



The Livestock Sector in the Turkish Republic of Northern Cyprus: An Examination of Red Meat Sector

Kamil Sertoglu*, Irfan Esendagli

Department of Economics, Eastern Mediterranean University, North Cyprus. *Email: kamil.sertoğlu@emu.edu.tr

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ABSTRACT

This study generally analyses the livestock sector in the TRNC and the red meat sector in particular. The historical overview and economic structure of the TRNC show the importance of the agricultural sector for the TRNC. In order to understand the red meat sector in general, first the international red meat sector is examined shortly and then the red meat sector in the TRNC is analysed. The research data rely on a descriptive analysis based on the interpretation of primary and secondary data from the official websites of the Ministry of Agriculture of Northern Cyprus and Food and Agriculture Organization of the United Nations (FAO). TRNC does not have a liberal economy and import of red meat is strictly forbidden to the country. However, recently, discussions regarding liberalising the import of red meat led to further discussion of the problems experienced in red meat production and the factors affecting costs of production. The decision to import red meat supports the depth of existing problems in this field today. This study aims to reveal the necessity of policies that will bring possible solutions to overcome the structural problems in the red meat sector.

Keywords: Red Meat, TRNC, Livestock Sector, Problems, Solutions

JEL Classifications: Q11, Q12

1. INTRODUCTION

Cyprus, after Sicily and Sardinia is the Mediterranean's third largest island. Due to the disagreements between Turkish and Greek Cypriots throughout the history, the island of Cyprus was divided into two as South and North. North Cyprus, which has limited natural resources and workforce, is a small developing Mediterranean island. It strives to maintain its economic development under the political isolation and embargoes due to the conflicts between the two communities (Celebi, 2011).

As in other small island economies, the TRNC economy has an economic structure with a small-scale internal market and limited natural resources, mainly based on the service sector. Generally, island countries with small economies try to increase foreign demand by providing access to foreign markets in order to ensure their economic development. The TRNC has also chosen this

path. However, the ongoing Cyprus problem prevents TRNC from accessing foreign markets. Deprived of sufficient interaction and cooperation with the international community due to political reasons, the TRNC has formed a unique economic structure over time (Besim and Sertoglu, 2015).

The economy of the North Cyprus is dominated by the service sectors such as tourism, higher education, public services etc. (Table 1). Compared to other sectors, although the agricultural sector contributes less to GDP, it has been a very important sector for the TRNC since the past, as it provides employment and income to a significant part of the workforce. In addition to providing employment and income to a significant part of the population, it also contributes to the increase of the country's income by obtaining export revenue from agricultural products. Animal husbandry is a major contributor to agricultural exports. It was valued at about 57.3% of total exports in 2018 (Table 2).

Furthermore, it supports the development of other sectors. For example, the contribution of the higher education and tourism sectors, which are often considered as locomotive sectors by many economists in recent years in the Turkish Republic of Northern Cyprus (TRNC), are directly related to the agriculture sector. In order to maximize the contribution of income from service sectors such as tourism and higher education to the economy, the agriculture sector should be able to produce at the price, quantity and quality demanded by the market. Otherwise, it will be inevitable to transfer a significant portion of the income from the service sectors to foreign countries (Besim and Sertoglu, 2015). Thus, it is seen as one of the main economic sectors.

In the developing and changing world, adequate and balanced nutrition is one of the most important and constant problems of human beings. In this respect, animal source foods are indispensable due to their biological features and cannot be substituted with other foodstuffs. The livestock sector, which is one of the sub-sectors of the agriculture sector, continues its importance from the past to the present. It will undoubtedly continue its importance in the future because animal products are the most important sources of adequate and balanced nutrition, which is the main problem of society in the developing and changing world (Susurluk Commodity Exchange, 2017). In recent years, parallel to the developments in the health sector, the population has been increasing with the prolongation of life expectancy and decreasing infant mortality. It is widely believed that the global demand for red meat, which is the most important source of animal protein (product), will increase in parallel with the population growth (Salter, 2017).

Shortly, livestock sector provides people with a healthy and balanced diet, as well as increasing national income and employment, providing raw materials to meat, milk, textile, leather, cosmetics and pharmaceutical industries, developing the industry related to animal husbandry, creating employment in rural areas, supporting the family economy and increasing foreign currency income through exports (Susurluk Commodity Exchange, 2017). Thanks to all these functions'; the livestock sector is very important for the TRNC. However, there are problems that need to be resolved in the back and forward links of the sector.

