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International Competitiveness: Analysis of Turkish Animal Husbandry: An Empirical Study in GAP Region

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Abstract
Animal husbandry sector plays an important role in nutrition, and has so many economic functions such as increasing national income and level of welfare, providing raw material for food, textile, leather, cosmetic and medicine sectors. At the same time, the sector has many other effective social functions such as decreasing and preventing migration, and decreasing registered and unregistered employment. In addition, the human being benefits from all the materials of the animals from their skin to their nails. This research reveals the international competitiveness level of Turkish animal husbandry sector by emphasizing to GAP region of Turkey using Porter's Diamond Model. The results show Turkey's competitive power in international animal husbandry market is weak and with potential accession to EU in near future, its position is vulnerable and is open to competitive forces from nations within the EU. In undertaking this study, principle features of the competitiveness structure were explained and strategies were recommended in order to make the sector more competitive in the world. Both primary and secondary research methods were employed during the research.

Keywords: Animal Husbandry, Strategy, Turkey, Competitive Advantage

1. Introduction

Animal husbandry sector has been one of the most indispensable areas for the human beings within agricultural industry throughout the history. It has always been a driving force for people to deal with animal husbandry due to animal food products, which can be obtained in various conditions and sources, have an important place among fundamental nutrients. Especially the animal food products have an important role in human nutrition. If animal derived food products are under a certain level in human nutrition it is qualified as insufficient nutrition. It is highly recommended that at least 40-60% of the daily protein consumption should be met from animal food products depending on the difference at age groups. Comparison with the changes in the numbers of the animals between the countries revealed that the numbers of many animal species decrease in developed countries. Such a decrease has particularly become clearer since 1990. Despite such a change in developed countries, increase in the numbers of all animal species in developing countries has been observed.

For instance, number of bovine animals in developed countries decreased from approximately 387 million in 1970 to 316 millions in 2004. On the other hand, the number of bovine animals in developing countries has increased from 694 million to 1 billion (SPO, 2008; TKB, 2008). However, such decreases or increases in animal population are not individually enough to assess the general performance of the animal husbandry sector. Animal production is just one of the most important items of the sector. An improvement in animal production has also been observed since 1970. For instance, total amount of meat production has increased to 259 million tons from 100 million tons. Cattle production, which amounted to 38 million tons in 1970, reached up to 59 million tons by the end of year 2004. A similar development has also been observed in milk production. The amount of milk produced throughout the world in a process of 35 years increased 1.6 times and reached to 618 million tons from 391 million tons. The lowest increase was seen in cow milk and the highest increase was seen in buffalo milk (FAOSTAT, 2006; SPO, 2006). Today, only 5.4% (*24.5 million people*) of the population of the European Union (*454 millions*) deals with agriculture and animal husbandry. However, despite the fact that only a small population is engaged with agriculture and animal husbandry, animal production is an important source of income of the Union. The share of animal production in agricultural income in the Union was 41.9% in 2003. This amount varies between 75.0% and 25.6% among the countries. Total agricultural production approximately amounted 306 billion Euros; and 13.7% of that amount was provided from milk and 9.6% from cattle.

The first five countries in animal production sector are France, Germany, Italy, Spain and the United Kingdom. The income gained from this sector by these countries is more than USD 10 billion and their total incomes constitute about 65.8% of the total income obtained from animal production in the European Union (SPO, 2008; TKB, 2008). Especially cattle breeding is the most important branch of animal husbandry sector in the Union. Cattle breeding constitute 23% of the animal husbandry within agricultural production value and 60% of the animal production value. The number of cattle contributing to more than EURO

70 billion is approximately 88 million and these cattle are sheltered in about 2.7 million enterprises. The number of enterprises engaged in milk cow breeding is about 1.8 millions, and the number of cows in these enterprises is approximately 24 millions. Sweden takes the first place among the European Union countries, in terms of milk productivity, with 8.072 kg per cow However, the amount of cattle breeding sector is estimated to decrease in the studies conducted for the next five-year period. As can be understood from the study, there will be limited increase in milk production of EU-25 and a significant part of it will be produced by EU-15. In addition, it is estimated that a decrease of 2.7 million will be seen in the number of cows in Europe until the year 2012 (SPO, 2006).

