THE REGIONAL NATIONAL FOOD AGENCY	16
FOOD SAFETY & HYGIENE REGULATIONS IN LORI PRODUCTION	16
ANNEX 1 KEY INFORMANT TABLE	17
ANNEX 2: BREED CHARACTERISTICS OF THE EXISTING BREEDS IN GEORGIA	20
ANNEX 3 LORI PRODUCTION PROCESS	23
ANNEX 4: PROFIT LOSS OF PRODUCTION OF RACHULI LORI IN THREE DIFFERENT CASES	25

Pig farming is the most common livestock production practice among farmers in Georgia after sheep and cattle. This research revealed that pig farming is widespread in regions with mountainous forests where households are often short of capital and use the forest to feed and raise pigs for sale. In the villages, households keep pigs for home consumption as well as for local sale or exchange, which is an extra income having a considerable impact on their food and financial security. In Racha and Kakheti regions, pigs are mainly used for the production of the regional product Lori (smoked bacon) or *Vichina* (brined pork smoked and non-smoked) as it is known in Kakheti and which has been a traditional agricultural activity for centuries in those regions in particular. Lori production in both regions was examined to determine the best potential for a regional product development intervention. The ALCP 2 will be working with Lori Producers to improve Lori production and storage facilities, which will support production of compliant Lori in Racha region. Based on this research Racha clearly provides the best potential in line with ALCP2 objectives and cross cutting themes. The Lori Production market system is divided into three parts:

Core market: describes the basic function of supply and demand between Lori producers and their markets and smoking and storage facilities.

Supporting functions: deals with inputs necessary for Lori production, information, VET for traditional Lori production, agreed standardized production standards for Lori, which are mostly informal and passed verbally from generation to generation

Rules: formal and informal rules related to the sector; regional product promotion by local government, regional National Food Agency outreach, monitoring the access and use of forest resources for Lori producers.

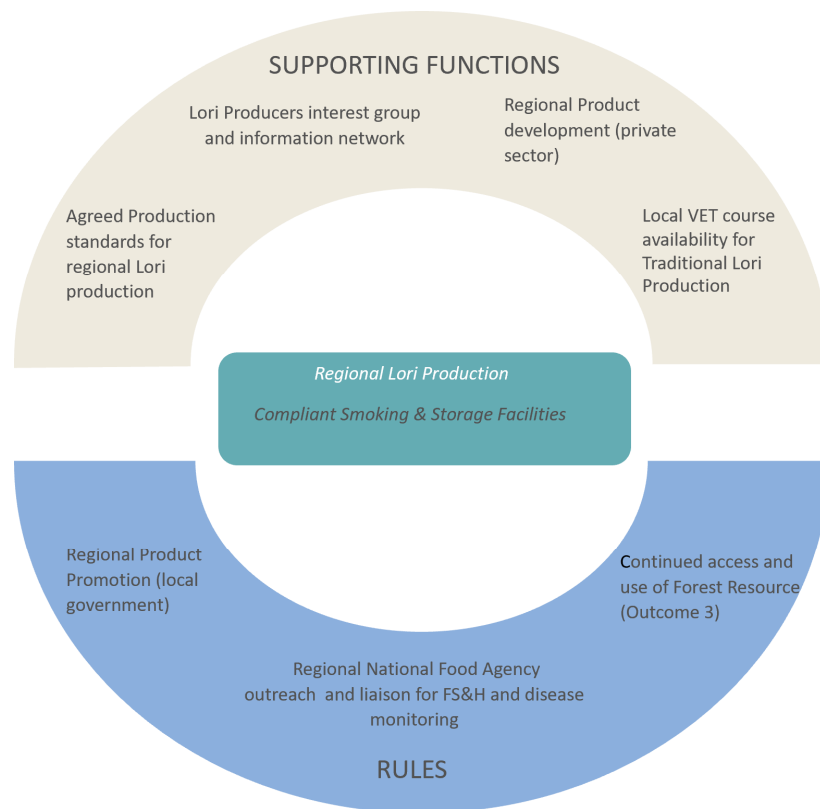


Figure 1 Lori Market System and Intervention Entry Points

METHODOLOGY

This market research is based on a desk review of current statistics and sources related to pig production in Georgia, key informant interviews (see Annex 1 Key Informant Table) with twenty-four market actors representing private and public sector players in all three parts of the market system both nationally and in the target regions and eight gender disaggregated focus groups conducted with Lori producers in Racha and Kakheti.

CROSS CUTTING THEMES

There are three priority cross cutting themes in Outcome 2 under which the Lori intervention falls. Climate change adaptation will be considered in pig farming and traditional Lori production. Gender equality, diversity and social inclusion will also be of a vital importance and National Laws related to compliant traditional Lori production are a high priority, to see that all strategies and action plans of the local government and National Food Agency are in line with the goals the programme wants to achieve under Outcome 2. Information is also an encompassing component of Outcome 2 interventions.

CLIMATE CHANGE

The ALCP2 Lori production FG survey 2022 revealed that the majority of the interviewed female and male farmers are worrying about changes in weather patterns which negatively impacts the production and storage of Lori in Racha region. Frequent rains and high humidity in spring hinders the drying process of carcasses and curing of Lori. Increased temperature from hotter summers is a key concern for female and male Lori producers wanting to store Lori the whole year round. Due to a lack of proper refrigerated storage rooms female and male Lori producer prefer to only produce the amount of Lori which can be sold before increased temperatures, otherwise Lori spoils easily. Lack of coordination, information, knowledge and finance are constraints for Lori producers to establish new practices of production and storage which will cope with the negative impact of climate changes.

Traditional Lori production is highly dependant on natural resource use. Forest reared pigs are a key component of traditional Lori production. The advantage of forest reared pigs is that the pig is fed in forest with acorns and nuts and due to this, the breed adapted to forest foraging and constant movement as they forage, the fat is well distributed throughout the meat and has the incomparable taste of traditional Lori. The FG survey revealed that interviewed female and male farmers currently have free access to the forest. Maintaining this access and ensuring future sustainability is an important aspect of building the regional product for the future¹. There is an opportunity for female and male Lori producers to apply for the existing MEPA 'Forest Reared Pigs' label and add value to the Lori product which is a priority of the ALCP2.

GENDER EQUALITY, DIVERSITY, AND SOCIAL INCLUSION (GEDSI) IN PIG FARMING AND LORI PRODUCTION

Gender equality, diversity and social inclusion (GEDSI) is another cross-cutting theme of vital importance in ALCP2. Alliances has worked in the most ethnically diverse areas of Georgia since its establishment, effectively incorporating ethnicity and gender equality within the programming. Additionally, ALCP2 will be in line with Mercy Corps' Gender Equality, Diversity and Social Inclusion (GEDSI) Strategy which is a long-term vision of advancing gender equality, diversity and social inclusion.