Table 1: Average distribution of GDP by sectors between 2014 and 2018 (% of GDP)

Main sectors	TRNC
Services	68,82
Industry	9,2
Agriculture	5,7

Source: TRNC State Planning Organization

Table 2: Composition of exports

	1977	1985	1990	1995	2000	2005	2010	2015	2018
1. Agricultural Products	77,4	77,6	45,5	40	31,7	36,1	38,2	26,3	22,7
2. Industrial Products	12,1	22,2	53,7	59,1	67,9	60,4	54	73,3	77,3
2.1. Processed Animal Products	3,8	8,4	18,1	17,7	24,2	40,8	40,8	63,3	57,3
3. Minerals	10,5	0,2	0,8	0,9	0,4	3,5	7,8	0,3	0

Source: TRNC State Planning Organization

2. MATERIALS AND METHODS

This paper is based on objective observations of livestock operations in the TRNC. In the paper, the current situation is determined by looking at the change in the red meat sector in the TRNC from 1977 to 2018. The findings are discussed with the experts and producers in the sector to determine whether the findings reflect the truth or not. The status of the red meat sector in the TRNC is analysed by a comprehensive review of the limited and widely distributed literature.

2.1. Global Red Meat Industry

In order to better understand the situation in the red meat sector in the TRNC, the situation of the sector around the world has been analysed. It has been determined that countries with high meat productivity and countries with low meat productivity in the livestock sector have similar characteristics among themselves. It has been determined that countries with high meat productivity not only have meat breeds, but also pay maximum attention to care and feeding conditions, and give great importance to reclamation programs together with preventive medicine activities. On the other hand, countries with low meat productivity have been found to have domestic breeds and animal breeds with low meat holding capacity, unlike countries with high meat productivity. In addition, it was concluded that animal diseases are common in countries with low meat productivity, and the care and feeding conditions are inadequate.

3. AN INVESTIGATION OF THE TRNC RED MEAT AND LIVESTOCK SECTOR

3.1. Analysis of the TRNC Livestock Sector

3.1.1. Genetic resources

The livestock sector in the TRNC consists of 4 sub-sectors: cattle, sheep, goats and poultry. However, since this study only examines the red meat sector, poultry farming is not included in the study. Holstein cattle, which is known for its high milk yield throughout the world, is the only cattle breed in the TRNC. In other words, all of the existing cattle assets in the country consist of dairy breed. The sheep population in the country consists of Chios sheep, Awassi sheep, Cyprus Fat-tailed sheep and crossbreeds of these breeds. On the other hand, while the majority of the goat population in the country is Damascus goats, mountain goats and their hybrids in different degrees, the number of Saanen and Alpine goats, which have high milk yield, has been increasing rapidly in recent years. (TRNC Ministry of Agriculture and Natural Resources Agriculture Master Plan, 2017; Wilson, 2017). When the characteristics of the animal breeds that found in the country are examined, it is observed that they are generally dairy

and combined breeds. In other words, there is not any meat breeds in the country.

3.1.2. Production systems

Most of the livestock enterprises in the TRNC are small-scale. According to Wilson (2017), most of the small enterprises are managed in conjunction with part-time basis and crop production. Due to the fact that most of the registered producers in the country are not real producers and the primary source of income for these producers is not livestock, the necessary investments are not made in livestock enterprises (Besim and Sertoğlu, 2015). For example, milking in ovine farms is mostly done by hand under primitive conditions. Few of the enterprises have a simple separate milking parlour and a small number of modern milking parlours (TRNC Ministry of Agriculture and Natural Resources Agriculture Master Plan, 2017). Moreover, the facilities that used for housing, feeding, control and management of animals are often primitive. In other words, most of the pens are lacking in infrastructure. Furthermore, hygiene is generally low standard. There is little interest in biosecurity and animal health services are inadequate (Wilson, 2017).

3.2. Analysis of the TRNC Red Meat Sector

3.2.1. TRNC red meat production and consumption

Every society has unique eating habits. Since the island has hosted many civilizations in the historical process, the Cyprus Cuisine has gained its present richness thanks to the interaction with all the communities that are related to the island. The use of red meat is high in Turkish Cypriot cuisine. Cyprus Meatballs, Şeftali kebab, Küp kebab, Molohia, Kolokas, Pastırma and Samarella are specific to traditional Turkish Cypriot cuisine dishes. The high demand for red meat in meals has even caused dolma that made without the use of meat to be called “fake dolma” among the people.