1.1 Research context and objectives of this study

Animal husbandry sector has an important place in Turkish economy. This sector constitutes approximately 10% of the gross national product as of 2005. However, the share of the sector gradually decreases during transition process from agricultural society, where animal husbandry sector constitutes a significant part of the economy, to industrial society. Although the animal husbandry sector continually grows in terms of the output value, its share in GNP has gradually decreased. While the share of the sector in GNP was 18.3% in 1985, it decreased to 14.4% in 1995, to 10.5% in 2000 and to 9.5% in 2005. When we consider the animal population examined by the animal husbandry sector in Turkey, we see a continuous decrease in the share of the sector in GNP except for the last two years. For instance, the decrease in the number of animals was rather high in buffaloes; and there was also a significant decrease in the number of cattle, too. The number of cattle was about 11 millions in 1990 and this number decreased to 10.5 millions in 2005 (TSI, 2006). Southeastern Anatolia Region (GAP) comprises 9 different provinces. The surface area of the Region is 75.308 km^2 and constitutes 9.7% of Turkey's total area. GAP is an integrated regional development project covering the water and land resources of the Upper Mesopotamia Plains, constituting a part of Euphrates and Tigris Rivers and aiming sustainable human development as well as economic, social, cultural and environmental development. In parallel with construction of dams, hydroelectric power plants and irrigation structures, the Project has been handled as a bunch of projects interrelated with each other in the fields of agricultural and industrial development, rural-urban infrastructure, transportation, education, health, etc. Approximately 6.68% of the cattle population of our country and about 14.66% of the sheep live in GAP

The purpose of this study is to determine the international competitiveness level of the animal husbandry sector of the GAP Region, by analyzing with Diamond Model of Porter. Porter established a model called as *Diamond Model* in order to answer the question *why some countries are more competitive than the others* asked in his book *Competitiveness Advantage of Nations*, published in 1990. The model analyzes the variables of global competitiveness within a systematic approach in order to identify the determinants of national competitiveness advantages in a systematic way. The Diamond Model also represents the total competitive power of a sector, representing the value chain of production and service considering all main

and sub variables. Porter focused on specific industries in order to reach a more valid paradigm and stated that competitiveness is affected from the above-mentioned factors; but if these factors are too many, they may constitute a handicap for sustainable growth in some cases. Porter claimed that nations may establish their advanced factors such as qualified labor force, strong technology, knowledge and culture and pointed that this can only be achieved under specific conditions. With the Model designed in the form of a diamond, four main factors affecting the competitiveness advantage of any country, company or organization have been specified. These main variables are; (a) factor conditions, (b) firm strategy, structure, and rivalry, (c) demand conditions and (d) the related and supporting industries that constitute the corners of the diamond.

The Government takes place in the Model as another variable affecting these four factors from externally (Porter, 1990a; 1990b). The Diamond Model specifying the competition advantage appears as a system, and therefore the main variables determine the advantages of competition not individually but as a whole. In other words, the factors taking place on four corners of the model affect each other. Hence, the system gains a dynamic structure. As also shown in the figure, the Government has an effect on these four factors as an external element, which plays an indirect role in establishing comparative advantage. Implementations such as development of various standards and prevention of monopolies affect competition over these four factors. So, there are twelve interaction connections and four external affect connections at the model. The degree of the effects of these interaction connections on each other and on the whole model vary among the regions and the companies. Hence, the Diamond Model is used to identify the competitiveness of the countries and sectors, explaining how one factor is affected from the other variables (Porter, 1990a, 1990b; Neven and Dröge, 2001; Öz and Pamuksuz, 2003; Bulu, Eraslan and Şahin, 2004; Erkan and Erkan, 2004; Bulu, Eraslan and Kaya, 2006; Chobanyan and Leigh, 2006; Bulu, 2006).