Pig farming is a common practice among farmers across Georgia except for in Muslim communities. The sectors are male dominated which means that more men are taking part in pig farming and Lori production than women, however women are involved in almost all stages of pig farming for Lori production. The physically hard work related to this sector e.g., slaughtering of pigs, holding, and cutting carcasses and salting, is done by

¹ This will partly be undertaken under outcome3 where equitable use of Natural Resources for rural producers and MSME's is key.

men, while women share most other activities equally with men. Elderly men as well as women are more involved in the Lori production process rather than pig farming as it requires harder physical work, however they actively pass the knowledge of pig farming and Lori production to youth who are involved in pig farming and Lori production, as it is a part of their tradition. In the younger generation mostly boys are responsible for pig farming however girls might be involved in Lori production. Farmers use Lori for home consumption, helping guarantee food security for the whole year, and in case of need they might sell small amounts, which is important, especially for the extremely poor as it helps them buy other food or other necessary goods for the family. Table 3 below shows the roles and responsibilities of men and women. Table 4 shows in line with their inclusion within the Lori production process women almost the same access to resources and agency over them than men apart from in obtaining different sires for breeding or driving to obtain additional feed.

Table 1 Gender Division of Roles and Responsibilities in Pig farming and Lori production

List of activities in Lori Production	Women	Men
Herding	x	x
Giving birth	x	x
Vaccination		x
Castration		x
Treatment against worms	x	x
Buying drugs	x	x
Buying additional feed	x	x
Giving feed	x	x
Breeding		x
Cleaning space of a pig farm	x	x
Slaughtering in a slaughterhouse		x
Slaughtering at home		x
Cutting up carcasses/butchery		x
Cleaning sub products	x	x
Salting of pork	x	x
Smoking		x
Making records	x	x
Selling Lori	x	x
Selling pigs	x	x
Selling piglets	x	x
Selling sub products head and foot,	x	x
Finding buyers for Lori	x	x
Marketing/promotion of Lori	x	x
Negotiation on price of Lori	x	x
Transportation of Lori		x

Table 2 Gender Division of Access and Agency (Decision Making Ability) in pig farming and Lori production

Roles & Responsibilities	Access		Agency	
	Women	Men	Women	Men
Information and TV programmes	x	x	x	x
Skill in Lori Production	x	x	x	x
Finances /bank loans/grants	x	x	x	x
Additional Feeds	x	x		x
Forest feed	x	x	x	x
Vet. Medicine	x	x	x	x
Vet	x	x	x	x
Breeding		x		x
Income from selling Lori	x	x	x	x
Income from selling pigs	x	x	x	x
Income from selling piglets	x	x	x	x
Income from selling pork	x	x	x	x
Income from selling sub products head and foot	x	x	x	x

SUMMARY MARKET ANALYSIS

The following tables and figures contain the summary market analysis; relevance of the sector to the target group, its pro poor potential, the intervention potential, and key constraints in the three parts of the market system.

CORE PROGRAMME TARGET GROUP & PRO POOR POTENTIAL

In Georgia 72% of rural inhabitants are designated as employed in agriculture², of whom up to 90% are small-scale farmers operating on a minimal inputs system. In the Alliances Caucasus 2 target regions these farmers have up to ten cows, up to two hundred sheep and thirty bee colonies/hives³, own small parcels of land up to 1.25 ha and have variable access to common pasture. Lori Production is an important product to a significant proportion of rural households in Racha and Kakheti regions. One in five HH's keeps up to two pigs providing additional income from local sale, food for home consumption or as an item for barter exchange. Approximately one in thirty has more than ten pigs which are sold on a more commercial basis producing Lori and *Vichina* or selling pigs to Lori producers or local butchers⁴. Table 1 below summarizes the relevance, pro-poor potential, and impact potential to the target group of rural producers of the Lori sector and the areas of intervention.

Table 3 Relevance & Pro Poor Potential and Intervention Impact Potential

RELEVANCE	PRO POOR POTENTIAL	INTERVENTION POTENTIAL
Regional Lori Production		
<p>High: One in five HH's keeps up to two pigs which they use for Lori Production, home consumption and local sale</p>	<p>High: High demand for Lori. Lori is mainly sold directly to consumers from home and in small amounts in towns and cities. High potential to promote it the Georgian market, especially for Supermarkets and HoReCa sector</p>	<p>High: Facilitate the creation a group of Lori producers, which will work to create agreed written production standards for Lori production and <i>Vichina</i> production.</p> <p>Facilitate existing Lori producers to improve smoking and storage facilities and produce compliant Lori</p> <p>Facilitate regional product development and promotion, which will help Lori producers to survive against counterfeit Lori made using imported frozen pork, which is hampering regional Lori production from being a sustainable rural livelihood in Racha region.</p> <p>Facilitate the Lori Producers group to register regional Lori product as an Intangible Cultural Heritage and potentially Protected Geographical Indication (PGI) of Rachuli Lori in Racha.</p>

Table 2 bellow illustrates systemic constraints to the supporting functions; core market and rules offset by the drivers and pro poor opportunities in the current climate, offering significant leverage to conduct successful interventions in the sector.

² Alliances Caucasus 2 Strategic Framework, December 2021, Updated May 2022

³ This is a very generalized statement. Not all farmers own sheep or hives. Characteristics vary between regions. Some farmers have more some less. But it serves as a general benchmark

⁴ ALCP2 Lori Focus Group Survey

Table 4 Systemic constraints to the supporting functions; core market and rules

SYSTEMIC CONSTRAINTS SUPPORTING FUNCTIONS	PRO POOR OPPORTUNITIES AND DRIVERS
<p>Lack of local VET courses on Lori production in Racha region</p> <p>Lack of clear agreed written Lori production standards to support regional product development and quality</p> <p>Lori exists as a regional product by name and reputation rather than in reality in terms of a consistent product. Methods of obtaining Lori are largely informal and supply is insecure.</p> <p>Information on production methods, breeds and pig husbandry is largely based on informal networks with poor connectivity particularly in relation to securing preferential breeds of pigs.</p>	<p>There is a VET college in Racha but this college does not have a traditional Lori production related module. However, the college itself is keen to develop a module which would benefit local producers.</p> <p>Current production standards are informal, often non-compliant, and haphazard making the development of a regional quality product very difficult. Interest has been shown by producers during the research as well as by relevant local government departments to develop agreed production standards for producers.</p> <p>There is an existing MEPA label the 'Forest reared pigs' designation and interest in the local Rural Development Agency (RDA) to help promote and develop Lori as a regional product which would add value and secure better markets for Lori.</p> <p>The research has revealed entities that could provide information about breeds and other relevant issues. The creation of a network e.g., Facebook group and the facilitation of quality information exchange would benefit producers.</p>
SYSTEMIC CONSTRAINTS CORE MARKET	PRO POOR OPPORTUNITIES AND DRIVERS
<p>Lack of compliant agreed production standards for Lori production e.g., poor FS&H conditions, backyard slaughtering, improper smoking room, and appropriately equipped storage facilities leading to a lack of supply of Lori in summertime</p> <p>No labelling, packaging of products resulting in poor promotion e.g., people only buying from producer's houses, agri markets, via the Facebook page, or relatives and friends. Unfair competition from those Lori producers who produce counterfeit Lori made using imported frozen pork further undermines the regional product image.</p>	<p>Lori producers who will use agreed written standards properly have the opportunity to produce compliant Lori and supply formal market. The creation of Lori smoking and storage model will help producers to produce compliant Lori as compliant packaging and labelling.</p> <p>The development and promotion of regional products e.g. labelling, protection as a Geographical Indication status in Racha and designation with the label of 'Forest reared pigs' will reduce unfair competition. It will include packaging,</p>
SYSTEMIC CONSTRAINTS RULES	PRO POOR OPPORTUNITIES AND DRIVERS
<p>Regional local promotion (local government)</p> <p>Regional National Food Agency outreach and liaison for FS&H and disease monitoring</p> <p>Continued access and use of forest resources (Outcome 3)</p>	<p>Development and promotion are not supported by the local government substantially although supporting and developing Racheuli Lori as a prestige regional product is something to which they aspire. A Lori Producers group facilitated by the programme will work with the local government to priorities promotion of the compliant traditional Lori production.</p> <p>The NFA and Local government should prioritize Lori regional product development and promotion, keep an eye on production of compliance Lori and disease monitoring to protect farmers livelihood.</p> <p>Continued access and use of the forest for pig rearing should be supported by the local government as a priority to produce and promote traditional Lori production</p>

Part one describes supporting functions in Lori production; breed, feeding practices and slaughtering of pigs.