Per capita consumption of red meat in the TRNC is well above the world average. Although worldwide total meat consumption was 43.22 kg in 2015, red meat consumption was approximately 12 kg. Moreover, while red meat consumption is approximately 11 kg in South Cyprus, it is approximately 19 kg in Turkey. On the other hand, per capita red meat consumption was 36.33 kg in the TRNC in 2015 (Table 3). While consumption of red meat in TRNC is 3 times more than worldwide average and southern Cyprus, it is 2 times more than Turkey. These statistical data prove that red meat is an important product in Turkish Cypriot cuisine. Although red meat is an important product in Turkish Cypriot cuisine, it is observed that the consumption of red meat per capita in the long term is 34 kg per person on average, despite the increase in the income of the consumers (Figure 1 and Table 4). The main reason why the red meat consumed per capita did not increase over time is

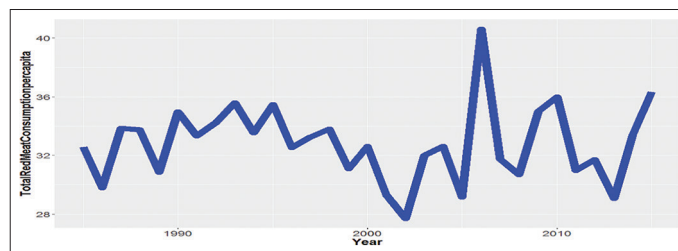
the increase in red meat prices over time. One of the main reasons for the increase in red meat prices is the meat smugglers who have become cartels. These smugglers increase the prices of livestock in the local market in order to increase their profit margins, causing red meat prices to rise. Due to the rising meat prices, there is not much change in the amount of red meat consumed per capita despite the increase in the income of the consumers.

When the red meat production in the TRNC is examined, a picture similar to the consumption of red meat emerges. Due to the demand for cattle and sheep meat over time, the production of these two types of meat has increased. However, since the demand for goat meat is not high, it is clear that there is not much increase in this type of meat production (Figures 2 and 3).

3.2.2. TRNC red meat market analysis in the form of supply and demand

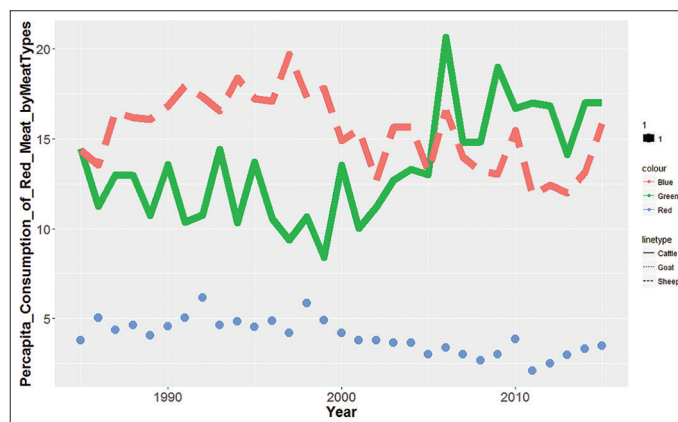
Considering the total red meat production and per capita consumption of red meat by years, it is seen that the total

Figure 1: Total Red Meat Consumption per capita in TRNC from 1985 to 2015 (kg)



Source: TRNC Ministry of Agriculture and Natural Resources

Figure 2: Bovine and Ovine Meat Consumption in TRNC from 1985 to 2015 (kg)



Source: TRNC Ministry of Agriculture and Natural Resources

Table 3: Meat Consumption in the World and Some Selected Countries (1975 and 2015) (kg/person/year)

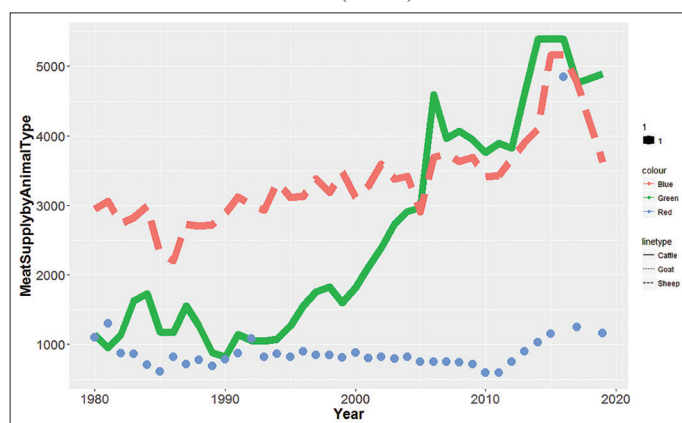
	1975					2015				
	Beef and Buffalo	Poultry	Goat and Sheep	Pig	Total	Beef and Buffalo	Poultry	Goat and Sheep	Pig	Total
World	11.12	4.58	1.62	10.25	28.38	9.32	14.99	1.91	16.02	43.22
South Cyprus	8.99	8.89	6.52	14.21	39.47	5.83	24.51	5.00	33.65	70.35
Turkey	3.81	4.64	9.91	0.01	18.42	12.34	19.72	4.95	0	37.03