2. Methodology

Qualitative research technique has been applied as the primary research method. Semi-structured in-depth interview and semi-structured questionnaire methods were used as the primary data collection technique. In-depth interview method was conducted by asking questions to the enterprises operating in the sector, managers and members of the non-governmental organizations, and the decision makers of the sector in the light of the findings obtained from literature screening. The questions asked from the questionnaire have been designed as structured, semi-structured and unstructured ones. The structured questions have been prepared in the light of the main and sub variables of the Diamond Model. The concerned people of the sector were asked to tell their opinions in the part of unstructured questions. The questions in the questionnaire were asked to the main actors (leaders and members of the related non-governmental organizations, decision makers, entrepreneurs and experts) of the sector. The people, who would be circulated a questionnaire, have been chosen using secondary data and upon the recommendations of the people interviewed. Some questionnaires were conducted by face-to-face meeting and some others via e-mail. In the

secondary data collection method used to achieve the purposes of the study, written and visual sources related with the sector were thoroughly studied and analyzed.

3. Assessment of International Competitiveness Level of Animal Husbandry of GAP Region

International Competitiveness Level of Animal Husbandry of GAP Region was assessed by using Porter's Diamond Model; as indicated Figure 1. The sector's international competitiveness level has been determined as low.

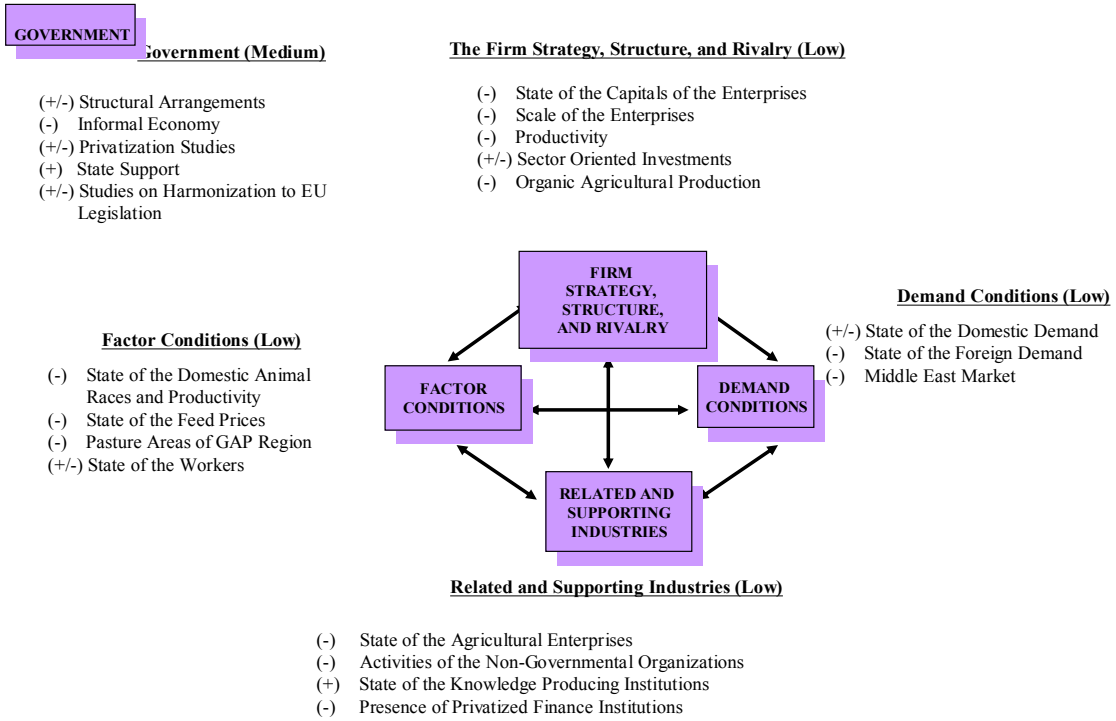

Figure1. Competitiveness Analysis of the Animal Husbandry Sector in GAP Region

3.1.1 Factor Conditions (Low)

National and international competitive power of the factor conditions including several sub variables such as domestic breeds and productivity, feed prices, pastures of GAP Region and qualified workman have observed to be *low*.