INTRODUCTION TO PIG FARMING IN GEORGIA FOR LORI

Pig farming and Lori production is highly relevant to the target group. One in five HH's keeps up to two pigs providing additional income from local sale, food for home consumption or as an item for barter exchange. Approximately one in thirty has more than ten pigs which are sold on a more commercial basis producing Lori and *Vichina* or selling pigs to Lori producers or local butchers⁵. Currently, the NFA do not have a pig identification/registration system, therefore, no records and data are available about the exact number of pigs, or breeds exist in Georgia. However, approximate data is available in Geo stat⁶ which is different from approximate data of pigs provided by the NFA. According to the NFA data we can assume that 30 % of pigs are on intensive farms with 70% of pigs raised in HHs. Pig farming for HHs is a main form of livestock husbandry after sheep and goats and cattle⁷.

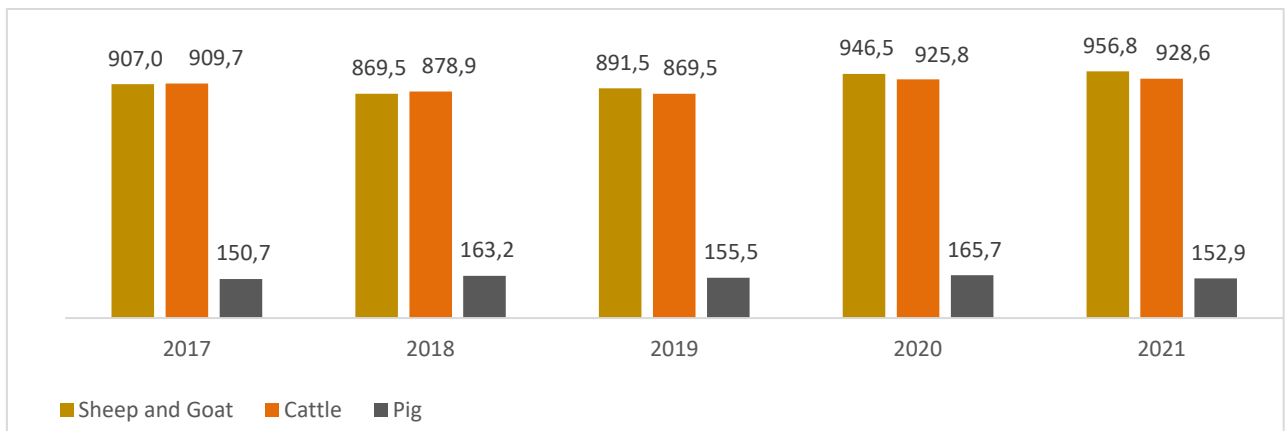


Figure 2 Sheep, cattle and pig farming among farmers by years

According to the FG surveys, 80% of pig owner farmers in Racha region and 55% of pig owner farmers in Kakheti region have one to five pigs. On the other hand, more farmers in Kakheti tend to have six to ten and eleven and more pigs compared to the Racha farmers.

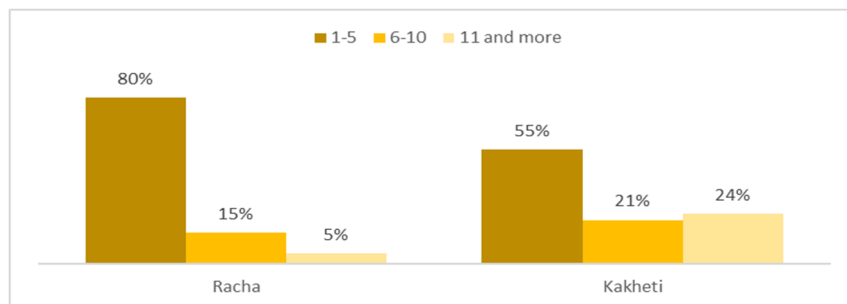


Figure 3 Average number of pigs per HHs by regions

⁵ ALCP2 Lori Focus Group Survey

⁶ Geo stat's data according to the statistics, there were 152.9 thousand heads of pig in Georgia in 2021, Geostat.ge

⁷ Geostat.ge

In Racha region 96% HHs keep the local unknown mixed breed, which are raised in forests, eat forest fruit and the meat is suitable for Lori production. When Lori producer farmers cannot buy these local mixed breeds of pigs in Racha region, they buy them from nearby municipalities such as Sachkhere and Tkibuli, where pigs are also raised in the forest, also from Kharagauli, where one farmer has a pig farm in the forest surrounded by an electric fence. Different trends were observed in Kakheti (Telavi, Akhmeta) where 90% of HHs have pedigree pigs e.g., Duroc, Yorkshire, Landrace

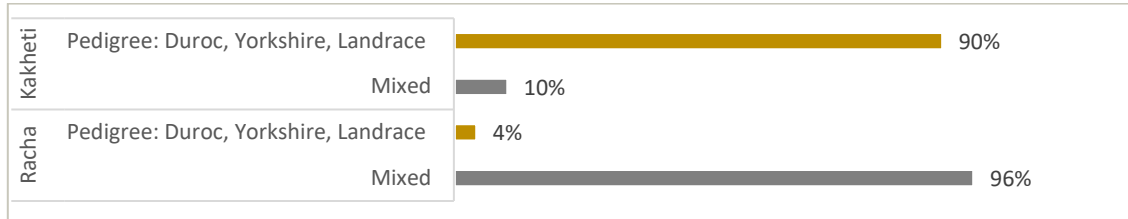


Figure 4 Types and % of pig breeds existing in Racha and Kakheti regions.

Based on the market research and the FG survey, currently there are four categories of pig breeds in Georgia: 1. Local, unknown, mixed breed, which is widespread in the country; 2. Kakhetian 3. Svanetian breeds; 4. Pure or breed mixes from e.g. Duroc, Yorkshire, Landrace. Please see [Annex 2](#) for a detailed description of the breed characteristics of the existing breeds in Georgia.