Source: Food and Agriculture Organization of the United Nations Statistics

Table 4: Minimum Wage from 2005 to 2015

Year	Minimum Wage (TL)
2005	720
2006	780
2007	950
2008	1060
2009	1237
2010	1300
2011	1415
2012	1560
2013	1730
2014	1834
2015	2020

Source: TRNC State Planning Organization

Figure 3: Bovine and Ovine Meat Production in TRNC from 1976 to 2018 (Tonne)

Source: TRNC Ministry of Agriculture and Natural Resources

production has increased in parallel with the consumption of red meat. However, it should not be forgotten that especially in recent years, TRNC is a country that has experienced development in service sectors such as tourism and education. These sectors bring in a significant number of tourists and students to the country. Considering these factors, examining the red meat market in terms of supply and demand will help to obtain more accurate results in the study.

Population size, GNP, minimum wage, number of students and number of tourists are considered as factors affecting the demand for red meat in the TRNC. As a result of the examinations, it has been determined that the demand for red meat has increased significantly over the years, depending on the increase in the population, GNP, income, number of students and tourists. On the other hand, the red meat supply, which was 5,189 tons in 1980, increased over time and reached the highest level with approximately 10,500 tons of red meat production in 2016.

Although there has been an increase in the supply of red meat from 1980 to 2019, the increase in the country's population, GNP and income from 1980 to 2019, and the introduction of students and tourists to the country by the higher education and tourism sectors increased demand considerably. The demand for red meat is much higher than the supply, due to the importance that red meat has in TRNC cuisine. It is normal for red meat prices to increase in TRNC because in recent years, the demand for red meat has

been increasing rapidly, especially with the increasing number of students and tourists. However, the supply of red meat does not increase as fast as the demand. Therefore, red meat prices are rising.

The common belief in the country is that meat prices should increase even more under these conditions. However, there is a prevailing opinion that meat smuggling in the country reduces this to some extent (Kutlay, 2021). However, as a result of the interviews with the people in the sector and the market analysis within the scope of this study, it is understood that this point of view does not fully reflect the reality. Contrary to popular belief, meat smuggling in the country does not reduce meat prices. On the contrary, it increases prices. Unlike other countries, since there is no meat market in the country, livestock prices are determined as a result of negotiations between the butcher and the producer, and these prices are heard by word of mouth among the producers. Smugglers use this situation to increase the prices of livestock in the market by buying animals from a few producers at high prices in order to increase their profit margins. Thus, they sell illegal meat, which they buy cheaper in the south of the country, at higher prices as a result of their speculation in the north of the country. Thus, smugglers increase meat prices in the country. In addition to smugglers, another reason for the increase in livestock prices in the country is the increase in import-based costs as a result of the continuous depreciation of TL in recent years. As a result of the increase in costs, livestock prices also increase, which causes red meat prices to increase. In the face of increasing prices, the idea of importing red meat comes to the fore as a solution proposal.

3.3. The Reasons for the Low Supply of Red Meat in the TRNC and the Idea of Bringing Imported Red Meat as a Solution

One of the main reasons for the low supply of red meat in the TRNC is the low carcass yield per unit animal in the TRNC. There are many reasons affecting meat yield in ovine and bovine animals. Some of these factors are feeding and care, housing conditions, animal health and breed of the animal.