State of the Domestic Animal Race and Productivity: One of the most important problems of the animal husbandry sector in Turkey, which is a very favorable country for agriculture and animal husbandry geographically, is the low productivity of the domestic breeds. 97% of the sheep population and 36% of the cattle population of Turkey's animal husbandry sector consist of low-productive domestic breeds. The fact that the breeds are low-productive drives

the sector into a difficult position in terms of production and competition. In order to achieve high productivity in animal production, it is essential to ensure right genetic combination in animal population. It has been observed in some countries that productivity in animal production increases at a significant degree when the right combination is ensured. The policies of the agricultural organizations of Turkey and especially the Ministry of Agriculture and Rural Affairs are developed in this respect. GAP Region displays a more different structure than the general picture in Turkey in terms of the genetic combination of the cattle population. Although the rate of the domestic breeds has been decreased to 35% in Turkey on the average, the above mentioned rate in GAP Region is still about 70%. The rate of imported breeds in the Region is about 7% and the imported hybrid rate is about 23%. These rates in Turkey are 21% and 43% respectively on the average. The fact that the genetic combination of the animal population in GAP Region is not at the desired level causes negative results. The most productive breed among the genetic breeds is the imported one in terms of milk productivity. The fact that the number of the imported breeds is lower than the number of the low-productive domestic breeds decreases the productivity in milk production. On the other hand, while beef and veal productivity as per animal in Turkey is 183 kg., lamb and mutton productivity as per animal is 19 kg., goat meat productivity is 19 kg., and buffalo meat productivity is 179 kg.; these figures are as 278.2 kg as per animal for beef and veal, 14.8 kg., for lamb and mutton, 9.1 kg for goat and 215.4 kg for buffalo meat in the European Union countries. Considering that mostly beef is consumed in our country, our productivity in beef is much lower than the same in the EU (TSI, 2006).

Feed Prices: The fact that the feed prices, which are one of the main inputs of the animal husbandry sector, are too high affects the sector negatively in terms of cost. The decreasing trend of the product prices due to intensifying of the importation as well as the high feed prices prevents the domestic producers to compete and continue their production. On the other hand, the current meat prices are at the same level with the prices 1.5 years ago, and lower than the prices of the last year. The producer could buy 25 kg of feed by selling a kilo of meat in 2003, 20 kg in March 2004 and only 19 kg in March 2005. That is; purchasing power of the producer decreased at a rate of 23% in a 1.5-2 year process (SPO, 2006; TSI, 2006).

Pasture Area of GAP Region: GAP Region covers a pasture area of 2.097.519 ha in total, and the pastures in this Region have the weakest vegetation in Turkey. In addition, the pasture area as per animal is 0.8 ha in this Region. This amount should be 4 ha considering the composition of pastures. This indicates that the pastures in the Region are used 5 times more than their capacities. On the other hand, the owner of the pastures is the Government and their usage right belongs to the village legal entity. The producer wishes to utilize from the pastures at the maximum level and declines pasture improvement methods. As a result, the problems of the Region regarding pastures and meadows are reflected on the animal husbandry sector and cause a regression for the animal husbandry sector in the Region.

Condition of Workers: Turkey has a young and crowded population. The population of the

GAP Provinces is also crowded. In other words, the sector has no labor problem. In addition, the wages of the workers are too low when compared to other European countries. However, both the basic training and education levels and the professional and technical knowledge of the qualified labors are much lower than the international standards; also the number of the educated people in the enterprises is too low.

3.1.2 Demand Conditions (Low)

Demand Conditions include domestic market, foreign market and Middle East market; and national and international competitive power of demand conditions has been observed as *low*.

Domestic Demand: Meat consumption as per capita in Turkey is as much as ¼ of the EU. And while milk consumption as per capita is 90 kg in developed countries, this figure is 30 kg in Turkey (TSI, 2006). The prospects for increasing current domestic demand in parallel with the increasing welfare in the country are positive for the future of the animal husbandry sector but still affect the development of the sector in a negative way. It is estimated that Turkey's population will be 80 millions by 2010; and 182.5 kg of milk and 36.5 kg of meat should be consumed as per capita in order to nourish this population at the standards of the developed countries.

Foreign Demand: The fact that the consumption of animal product is very high in the EU countries. Turkey is located in close proximity to the EU countries mean the presence of a possible foreign demand provided that high-quality products are produced at reasonable prices. However, when we look at the exportation figures of the sector, the share gained from foreign demand is unsatisfactory. Turkey exported at an amount of only USD 370.5 millions in 2005 and approximately 65% of this exportation revenue was obtained from fish and fisheries products (TSI, 2006).