Table 5 Characteristics of existing breed of pigs in Georgia (Source ALCP2 Research)

Breed		Local unknown mixed breed	Kakhetian Breed	Svanetian Breed	Pure or mixed breed Duroc, Yorkshire Landrace
Appearance		Hairy. Long snout, colours gingery or white with black spots or half black and half white	Hairy, colour black or greyish black or black chestnut and dark hoof	Very hairy, small bristles, dark grey body, dark grey colouring	Smooth skinned, large pigs, ears are droop down or lop ears, white, brown
Live Adult Weight Kg	Female	110-120	110-120	35-40	200-300
	Male	80-100	80-100	50-60	250-350
Slaughter output		60-65%	60-65%	60-65%	70-78%
Birth rate per year		5-8 piglets	5-8 piglets	5-6 piglets	8-12 piglets
Feeding		forest fruit	forest fruit	forest fruit	wheat, maize, barley, premix, whey, food waste
Advantages		Adapted to living in a forest well distributed meat fat Outstanding taste Good for Lori Production	Hardiness, resistant to cold easily adapted to living in a forest strong self-defensive Good for Lori Production	Resistant to hard climate of high mountains needs a small amount of feed Good for Lori Production	big weight, good slaughter output

In Racha pigs are raised in the forest for almost eight months from April till November. *'There are weeks when pigs do not come home, then I or my brother or my mom go to the forest to find them. When we find them, we lay grains of maize to bring the pigs back to home'*- a male farmer stated. In autumn pigs gain more weight, and the meat becomes tastier, when walnuts, chestnut and forest fruits are ripe. In autumn farmers select female pigs for breeding and the rest are slaughtered. The pregnant sows are kept at home for four months during the winter (December-March). A similar approach was revealed for male and female focus groups. However, when winter is light, snow is not deep and the ground is visible, the farmers let the pigs out to roam. At home, farmers feed the pigs with the poorest quality wheat flour and farmers mill wheat, maize and barley and mix them for pigs (wheat 40%, maize 20% and barley 40%).

A different trend was observed in lowland areas of Kakheti (Telavi, Akhmeta) where farmers do not allow pigs to roam outside as they can damage vineyards or gardens. Those breeds of pigs grow bigger and than local or Kakhetian breeds of pigs. At home, farmers give the pigs mixed feed premix + maize, whey, and food waste. *'Raising pigs at home costs high for farmers because the prices of feed and fuel have increased. It is a laborious and costly task, but what else should you do in the village, you should keep a cow or a pig'*- noted a female farmer. However, in the villages of Telavi, Kvareli that are surrounded by forest e.g., Kobadzebi, Pshaveli, Ikalto, Akhal Sofeli, HHs keep Kakhetian or local unknown breeds of pigs that are raised in forest and eat forest fruit. The general practice of raising pigs in the forest is the same as it is in Racha region. Pork of pigs raised in the forest costs 2-3 Gel more than those pigs which are raised at home, because of the taste. *'Who once taste this pork makes an order in advance for the autumn and buys pig for home consumption'* stated a male farmer.

Consumers want to buy traditional Lori produced from pigs raised in the forest. The ALCP2 will facilitate existing Lori producers who use forest reared pigs in Lori production to apply for the MEPA 'Forest reared pigs' label and add value to the product.

PIG SLAUGHTERING

In both regions, 97% of pigs are slaughtered in the backyard for home consumption and informal local sale.

However, the FG revealed that in Racha region when Lori producers have an order from the HoReCa sector, they are requesting a form #2 or laboratory analysis of pork on *Trichinella*⁸; due to this Lori producers use slaughterhouses and laboratory services according to request. In the case Lori producers from Racha buying pigs in Kharagauli (Imereti), Lori producers slaughter them at the slaughterhouse in Kharagauli and bring pig carcasses back to Racha for smoking. Those Lori producers who produce big amounts of Lori hire workers for slaughtering, cleaning, salting of carcasses from neighboring villages or from Sachkhere and pay 40-50 per pig.

In Kakheti region a similar trend was observed in terms of supplying to formal buyers, however it should be noted that in Kakheti, particularly in Telavi the majority of farmers do a laboratory test on *Trichinella* themselves. *'When farmers slaughter a pig one person takes a meat sample (piece of meat between spine and ham) to do the lab. test, when the answer is negative, he calls at home to start making barbecue'* - mentioned male farmer of the FG in Telavi municipality by male farmer. In Akhmeta municipality, due to the lack of a laboratory and the absence of a pig slaughterhouse, farmers are not able to slaughter their pigs in a local slaughterhouse or do local laboratory tests. In general, it should be noted slaughter related work is mainly done by men.

The ALCP2 will facilitate group of Lori producers who will work with local government and the NFA to facilitate the creation of agreed production standards for traditional Lori production and monitor pig slaughtering according to the agreed parameters for pig Lori production in Racha region.

⁸ *Trichinella* infection rates vary from region to region and seem to increase in colder climates. Foxes, wolves, and bears have the highest infection rates, but small mammals, such as skunks, raccoons, and rats, provide the highest risk to infecting the domestic pig.

Part two describes traditional production processes of Lori and *Vichina* in Racha and Kakheti regions and constraints in the core market of production, demand and supply of Lori. Much of the pork consumed in Georgia is still produced by HH's making Lori production highly relevant to the target group. Of the pork consumed in Georgia in 2021 approximately half was produced in Georgia and slightly more than half imported⁹ and of the pork produced in Georgia 70% is produced by HHs and 30% by more intensive farm operations.¹⁰

RACHULI LORI

Racha region is famous for its regional bacon production called 'Rachuli Lori', which has been produced for centuries in Racha. Rachuli Lori is a smoked bacon made from a local unknown mixed breed of pigs mainly raised in the forest. Vakhushti Bagrationi, the geographer, historian, and cartographer in the VIIth century, writing about the people in Racha wrote that 'a pig is their life', a vital source of food for families in a distant, mountainous and forested region, with limited cultivatable land and harsh winters. Lori pigs could make use of the feed provided by trees in the deciduous forests, acorns, fallen fruit, berries and beech nuts. People used to take Lori when going on a long journey for its nutritious and non-perishable qualities.

According to the focus group survey pig farming for Lori production is not easy work, it takes time and energy and expenses for feed. Foraging pigs might get lost or eaten by wild animals or die from diseases, however, Lori production is considered highly profitable and so producers are strongly incentivized to continue. See Annex 4 Profit Loss of Production of Rachuli Lori. *'One pig out of six, covers all expenses, that is an incentive for farmers to keep pigs'* - a male farmer noted.

According to the FG in Racha region, 83% of HH's produce Lori for sale and home consumption, 18% of HH's produce Lori for solely home consumption. Pig slaughtering starts from autumn, farmers use whole carcass to produce Lori. In Racha region all farmers smoke pig carcass at home. All female and male Lori producers focus group participants mentioned that they use traditional methods of smoking Lori which they know from the previous generations, their parents and grandparents. Please see a detailed and illustrated description of the complete Lori production process in Annex 3. Problems within Rachuli Lori production centre around incompliant smoking and storage facilities and inconsistent processes. For preventing harm to the consumers, food safety and hygiene should be an important part of all stages of Lori production: processing, smoking and storage of Lori. Standardized compliant procedures are essential in building a regional product and prestige brand. The following constraints are hampering quality and consistent supply.

Table 6 Constraints within the production process.

Lori production stages	Current condition
Salting	<ul style="list-style-type: none"> * No proper compliance procedure for salting, * Keeping/hanging drying carcasses in rooms not protected from insects and rodents
Smoking	<ul style="list-style-type: none"> * Poor build quality of smoking rooms which are made from wood means they often have holes allowing insects and rodents inside * Non stainless hooks are used for hanging carcasses * Carcasses are sometimes hung too close to the smoking fire as the rooms have not been built with a high enough ceiling. This carcasses to become over smoked with a darker colour of Lori and potential high level of carcinogens in the product
Storage	<ul style="list-style-type: none"> * Lack of temperature control in storage rooms can cause spoilage of Lori especially in hot weather * Lack of refrigerated storage limits sales season to cold weather
Packaging (and labelling)	<ul style="list-style-type: none"> * No packaging and labelling hampers limits sale of Lori to informal markets

⁹ Consumption of pork in Georgia in 2021 was 41.7 thousand tonnes, where local production was 22.8 thousand tonnes against the import 24.5 thousand tonnes, while export was 5.6 thousand

¹⁰ According to the NFA data. One intensive farm has on average more than 50 pigs, one household has on average one to five pigs.