The prevalence of hot and arid climate in the country and insufficiency of water resources prevent the diversity of feed production patterns in the TRNC. Therefore, the possibility of feeding with quality roughage decreases. Moreover, inadequate and expensive animal health services are available in the country. Due to expensive and insufficient animal health services, there are many diseases in the country such as Brucellosis, Lumpy Skin Disease, Scrapie, Maedi Visna etc. and these diseases cause not only low productivity but also economic losses. In addition, most of the animal shelters in the country are in bad condition (Wilson, 2017). In other words, shelters have many deficiencies in terms of infrastructure. Animal diseases and inadequate housing conditions cause many problems in the TRNC. Taskin and his friends (2006) concluded almost 1 out of 5 lambs that are born die. They asserted the widespread animal diseases and inadequate housing conditions in the country as the most important cause of this problem. The infrastructural deficiencies of shelters bring another problem besides the high mortality rate. According to Naimoğlu, head of the livestock association, livestock enterprises that have

infrastructure problems due to the rains that fall in January and February every year cannot sell their animals to butchers so red meat prices increase. In this case, butchers claim that there are not enough animals in the country and demand imported meat (Yeni Duzen Newspaper, 2020). As Naimoğlu said, butchers' demand for imported meat is usually in January and February. From this point of view, the idea that Naimoğlu defended may be correct. However, the correctness of this idea is not enough to solve the meat problem. On the other hand, the solution proposal put forward by butchers, namely the idea of bringing imported red meat, is not the right solution. Because, according to Aydın et al. (2010) and Ocaklı et al. (2017), who examining the effect of importing red meat on Turkey's livestock breeders, concluded that importing red meat caused the people who deal with fattening to leave this sector and caused more problems in the long run. Moreover, Cevger and Sakarya (2006) conducted a study in order to investigate the changes in red meat prices in Turkey over the years, taking into account the effects of inflation and red meat imports. In this study, they determined that the import of red meat, which was made to reduce the price of red meat, could not prevent the price increase. On the contrary, it caused the price increases to accelerate due to the decrease in production. Furthermore, Turkish Cypriot Chamber of Industry (TCCI) argues that the approach to cheapness with imports is wrong and that these approaches will increase foreign dependency and cause great damage to the Turkish Cypriot economy. According to the TCCI, first of all, policies that support imports instead of production should be abandoned, instead of opening imports, the development of existing production sectors and the provision of competitive environment by local resources should be encouraged. TCCI emphasizes that the only way to come out of the crisis with the least damage is to produce more as a society (Cyprus Newspaper, 2018). In order to find solutions to these problems, long-term solutions should be brought instead of the short-term decision such as imported meat.

In short, the inadequate production of high quality roughage in the country, absence of meat breeds, the prevalence of animal diseases due to the problems in the development of preventive medicine because of the expensive animal health services and inadequate shelter conditions are the some factors that negatively affect the carcass meat yield and cause the red meat supply to be low. Although the realization of red meat imports will have a positive effect in the short term, as Aydın et al. (2010), Ocaklı et al. (2017) and Cevger and Sakarya (2006) mentioned in their studies, red meat imports will cause more problems in the long term. To give an example from the TRNC, since the meat and dairy enterprises in the TRNC are directly linked to each other, importing red meat will cause not only those dealing with fattening but also those dealing with milk to leave this sector. In addition to this situation, the separation of producers from the sector will also cause a great unemployment problem. Since livestock enterprises in the country are generally small-scale family businesses, it is difficult for these people who leave the sector to find employment in other sectors. It is much more difficult for these people to find a job, especially in a country like the TRNC with a limited business area. Therefore, instead of importing red meats, it is necessary to focus on the solutions of these problems by thoroughly examining the problems that cause the low supply of red meat.

To sum up, although the carcass meat yield that obtained from bovine and ovine animals in the TRNC is above the world average as of 2015, it is not at the desired level. The low carcass meat yield per unit animal causes the red meat supply to be lower than the demand and increases meat prices. The fact that not only bovine but also ovine carcass meat yields in the south of the country are considerably higher than in the TRNC proves that there are serious problems in the country's animal husbandry (Table 5).

4. PROBLEMS IN THE TRNC LIVESTOCK SECTOR AND SOLUTION SUGGESTIONS

4.1. Problems

The livestock sector, which is a sub-branch of agriculture, has an important share in the TRNC economy. However, the fact that carcass meat yield is lower than Southern Cyprus, which has the same climate and geographical conditions, proves that there are problems that need to be solved in the livestock sector.

There are many reasons for the problems that experienced in the TRNC livestock sector. However, the basis of these problems is the lack of a sustainable production policy in the sector, the wrong support policy and the producers' inability to organize properly. One of the most important problems of the sector is the lack of a sustainable agriculture strategy determined with the participation of all stakeholders. Nowadays, it is seen that the state has difficulties in maintaining its short-term policies that determined periodically. These problems cause the producers to be unable to even make short-term production-investment plans and the debt-receivable balance in the sector to deteriorate. Therefore, manufacturers are hesitant to invest in the sector. Failure to make the necessary investments in the sector causes problems such as shelter, maintenance and feeding problems, scale problems and inability to specialize in the sector. In short, the absence of a sustainable policy in the sector reduces the investments made in the sector and causes some of the producers to make this sector as a second line of business.