Middle East Market: The Middle East market is very important for animal exportation in the region. However, both the problems about security and the ongoing wars in the Middle East affect the market advantages negatively to a significant degree.

3.1.3 Related and Supporting Industries (low)

Related and Supporting Industries variable consists of sub-variables such as state of the agricultural enterprises, state of the non-governmental organizations, knowledge producing organizations and sectoral finance organizations; and national and international competitive power of this variable is *low*.

State of the Agricultural Enterprises: There are 27 feed-producing enterprises in GAP Region. Business volume of most of these enterprises is well below their capacities. The feed produced in these 27 enterprises can only meet 46% of the total feed requirement of the Region and the remaining deficit is tried to be met from grain hay, which is a poor quality

feed. On the other hand, as usual for the rest of Turkey, the slaughter animals are slaughtered in small and primitive slaughterhouses in GAP Region and meat and meat products are mostly produced under unhygienic and technologically inappropriate conditions. Also, the transportation facilities of the slaughter animals are not at the desired level. The animals are left under stress due to ill treatment prior to slaughtering and the meat quality is negatively affected. Since there are no cooling units in small scale enterprises, the carcasses cannot be matured; and therefore problems occur about conservation of the innards; and the carcasses, innards and the skin are transported in inappropriate vehicles. Carcasses are not subject to any process in terms of grading.

State of Knowledge Producing Organizations: Although GAP Region is geographically larger than so many European countries, there are few universities in the Region. The number of the departments related with the sector and the number of the vocational high schools are rather low. In addition, in comparison to the rest of the world, there is little relation between the Region and the universities.

Presence of Privatized Financial Institutions: The current system of Turkish finance sector, which is the epitome of economy and several industries, is almost based on banking sector. For that reason, today, all sectors use banking credits. However, developed countries use different and alternative financial instruments such as venture capital, angel financing, capital markets etc. Accordingly, financing source of the farmers and enterprises operating in the Region is either the state owned banking or the traditional banking system. Sector-oriented financial instruments have not been developed yet.

3.1.4 Firm Strategy, Structure, and Rivalry (Low)

Firm Strategy, Structure, and Rivalry variable consists of sub-variables such as capital state of enterprises, scales of the enterprises, productivity, sector-oriented investments and organic agricultural production; and the national and international competitive power of this variable has been observed as *low*.

Capital State of the Enterprises: Animal husbandry sector in Turkey cannot benefit from its potential due to deficiency of capital, which is one of the general problems of the country's economy. The fact that the producers are generally individuals or small-scale producers prevents capital formation and financing of the investments in the sector.

Scales of the Enterprises: As usual for the whole country, one of the main problems of the animal husbandry sector in GAP Region is that the enterprises are very small and fragmented. Approximately 80% of more than 3 million rural enterprises in our country have 1-4 animals and 85% of the active cattle breeding enterprises have less than 10 animals. The same situation is also valid for the sheep breeding enterprises. Such a situation is one of the main reasons of low productivity and prevents establishment of organization in production and causes costly production and low marketability; and also makes the production fragile against

economic fluctuations.

Productivity: One of the most important indicators of the low-productivity of the animal husbandry sector is the milk productivity. Turkey is well below the world average in terms of milk productivity. While average annual milk productivity as per dairy cattle is 2.188 kg in the world, this rate is 1.709 kg in Turkey. The USA takes the first place in milk productivity with 7.815 kg and followed by Bulgaria with 3 430 kg and Romania with 2.910 kg. Although Turkey is at the 15th rank in terms of milk production amount, it is at the 72nd rank in the world with 1.709 kilograms in annual milk productivity as per cattle. 5.6% of the milk produced in Turkey is met from GAP Region and this rate is rather low. The problems faced regarding this issue are as follows: (a) there is little number of imported breeds, and such small amount of imported breeds are not very well bred and hence the expected productivity cannot be achieved, (b) The enterprises are small scale ones and the factories of the Government, which were sold to private sector within the framework of privatization have not been operated but closed and (c) the problems faced during provision of fodder and compound feed. In addition to the deficiencies in dairy animals, milk productivity and milk quality in GAP Region, there are also problems in compliance with hygiene requirements during the process of obtaining product from milk. A significant amount of the milk produced in the Region is delivered for usage without any technologic process. In addition, the dairy enterprises are both primitive and operated with low capacity.