IBERICO HAM PRODUCTION

There is one formalized Lori producing company *Native Racha*¹¹ founded by Spanish [Deraza Iberico](#) company and managed by a Georgian partner. Deraza Iberico is a producer of Iberico Ham produced from a Georgian native wild breed the 'Kakhetian' which has Iberico breed characteristics and is raised in the forest eating oak and nuts. Initially, the idea of Native Racha was to produce Ham and other pork products from the Kakhetian Breed which is similar to the Iberico breed and export them to Spain. However, at that time the population of the Kakhetian Breed of pigs was in danger of extinction, therefore the Georgian state investment entity - the Partnership Fund and a Spanish Company 'Deraza Iberico' as well as the Scientific-Research Center of Agriculture, supported the Native Georgia farm in Racha to breed Kakhetian pigs. Currently, the company Native Racha produces bacon, sausages, Spanish 'Iberico' ham, Sala (white fat), and uses pork from its own farm, rarely buying pigs from other farmers. Products are sold in supermarkets¹². The technology used and production process of Iberico Ham are different to the traditional Lori production process.

KAKHURI VICHINA

Production of smoked *Vichina* has a long history in Kakheti region, especially in Telavi and Akhmeta municipalities. According to the FG survey in Kakheti region, in Telavi and Akhmeta municipalities, 38% of HH's produce *Vichina*, out of which 7% is produced for sale. The product is popular at New Year and Easter holidays. Production of Kakhuri *Vichina* is seasonal. Usually, farmers slaughter pigs in autumn and winter. They cut the whole carcass of the pig in parts (half pig, shoulders, leg). They mainly use fresh pork and keep some other parts of carcass (leg, shoulder) in salted water (for ten litres of water it needs three kg salt) for 20 days to make brined pork. After that they take out the *Vichina* to dry and smoke or leave the pork to dry cure in salt for months. Some farmers use a smoking service and pay 1.30 Gel/KG *Vichina*. The smoking process takes on average 1-4 days. Those farmers who are not using smoking services are smoking *Vichina* at home by themselves. Farmers use beech wood chips and add different types of fruit wood e.g., apple, Juniper to impart flavour. Smoking and processing constraints are similar to those in Racha.

¹¹ [Native Racha](#)

¹² www.facebook.com/Nativerachald

MARKET FOR LORI

Rachuli Lori in particular, is a Georgian product well known and well regarded across Georgia. The problem for consumers is that unless a producer is personally known or the retailer is greatly trusted or can produce assurances, there is no guarantee that the Lori is genuine and produced from pork from pigs raised in the forest and produced in compliant facilities.

Another main and growing problem for producers and consumers is the increasing amount of counterfeit Lori made using imported frozen pork, which is hampering regional Lori production. Consumers who cannot distinguish the taste of Rachuli Lori or Kakhuri *Vichina* can be easily deceived.

DEMAND

Demand for the regional product Rachuli Lori and Kakhuti *Vichina* is high. The majority of producers sell Lori during the New Year and Easter holidays (April/May/beginning of June) and a few producers keep Lori for summertime when visitors, tourists and people visit the region or are coming back in their houses or to see relatives. The majority of Lori producers sell it from home, almost all houses in the villages of Racha, have a sign 'Lori for Sale'. However some Lori producers sell Lori in small cheese shops, other small grocery shops in Tbilisi and agri markets in Kakheti, Racha and Tbilisi. Lori producers also sell Lori to the HoReCa sector via social media¹³ Facebook pages or friends or relatives in Tbilisi and other cities.

There is a demand for Lori from the Georgian Diaspora in France and the US, buying Lori through social media or relatives. Sending Lori to foreign countries through the local national postal operator - Georgian Post, is a common practice in Racha.

SUPPLY

Lori Supply is inconsistent, in both quality and amount. Consumers are often frustrated in wanting to buy Lori but being unable to obtain it through normal retail outlets. Ultimately unless a person has family or close connections to a producer it is often impossible to get hold of.

Lori supply is limited in summertime. Currently, Lori producers in both regions have old smoking and storage facilities, which need reconstruction and improvement. There are no specific agreed written regulation production standards to support regional product development which would help producers to upgrade smoking and storage facilities and produce compliant Lori. During the FGs, farmers mentioned that in recent years more hot summer seasons have been observed which makes it difficult to keep Lori cool. In hot weather Lori spoils easily e.g., worms are appearing due to not having proper refrigerated storage rooms. For this reason, producers prefer to produce the amount of Lori they will be able to sell before hot weather starts.

¹³ soplidan.ge; Rachuli.lori [Rachuli Loruka](http://Rachuli.Loruka);

PART 3: REGULATIONS AND EXTERNAL RISKS IN PIG FARMING AND LORI PRODUCTION

Part three describes current regulations in pig husbandry and Food Safety and Hygiene.

FOOD SAFETY & HYGIENE REGULATIONS IN LORI PRODUCTION

Lori production falls under the regulation of Food Products/Animal Feed Safety, Veterinary and Plant Protection Code of Georgia, which defines basic principles and requirements for food safety and animal health and welfare, as well as obligations for business operators. However, the code is a complex document, and it regulates all types of food production, which makes it difficult for Lori producers to understand specific requirements. ALCP2 will facilitate a Lori producers interest group to work with regional local government and the NFA to create agreed written standards for compliant Lori production.

DANGERS AND RISKS IN PIG FARMING AND THE ROLE OF THE REGIONAL NATIONAL FOOD AGENCY

DISEASE NOTIFICATION AND CONTROL

In September 2022, as part of the ongoing EU approximation process, the government approved a pig protection decree, defining minimum standards for keeping more than four pigs, which will come into force in 2028. Also decree #348 on preventive-quarantine measures against contagious animal diseases includes pigs. The National Food Agency gives recommendations to pig farmers when they have a meeting with them on how to avoid the spread of African Swine Fever¹⁴. When a farmer informs the NFA about the (ASF) diseases of pigs, the NFA gives instructions on what measures to take e.g., isolate pigs, disinfection, burying dead pigs.

African Swine Fever is an ongoing threat in pig farming worldwide as there is no commercially available vaccine against it. Eradication measures are based on classic disease control measures¹⁵. It should be noted that in 2019, there were some limited outbreaks of African Swine Fever in Racha-Lekhchumi and Kvemo Svaneti regions, around 80 heads of pigs died¹⁶. Since then, officially, no cases were observed by the NFA in Racha. In Telavi and Akhmeta municipalities in Kakheti, where pigs are raised at home, the FG survey participants did not mention ASF as a constraint, however in Racha where pigs roam freely disease risk is potentially higher meaning disease control for Racha region has to be particularly well enforced, e.g. controlling the import of pigs brought from outside potentially with a quarantine zone/procedure. Currently producers feel the Regional NFA/local government does not provide proper support by monitoring the entrance of pigs into the region and by raising farmers' awareness of disease prevention.