On the other hand, the livestock sector in the country is generally supported by milk. In other words, producers are supported by the milk price. For this reason, dairy farming in the country has developed. However, the same is not the case in meat animal husbandry because most of the animals in the country are dairy animals due to the support given through milk. In other words, it is very difficult to find meat breed animals in the country. It is observed that producers operating in the field of meat livestock are faced with difficulties in obtaining livestock for fattening.

Table 5: Carcass Yield of Ovine and Bovine Animals in the World and in Some Selected Countries in 2015

	Cattle	Sheep	Goat
World	217,8	16,8	11,9
South Cyprus	331,6	21,4	21,7
TRNC	250	19,7	16

Source: Food and Agriculture Organization of the United Nations Statistics and TRNC Ministry of Agriculture and Natural Resources

Table 6: The Recommendations Presented to Shoot Down the Price of Red Meat by Increasing the Meat Efficiency and to Overcome the Problems in the Sector

	Strongly Recommend	Moderately Recommend	Not Recommend
Herd Tracking System	8	4	2
Preventive Medicine	11	2	1
Improving Shelter Conditions	11	3	0
Participation in Educational Activities	9	3	2
Health Checkup at Regular Intervals	13	1	0
Supports should be made to increase efficiency.	13	1	0
Expansion of Beef Breed Artificial Insemination Activities	13	1	0
Support should be given to lambs, kids and calves that have reached the age of 3 months.	13	1	0
A Sustainable Production Policy	13	1	0
Supports should only be given to real producers.	5	7	2

On the other hand, while producers in other countries generally have a strong organization mechanism through cooperatives, it is observed that the producers in the TRNC do not use this method much. Production activities carried out individually by following different strategies in a dispersed structure throughout the country are insufficient in solving the problems.

Due to the inadequacies in solving problems such as lack of qualified stud animals, inadequate care and feeding conditions, poor shelter conditions, common diseases, organizational problems, wrong production policy, lack of specialization, prevalence of small scale enterprises, high input prices and false support policy, the livestock sector cannot fully develop throughout the country and the targeted meat yield per animal has not been achieved.

4.2. Solution Suggestions

The following solutions were suggested for the problems identified in the study:

- Incentives should be given to producers in order to increase the use of artificial insemination activities, especially in cattle breeding. In this way, diseases that spread in the herd with the bull are prevented, and breeds with high genetics are obtained.
- Dairy breed artificial insemination should be applied to some cows in order to rejuvenate the herd by 20% every year, which is a worldwide accepted situation when artificial insemination activities are carried out. For example, in a farm with 100 cows, 20 best quality cows should be inseminated with female dairy breed semen. Thus, the calves born will meet the stud animal needs of the herd in the following years. After the breeding animal needs are met, the remaining 80 cows should be artificially inseminated with meat breeds to obtain hybrids with high meat holding capacity. In using hybrid, both female and male animals are raised for meat production. In this way, by obtaining beef cattle with high meat holding capacity, both higher quality and more efficient meat production is realized.
- Propellers must be used in order to prevent the heat stress on the animals, especially in the summer.
- New businesses should be allowed on the condition that they build farms suitable for animal welfare. Otherwise, new farm set-ups should not be allowed.
- Improve the shelter infrastructures and eliminate their negative effects on productivity, animal health, product health and the environment.
- The dependence on imports should be minimized by giving more importance to the resources available in the country. For example, more emphasis should be placed on the use of animal excrement rather than using imported fertilizers in agricultural activities.
- Support should be given to the production of high quality forage crops in the country in order to reduce the use of concentrate feed, which is an indispensable part of animal husbandry activities. In addition, the use of drought-resistant seeds should be made widespread, and the problems experienced in grain feed and roughage production in dry years should be minimized.
- In order to increase the knowledge of the producers in the sector, training activities should be continued in a more comprehensive way.
- By making it compulsory for the producers to participate in these training activities, both the awareness of the producers should be raised and the producers should be known more closely. By getting to know the manufacturers closely, it can be determined which manufacturer actually does this job and which manufacturer does this job as a second job or hobby. Those who perceive the sector as a second line of business should be kept away from this sector. Thus, it will be possible to reach profitable business dimensions by allowing only real producers to produce in the sector.
- Producers should turn to cooperative activities, which are common in other countries. In other words, the state should take measures to encourage animal producers to gather under the roof of a cooperative.
- Due to the lack of a sustainable production policy as well as the wrong supporting policy, many businesses across the country have a small number of animals and see this business as a secondary job. A sustainable agriculture policy needs to be implemented immediately. Thus, producers who hesitate to invest in the sector will find the opportunity to invest more in the sector, and productivity will increase with the increase of mechanization in the sector. Moreover, in order for only real producers to produce in the sector, support should be given only to real producers and this support should not be in the form