Sector Oriented Investments: It is envisaged that the attraction to this sector will increase and potential growth expected through the establishment of large scale production facilities. However, there is a continuous decrease in animal husbandry sector. Number of cattle has decreased gradually from 786 thousands to 649 thousands in last 10-15 years (TSI, 2006).

Organic Agricultural Production: Organic agriculture is a concept and practice of agricultural production that focuses on production without use of synthetic pesticides, which provides value added to productions. Value added agriculture is a process of increasing the economic value and consumer appeal of an agricultural commodity. However, such studies and production activities are at a very low level in the Region.

3.1.5 Government (Medium)

Government variable consists of several sub variables such as structural arrangements, informal economy, privatization studies, agricultural government support and harmonization with the EU legislation; national and international competitive power of this variable has been observed to be at *medium* level.

Structural Arrangements: The Government has been the most determining factor in agriculture and animal husbandry during the process starting from foundation of the Turkish Republic until 1980's. The sector was opened for competition with Decisions of 24th January in 1980 in parallel with the liberalization policies. It is widely believed that the sector has

been negatively affected from these liberalization policies in absence of structural arrangements in animal husbandry sector. Even though liberalization policies are implemented, the Government has not stopped its efficiency on the sector. Determination of the minimum prices and continuation of the support policies caused the Government to continue its efficiency in the sector. These arrangements prevented establishment of free market conditions completely and made the commodity markets unable to operate. On the other hand, the support policies do not make the sector strong but rather weaken it. With the populist policies, quality-price relation was not specified and the resources were not able to contribute establishment of optimum enterprise scale or technological renovation in the sector. Not being able use the resources in an effective way slowed down the increase of welfare in rural areas, turned the sector into a fragmented structure and decreased productivity.

Informal Economy: There is a significant amount of informal economy in the sector. Inefficient inspections cause increase in the informal economy and production of low-quality and unhealthy products. In addition, no efficient measure was taken in order to prevent illicit entrance of animals at the borders.

Privatization Experiences: Privatization of Milk Industry Institution and Meat and Fish Institution without care and not being able substitute these institutions damaged the sector (Günaydın, 2003).

Government Support: The Council of Ministers adopted the Decision on Supporting Animal Husbandry in 2005. With this decision, it was decided to support the animal husbandry sector at a wide range in such areas as milk premium, milk units, calf support, production of fodder plants and seeds, buying pregnant heifers and artificial insemination. However, while the support given as per cattle for the meat sector is EURO 53.3, abovementioned support is EURO 480.5 in the European Union. When these supports are reflected to the producer prices, the prices, which appear to be high in our country, are in fact well lower than the prices in the EU.

Harmonization with the EU Legislation: Turkey's accession process to the EU affects the animal husbandry sector in terms of Turkey's harmonization with the EU legislation. It is obligatory to comply with the requirements such as establishment of paying agency, integrated administration and control system and farmer accountancy data network; integration to the common market products, implementation of rural development activities; and protection of animal health, food quality and food safety as regards the animal husbandry sector in order for the Common Agricultural Policy to function in new member countries. In 2004 progress report of the European Union, it was stated that Turkey made some developments within the framework of the specified norms. Turkey adopted a communiqué on notification of the animal diseases in respect of animal health and started to establish a system for identification and registration of bovine animals. In this framework, 9.5 million bovine animals were registered and 1.5 million enterprises were taken under registration (SPO, 2006). However, in the progress report of the European Union issued in 2005, no

development has been achieved in several issues and limited development has been achieved in some other issues.

4. Conclusion and Recommendations

The animal husbandry sector in GAP Region plays an important role in economic development and social structuring of the Region. The sector interests not only the people of GAP region but also the people of the other regions due to unplanned migration from rural areas to urban areas caused by the employment losses experienced as a result of the negative developments in the sector. In this study, the competitiveness of the animal husbandry sector of GAP Region has been analyzed with Porter's Diamond Model. According to the results of the analysis, *Factor Conditions, Demand Conditions, Related and Supporting Industries, Firm Strategy, Structure, and Rivalry* has been determined as *low level*; and the *Government variable* has been identified as *medium level*; and as a result national and international competitive power of the animal husbandry sector in GAP Region has been observed as *low level*.