ROLE OF THE REGIONAL NFA

Currently, the NFA does not have the obligation to identify and register pigs in the country, they also do not have a national vaccination programme for pigs, except for a pilot programme which was implemented last year in the Racha-Lekhchumi, Kvemo Svaneti region by a local NGO with the support of FAO and NFA¹⁷. A MEPA plan to implement the registration/identification of pigs next year, has been postponed as the NFA does not have enough resources to manage the identification/registration. Regionally the NFA needs to improve its oversight of food safety and hygiene in production facilities and disease notification and control to underpin the development of a regional product.

¹⁴ E.g. to have isolated farms for their pigs, keep in farms, not enter the farms without uniforms, and pigs growing in the forest should have allocated fenced places to avoid contact with wild boar, a potential way of spreading this disease

¹⁵ FAO. African Swine Fever in the Caucasus. EMPRES Watch Emergency Prevention Systems.

¹⁶ Based on an interview with the head of the regional division of NFA however no data of where the outbreaks occurred or how many farms were involved were given.

¹⁷ 755 pigs¹⁷ were vaccinated against classical swine fever, and swine erysipelas

Table 7 KEY INFORMANT TABLE

#	Key Informant	Date	Organization/ Specialization	Location and Link to Project
Supporting functions: breeding, forest feeding				
KI 1	Misha Gogochuri	July 2022	Pig farmer	Kobadzeebi village, Gombori, Kakheti region. The Farmer has Kakhetian breed of pigs raised in a forest. As the pigs are fed with forest fruits: Beech, Oak, Apple, Pear, etc. the taste of meat is delicious. He sells pigs to famers for home consumption, for Kakhuri Shashkhi production and for developing pig farms
KI 2	Lukhumi Nekresashvili	July 2022	Pig farmer	Pshaveli village, Telavi Municipality, Kakheti reion. The farmer has pure Kakhetian breed of pigs raised in a forest, where they eat forest fruits. He manages breeding and treatment of pigs. Sells pigs for home consumption, Kakhuri Shashkhi production and sells pure breed for breed preservation
KI 3	Giorgi Lachashvili	July 2022	Pig farmer	Ikalto village, Telavi Municipality, Kakheti region. The farmer has Kakhetian breed of pigs raised in a forest and fed with forest fruit. He Sells pigs to famers for pork consumption
KI 4	Elkana,	July 2022	Pig farm	Zemo Khodasheni village, Akhmeta, Kakheti Elkana works on conservation and breeding of Kakhetian breed of pigs. The organization sells pigs to farmers who want to keep pure breed and develop pig farms. Consumers are local villagers, as well as farmers from other villages as well.
KI 5	Dimitri Khutsishvili	July 2022	Pig farmer	Akhalsopeli village, Kvareli, Kaketi region. He has Kakhetian breed of pigs. Buyers are local farmers living nearby.
KI 6	Merab Kobakhidze	July 2022	The owner of Intensive pig farm and Lori producer	Krikhi village, Ambrolauri, Racha region. Merab an intensive pig farm with Duroc, Landrace and Yorkshire breeds of pig. He makes Lori and sells it locally and in Tbilisi through his close friends and relatives. Selling pork in summertime is a problem for him, he sells pigs to the butchers at a cheap price and needs facilitation to get in touch with buyers.
KI 7	Alika Ratiani	August 2022	Pig farmer/intermediary	Ambrolauri municipality, Racha region. Alika raises a mixed breed of pigs in a forest and sells it to the Lori producers.
KI 8	Antimoz Iarajuli	August 2022	Pig farmer	Tianeti municipality, Mtsketa-mtianeti region. The farmer has Kakhetian breed pigs mainly grown in a forest. He sells them via Facebook page but has a problem with finding consumers.
Rachuli Lori and Kakhuri Vichina				
KI 9	Tamaz Natmenadze,	July 2022	Lori producer	Ambrolauri municipality, Racha region. For Lori production Tamaz buys pigs from an intermediary who collects them from Imereti and Racha regions. His consumers are locals, tourists, and relatives in Tbilisi, who promote products among friends. He needs support in labelling and promotion of Lori and in updating smoking facility as well.
KI 10	Lela Zakaraia	July 2022	Teacher, the initiator to gain the status of intangible cultural heritage for Lori making tradition	Glola village, Oni, Raca region. She is motivated to apply to the National Agency for Cultural Heritage, to fill in an application and provide all necessary documents for granting the status of intangible cultural heritage to Lori making tradition

KI 11	Davit Berelidze,	July 2022	Lori producer/ Pig farmer	Sakao village, Oni, Racha Region. The farmer has local mixed breed of pigs, raised in a forest. He produces Lori, which is sold to tourists and to people from different villages. The producer is motivated to work on promotion and popularization of Rachuli Lori to reduce falsification
KI 12	Sese Sokhadze	July 2022	Lori Producer/ Pig farmer	Bugeuli village, Ambroaluri, Racha region. The farmer has local mixed breed of pigs, which he raises in a forest and produce Rachuli Lori. He sells Lori to the tourists, and relatives in Tbilisi. The farmer needs support in promotion and popularization of Rachuli Lori
KI 13	Irina Kereselidze Nativeracha Ltd, Facebook link	July 2022	Lori Production	Ambrolauri. The company makes Iberico Ham, Chorizo, Sausages, Kamishi (moldy meat), Sala (white fat), and other products. It has own pig farm in Gari village, near the forest which covers 10 ha. Pigs are grown in the forest eating forest fruit, grass stems, and roots which results in a delicious taste of meat. For production, the company uses pork from its own farm. The company sells products in supermarket chains
KI 14	Khatia Tsverava,	July 2022	Lori producer,	Dzirageuli village, Ambrolauri, Racha region. The producer buys pigs locally and produces Rachuli Lori. The consumers are tourists, local people from different villages, neighbors, friends. She also sells products in Tbilisi via the FB page 'Rachuli Loruka'. She wants to buy more pigs in the autumn and produce more Lori and sell it in summertime, when demand is high. She often taked part in different exhibitions and festivals to promote Lori and reduce falsification.
KI 15	Gia Khidureli	July 2022	Lori producer/ pig farmer	Oni municipality, Racha region. The farmer has local mixed breed of pigs fed in a forest. He produces Lori and sells it to tourists, friends and relatives in Tbilisi, He wants to build a proper facility where he will process meat, smokes it, and stores it in a refrigerator, also wants to cut Lori in a small portion, pack it, label and sell it in supermarkets.
KI 16	Mamuka Metonidze	August 2022	Lori producer	Bugeuli village, Ambrolauri, Racha region. The producer buys local mixed breed of pigs, raised in a forest, in Imereti and nearby villages. He produces and sells it to tourists, and restaurants in Tbilisi. The producer was financed by FAO several years ago. to build a new smoking facility
KI 17	Nika Kavlashvili	August 2022	Lori producer	Zudali village, Oni, Racha region. The producer used to have pigs, however, last and bought them from neighboring villages. FAO helped him to build a smoking room. Consumers of his product are tourists, restaurants, and hotels in Tbilisi. Promotion of Rachuli Lori.
KI 18	IE Ivane Otiashvili Brand name Glekhuri Shashkhi, Kakhuri <i>Vichina,</i>	August 2022	<i>Vichina</i> producer	Nukriani Village, Signagi municipality, Kakheti region the producer started producing smoked <i>Vichina</i> in 2010. By that time selling points were Pupuli supermarkets chain, small shops, agri markets, Elkana shop in Tbilisi and HoReCa sector. He used to purchase parts of carcasses legs and ribs from farmers and butchers. After Covid-19, the production and demand for Glekhuri Shashkhi was decreased. During 2021-2022 the enterprise almost has not worked. The enterprise is financed by Elkana and Enterprise Georgia. Currently, the enterprise is not functioning
Rules				
KI 19	Ana Kanteladze	August 2022	The Head of the ICC in the Racha -Lechkhumi	Ambroaluri municipality, Racha region.