of price support. Instead of price support, support should be given to baby lambs, goats and calves at a certain age. In this way, the continuation of production is ensured, the real producers are supported, and the high mortality rate in new born lambs, goats and calves, which become the bleeding wound of the country, is reduced. In addition, by giving an extra premium to each animal born by artificial insemination, artificial insemination activities are encouraged and can increase productivity throughout the country by helping to increase the animal population with high genetic characteristics. In addition, when supporting producers, the state should also look at whether producers are participating in training activities, whether housing conditions are suitable for animal welfare and whether they are producing quality roughage. In this way, while the state supports the producer, it will also support the producers to increase their knowledge in the sector, to improve the shelter conditions and to produce quality roughage.

To sum up, in order to develop meat and dairy farming, it is observed that producers operating in this field face some difficulties in providing breeding animals and continuous feed of the same quality. Achieving the desired level of development in this sector by increasing animal production depends on breeding and distributing bred pedigree breeders to the producer, using modern animal shelters, effective fight against diseases and stabilizing the production of quality animal feed. Thus, productivity in animal production will be increased, cost factors will be positively affected and a more regular development will be achieved in animal production.

4.3. Discussing Findings with Experts and Producers in the Industry

In order to determine the validity of the findings obtained as a result of the study, the opinions of experts and producers in the sector were consulted.

In line with the examinations made in the study, it has been determined that although the meat yield per unit animal in the TRNC is above the world average, it is lower than Southern Cyprus, which has the same climate and geographical location. As the reasons for this, it has been determined that the animal breeds in the country are generally dairy and combined breeds, animal diseases are common, and shelter conditions as well as care and feeding conditions are inadequate. Most of the interviewees confirmed that these factors are the main factors causing low meat productivity. Thus, as a result of the interviews, it was determined that these factors determined in the study reflect the reality. On the other hand, the people who were consulted point out the age of the animal as another factor that causes low carcass meat yield. Producers, especially ovine producers, stated that they send their animals to slaughter at an early age before they complete their development due to the economic difficulties they experience due to irregular support and milk payments, and stated that this is a factor that causes low carcass meat yield.

When looking at the main problems encountered in the sector, problems such as high input prices, insufficient and wrong support

policy, shelter problem, care and feeding problem, breeding animal problem, low level of knowledge of producers, organization problem, scale problem and production policy have been identified. Some factors are not fully approved by the producers. For example, the low level of knowledge of the producers and the scale problem were not supported by the producers. Because producers think that the information they have is sufficient for them. On the other hand, factors such as high input costs, widespread diseases, and production policy problems received great support. As a result of the interviews, although some factors received less support, the majority of the people whose opinions were consulted stated that these factors determined in the study reflected the truth.

Based on the study conducted in Turkey, the ideas of the producers on how the importation of red meat will affect them were consulted. 4 people out of 10 whose ideas were consulted stated that they would give up this job due to economic problems in the long term if imported meat was imported, while 3 people stated that they would reduce the scale size and 1 person would quit this job immediately. On the other hand, 2 people stated that this situation would not affect them because these people are of the opinion that this situation will not affect them since the imported meat will be sold like domestic meat due to the fact that the label law is not implemented in the country. In general, as a result of these results, a situation similar to the study conducted in Turkey emerges. If imported red meat is brought in, producers will be cut off from this sector in the long run and this will cause more problems. For example, a structure based on imports will emerge. However, it is not acceptable for people's basic food sources to be based on imports, such as red meat because an import-based order is definitely not sustainable. While providing access to food, it should be in a continuous, healthy and accessible structure. However, it is not always possible to reach these factors in an import-based system. For example, in times of war or famine, countries may impose an export ban on basic food resources to protect their own people. For this reason, it is necessary to increase domestic production by developing agriculture and incentive policies in a way that will increase productivity instead of an order based on imported meat.