			and Kvemo Svaneti region	Ana is involved in organizing festivals, and events in the regions. She also has a local NGO supported by the FAO and NFA, which implemented a pilot programme of vaccinating pigs against classical swine fever. She mentioned that the main problem in Lori production is weak control of pigs' health condition when bringing them from neighbouring regions of Racha. She expressed readiness to be involved in control of pigs' health condition in Racha
KI 20	Gabriel Chikvaidze	August 2022	The Head of Racha - Lechkhumi and Kvemo Svaneti regional division of the NFA	Ambroaluri municipality, Racha region. The NFA does not have an obligation to implement registration/identification of pigs. In 2019, there were some limited outbreaks of African Swine Fever in Racha-Lechkhumi and Kvemo Svaneti regions, around 80 heads of pigs died. Since then, officially no cases were observed by the NFA in Racha. Last 2-3 years the ASF does not appear in the region where is a good sign.
KI 21	Demna Khelaia	August 2022	The Head of the Veterinary Department of the NFA	The MEPA has a plan to implement the registration/identification of pigs for the next year, however, NFA sent a recommendation to MEPA to postpone this process because the NFA does not have enough resources to manage the identification/registration.
KI 22	Tengiz Kalandadze	August 2022	The Head of the Village Development Department of MEPA	No regulation related specifically to Lori production; however, he can be involved to prepare guideline or standard on FS&H requirements and for traditional smoking practices of Lori. Lori product should be registered as an intangible cultural heritage and Protected Geographical Indication status. He will support preparation of standards
KI 23	Vasil Kvernadze Paata Kurdadze	August 2022	The Head of the FS Department of the NFA and his Deputy	No regulation related specifically to Lori production. Potential to work with the MEPA and NFA to prepare guidelines or standards on FS&H requirements and for traditional smoking practices of Lori.
KI 24	Zviad Asanishvili	September 2022	The Head of the Identification/registration Department of the NFA	Provided approximately information about the number of pig farms and pig population in the country

In 2007¹⁸ when African Swine Fever¹⁹ spread in Georgia a significant number of pigs died including Kakhetian pigs and this unique breed was in danger of extinction. In 2016 the Scientific-Research Center of Agriculture found a few surviving heads of the Kakhetian breed in Pankisi valley in Kakheti, Dedisferuli village and in Dusheti region and used it for reproduction and preservation in the collective farm of the scientific research center in Polichala. Later the Spanish Company 'Deraza Iberico' with Georgian state investment entity the Partnership Fund together with Scientific-Research Center started working on preservation of Kakhetian breed of pigs in Native Georgia farm in Racha which currently has the fourth generation of the Kakhetian breed.

Currently the Kakhetian breed of pig is available for sale in the following places:

- Native Georgia farm in Gari village, Oni municipality [Nativerachald](#)
- Elkana Bio Farm, Akhmeta Municipality www.elkana.org.ge
- Through the Ministry of Economy's auction [eAuction](#) (which sells the piglets bred in the collective farm in Ponichala)
- From farmers in Kakheti, Tianeti, Imereti regions, some farmers are hiring one specialist from the Scientific-Research Center of Agriculture who advises them on how to produce pure breed and make selections properly
- www.facebook.com.

Table 8 Characteristics of existing breed of pigs in Georgia

LOCAL UNKNOWN MIXED BREED	
	<p>Local unknown mixed breed obtained from breeding different breeds of pigs, scientific study about the characteristics is not available, however based on field visits and market research we identified the main breed varieties. They have hair, bristles, colours are gingery, white with black spots, half black and half white, ears of pig might be straight or down dropped or wide, long snout, black or white or mixed hoof. This pig easily adapts to living in the forest, village and valley and eats forest fruit. Fat is well distributed throughout the meat and has an incomparable taste, which is suitable for Lori thus we can call this breed a traditional Lori pig.</p> <ul style="list-style-type: none"> ➤ Average live weight of 18-month female pig reaches 110-120 KG (sometimes 180 KG); ➤ Average live weight of male pig reaches 80-100 KG ➤ Slaughter output: 60-65%. ➤ Birth rate: 5-8 piglets per birth ➤ Sows come into heat: 6-8 months of age when they have enough good feed and water ➤ Pregnancy: Lasts for 114 days; 3 months, 3 weeks, 3 days (3+3+3), Thus, pigs are giving birth twice a year April-May, and June-July. It is an opportunity for farmers to increase the number of pigs rapidly.
	<p>Male piglets age 2-3 months are castrated, which reduces aggression toward other pigs, helps pigs grow fast, prevents the meat from having a strong smell, avoids uncontrolled breeding and even castrated he can protect the flock from attacks of wild animals.</p>

¹⁸ [Interview with Rolan Mitichashvili Scientific -Research Center of MEPA](#)

¹⁹ www.woah.org African swine fever is a highly contagious and deadly viral disease in pigs. There are neither vaccines nor cures available yet.

KAKHETIAN BREED



The Kakhétian breed originated from the domestication of Caucasian short-eared subspecies of European wild pig and is very similar to it in appearance. The breed is distinguished by hardiness, resistance to cold and easily adapts to living in the forest, as well as having self-defensive, maternal and herd instincts e.g., keeping together, protecting herds from attacks from wild animals, going to feed in the forest and coming back home. Some pigs are covered with straight hair and called 'Lagaza' and those with curly hair are called 'Gruza'. Hair colour may be black, grayish-black, black-chestnut or rarely dark red.

- Average live weight of female pig: 110-120 KG (sometimes 150 KG);
- Average live weight of male pig: 80-100 KG
- Slaughter output: 60-65%.
- Birth rate: 5-8 piglets per birth
- Sows come into heat: 6-8 months when having enough feed and water
- Pregnancy: 114 days; 3 month, 3 weeks, 3 days (3+3+3), Thus, pigs are giving birth twice a year April-May, and June-July.



Male piglets aged 2-3 months are castrated, which reduces aggression toward other pigs, helps pigs grow fast, and does not have an unpleasant smell and taste that is released when the pork is heated. They do not wander to another herd, it avoids uncontrolled breeding, even castrated they can protect the flock from attacks of wild animals.

SVANETIAN BREED



Nowadays the Svanetian²⁰ breed of pig is in danger of extinction. This breed is smaller than the Kakhétian and is not used for industrial use, however, the Scientific-Research Center of Agriculture is currently working to preserve this breed. The hard climate of high mountains (1800-2000 m. above sea level) and a small amount of feed put its drain on the productivity and appearance of the Svanetian breed of pigs²¹.