Finally, as a result of the study, many solutions have been proposed for the problems experienced in the sector. The people consulted for their opinions supported most of these suggestions. However, some producers do not approve of factors such as supporting only real producers, making participation in training activities compulsory and developing herd tracking systems. Since the producers think that the information they have is sufficient for them, they do not look forward to participating in compulsory training activities and costly herd tracking systems. On the other hand, according to the producers, instead of the idea of supporting only real producers in the sector, all producers who do this work should be supported, and they mention that extra support should be given to businesses whose only livelihood is livestock. As a result, although there were differences of opinion on some factors, the people who were consulted stated that they supported the recommendations given in this study (Table 6). In addition, experts in the sector also suggested that professional livestock breeding should be developed in the country in order to increase meat production.

As a result, although there were differences of opinion on some factors, it has been confirmed by the experts and manufacturers in the sector that the findings obtained in this study reflect the current situation in the sector.

5. CONCLUSION AND RECOMMENDATIONS

The economic overview of the red meat sector has shown that the country cannot realize its current potential due to the problems it contains in animal husbandry. It is clearly observed that even though there has been an increase in red meat production and consumption over the years and a significant increase in carcass meat yield has been achieved, it is clearly observed that the desired point has not been reached. When the carcass meat yield is compared with the south of the country, the existence of problems in the sector clearly shows itself. As stated before, the TRNC red meat sector's inability to realize its current economic potential is related to the sector's lack of a sustainable agricultural policy and not being properly supported. The realization of policy that will support production and efficiency will contribute to the sectorial and economic development of the country.

The researches conducted in the study showed that there are many problems in the TRNC red meat sector. Problems encountered in the sector caused low productivity per animal, which has become one of the most important problems in the sector. The low amount of red meat obtained per unit animal due to the problems in the sector caused the red meat supply to remain at low levels. On the other hand, the country's population, GNP, income, and the number of tourists and students coming to the country have increased significantly in recent years, significantly increasing the demand for red meat. As the demand for red meat is higher than the supply, red meat prices are increasing and the idea of imported red meat comes to the fore. However, as a result of research, such a solution proposal is not accepted because it will cause more problems in the long run because, bringing imported red meat to the country will cause the livestock producers who struggling with many problems to leave the sector. For this reason, importing red meat is not seen as a solution as a result of this study, since the import of red meat will result in a decrease in the export revenue of the country and the unemployment of many people in the country, since the producers will leave the sector in the long term. What needs to be done to solve the problem is to increase the production in the country by increasing the low productivity per animal that causing the problem. For this reason, what needs to be done is to increase the productivity per animal as much as possible rather than import red meat.

At this point, what needs to be done is stated below.

1. Beef cattle breeds that are suitable for country climatic conditions such as Simmental, Angus, Hereford, Charolaise, and Limousine should be brought to the country by artificial insemination method. Goat breeds that are suitable for country climatic conditions such as Boer, Kalahari, Savanna and sheep breeds that are suitable for country climatic conditions such as Wendeen, Van Rooy, Katahdin, and Dorper should be brought

to the country and trials should be carried out.

2. Most of the livestock businesses in the country are very small-scale and seem far from profitable. Such businesses see this job as a second job or hobby. People who see this job as a second job should be removed from the sector and only the people who actually do this job in the sector should be left.
3. With the exclusion of those who see the livestock sector as a secondary source of income from the sector, economic developments in the sector should be achieved by providing productivity enhancing supports to real producers remaining in the sector instead of price support. For example, in order to increase productivity by increasing animal welfare, shelter conditions should be improved, animal diseases should be struggled and feeding and care conditions should be improved.
4. Along with increasing the level of knowledge with the trainings to be provided to the producers in the sector, the necessary importance should be given to the infrastructure conditions. With the resolution of the infrastructure problems in the sector, meat production should be increased by paying particular attention to increasing the small ruminant population.
5. TRNC government should stop the production of politics, which causes inputs from the agricultural sector to be dependent on foreign sources. The use of imported concentrated feed should be reduced by encouraging the production of quality roughage in the country. Thus, a more economical production is provided. In addition, animal diseases should be prevented by expanding livestock activities that prioritize the welfare of animals. Thus, dependence on expensive imported animal drugs should be reduced. In short, the TRNC government should prevent the inputs in the agricultural sector from becoming dependent on external factors. Therefore, these steps, which can be taken by the TRNC government, can be useful not only for the agriculture sector but also for the future of the island.

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