- Average live weight of female pig: 35-40 kg (max 45 kg)
- Average live weight of male pig: 50-60 kg (max 70 kg)
- Slaughter output: 60-65%
- Birth rate: 5-6 piglets per birth

²⁰ Agrokavkaz.ge

²¹ Agrokavkaz.ge

PEDIGREE PIGS



The Duroc pig is an older breed of domestic pig. The breed was developed in the United States. A very large pig, the ears are drooping, the colour is often an orangish-brown, but ranges from a light-golden shade to a deep mahogany-red.

- Average live weight of female pig: 200-300 KG
- Average live weight of male pig: 250-350 KG
- Slaughter output: 78-83 %.
- Birth rate: 8-10 piglets per birth
- Pregnancy: Lats for 114 days; 3 month, 3 weeks, 3 days (3+3+3), Thus, pigs are giving birth twice a year. It is an opportunity for farmers to increase the number of pigs rapidly.



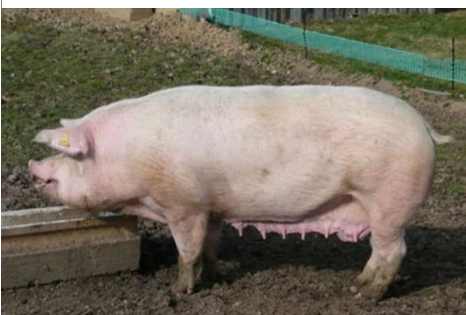
The American Yorkshire is the most numerous pig breed in the United States. It derives from pigs of the British Large White or Yorkshire breed imported from the United Kingdom or from Canada at various times from about 1830 to the mid-twentieth century. They are large and white, and have large lop-ears

- Average live weight of female pig reaches 210-310 KG.
- Average live weight of male pig reaches 270-330 KG, in good food condition
- Slaughter output: 78-83 %
- Birth rate: 10-12 piglets per birth
- Pregnancy: Lats for 114 days; 3 month, 3 weeks, 3 days (3+3+3), Thus, pigs are giving birth twice a year. It is an opportunity for farmers to increase the number of pigs rapidly



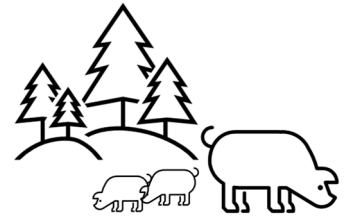
Landrace is a Danish pig, produced from crossbreeding a local Danish pig with a British pig. They are large and white, with drooping ears a bacon breed.

- Average live weight of female pig reaches 220-250 KG.
- Average live weight of male pig reaches 280-300 KG, in good food condition
- Slaughter output: 70 %.
- Birth rate: 10-12 piglets per birth
- Pregnancy: Lats for 114 days; 3 month, 3 weeks, 3 days (3+3+3), Thus, pigs are giving birth twice a year. It is an opportunity for farmers to increase the number of pigs rapidly



STEP 1: Pig selection, Feeding, Preparation

Production of Lori is seasonal. It starts in late autumn in November and continues till March. During that period, it is necessary that the weather is cold/freezing as it helps the meat to dry. The smoking process takes around 2-3 months. Farmers slaughter different weights of pigs, min 30Kg max.160 KG with 60-65% output of fresh meat after slaughtering.



Step 2: Slaughtering a Pig and Preparations before Smoking

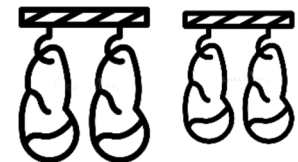
After slaughtering, the carcass of pig should be hanged to be drained of blood (10 -30 minutes). It should be cut into two pieces at the spine. Each piece of the carcass is called 'Feliki'. Carcasses should be entirely salted covering all parts including the joints (which should be cut for this purpose). On average 5 kg salt is needed for a 70 kg carcass. The bone of the spine should be removed, if left, the marrow from the bone should be removed, because it is perishable and might spoil the meat.



Salted carcasses should be kept in a big container made of wood, plastic or stainless steel for 20 days period. Following this, Carcasses should be hung for three-five days to drain the liquid.

Step 3: Lori Smoking Process

Carcasses are placed and hung in a special smoking room with a high roof usually made of wood which also imparts flavour to Lori. It carcass must be hung high enough, about 3-4.5 meters, to achieve better smoking and to avoid over darkening the colour of the carcass. The room must be naturally ventilated to allow smoke to leave and fresh air to come in.



Smoking begins with a high intensity fire and low smoke for five to seven days. Then the fire intensity is reduced and smoke increased. It must be ensured that the smoking process is constant for 1-2 months, while altering its intensity periodically by reducing fire and increasing smoke or vice versa.



For smoking, it is preferable to use stone fruit trees e.g. plum, cherry, and beech as firewood as they give special flavor to the Lori.

The final product is Lori, which should have yellow reddish colour and should be stored in a cold place at about 8-10 degrees centigrade. After the smoking process one carcass loses about 2-3 KG weight.



Figure 5: Lori Production Process

ANNEX 4: PROFIT LOSS OF PRODUCTION OF RACHULI LORI IN THREE DIFFERENT CASES

The table below describes three different scenarios of farmer’s income calculation from Lori production. For all cases the calculation is done on one pig, whose average live weight is 100 kg.

Scenario 1 is based on example when a farmer buys a pig (100 kg) on a market.

Scenario 2 Farmer has his own piglet which is fed daily with a regular feed and partly grows and feeds in the forest until it reaches 100 kg (takes about one year).

Scenario 3 is like the second one except the piglet is fed with a combined feed and needs about six months to reach 100kg.

Table 9 Profit Loss of Production of Rachuli Lori

		Scenario 1	Scenario 2	Scenario 3
Expenses	Pig cost on market (100 kg) ²²	900		
	Feed cost for pig for one year to reach 100 kilos ²³		360	
	Combined feed cost for pig for 6 months to reach 100 kilos ²⁴			1080
	Annual cost for veterinary treatment of a pig against swine erysipelas and parasites		30	30
	Slaughterhouse service cost		70	70
	Pig slaughtering and cleaning service	20	20	20
	Salt cost ²⁵	10	10	10
	Electricity cost for keeping a pig carcass in refrigerator or under special light	10	10	10
	Firewood for smoking Lori from one pig carcass	20	20	20
	Water		10	10
Total expenses (GEL)	960	530	1250	
Income	Price of 1kg/Lori 35 Gel x one pig carcass ²⁶	2100	2100	2100
	Sub-products: Head and legs ²⁷	42	42	42
	Sub-products: Heart and Liver	18	18	18
	Total income (GEL)	2160	2160	2160
Net Income (GEL)	1200	1630	910	

²² 1kg live weight pig costs 9GEL

²³ Feeding a pig daily (1KG feed which costs 1 Gel) during a year

²⁴ Feeding a pig daily with 5KG combined feed which costs 1.20GEL/kg for 6 months
6*30=180GEL/month; 180*6-month 1080GEL/six-month period when reaches 100 KG /pig

²⁵ One pig carcass needs about 7kg salt

²⁶ 60kg lori is made from one 100kg pig. A carcass weighs 65% of a 100kg pig, after it is smoked it becomes 5 kilos less.

²⁷ Additional income may be generated from selling sub-products, which in many cases is not calculated by farmers as a commercial aim. Head and leg of a 100kg pig weighs 6kg (1kg costs 7 Gel) and heart and liver weighs 3kg (1kg costs 6Gel)