When we look at the factor conditions we see that abundance of low-productive animals, lack of capital, high feed prices and the state of the pastures affect the competitive power of the sector in a negative way; although Turkey's geographical conditions are favorable for agriculture and animal husbandry. Considering the whole country, animals need 50 million tons of forage. 35 million tons of these requirements are met from different sources and there is a deficit of 15 million tons. 10-15 million tons of the requirements met is from low-quality sources and so when we include this portion to our feed deficit, we can say that our feed deficit is 25-30 million tons. Considering that high-quality feed sources are necessary in order to increase productivity per animal, such sources should be urgently procured. For this purpose, first it is essential to increase the share of the cultivation area of the fodder plants among total arable lands from 6% to the 25-30%, which is the share in developed countries and then to complete the identification and determination studies of the current pastures and improve them and then to put these pastures to the service of the animal husbandry sector. Although feed industry in Turkey is a developing sector, it is not sufficient to meet the country's requirements. Compound feed production has an increasing trend throughout the world. Compound feed industry in Turkey produces below its established capacity. Most important problems of the sector are the problems in raw material procurement, insufficient usage of modern technologies and high production costs. The fact that our costs are higher than the world prices due to dependency on foreign countries especially for raw material is the most important handicap for development of the sector. Today, demand for animal products increase, thus, more feed should be produced for more animal food production.

With regard to demand conditions, huge population of the country means a large demand, however consumption amounts as per capita is well below the amounts in the developed countries. Such insufficiency in domestic demand prevents development of the sector but future prospects of revival in demand draws new investments to the sector. On the other hand,

Turkey has important advantages due to its close geographical proximity to the EU countries. High meat and milk consumption amounts as per capita in the European Union countries are important for the future of our animal husbandry sector and indicate a potential foreign demand in case of production of high-quality products at reasonable prices. In order to prompt milk demand, *School Milk Project* should be urgently put into implementation, and milk and milk products should be delivered to asylums, orphanages, societies for protection of children besides the schools. The cost of these should be financed from the source of registration deduction gained from milk purchasing and sales from Social Welfare Fund, and from the Union of Chambers and Commodity Exchanges of Turkey (TOBB).

In periods when production cannot be converted into consumption, the excessive milk should not be left aside by the industrialists but processed in the form of milk powder and butter. When we look at the related and supporting industries, we see that so many non-governmental organizations and associations are active in the sector. It is stated that the number of producer organizations in GAP Region is insufficient and there are problems in organization in the sector. It is also visible that feed producers, who are one of the main suppliers of the animal husbandry sector in the Region, are unsatisfactory in terms of both quality and quantity. One of the weakest circles of the sector is the strategy and competition structure of the companies. Large number of small scale enterprises in the sector, low-quality and low-technology production and unproductive and unconscious production are obstacles for competitiveness of the sector. The Government has direct influences on cattle breeding in animal husbandry sector and especially in GAP Region. The support policies implemented until today have not contributed to the development of the sector. Formation of new support packages and delivery of the supports to a wide range with the recent arrangements have affected the future of the sector. The arrangements made and to be made during harmonization process to the EU will have positive effects on improvement and a more productive restructuring of the sector.

Due to the abovementioned reasons, regulations should be made in order to slaughter the animals in our country in big and modern enterprises and to utilize them in an efficient way. In addition, not being able to utilize from blood, skins and other by-products of the animals especially in the small enterprises due to absence of processing units in close proximity to those enterprises, causes both economic and environmental losses. It is necessary to collect these products and deliver them to rendering units and processing centers. Although the international competitive power of the Government variable seems as medium level in animal husbandry sector, government sector should be permanently supported by various support mechanisms and protected. For instance, VAT amount, which is currently applied at a rate of 8% and 18% on milk and milk products, should be decreased to 1%.

The EU supports its producers in the best way. The fact that we have no support for sheep and goat meat, which are among the most competitive products of our country in accession to the EU, avoids making use of this advantage. For this reason, extra supports should be given for production of these products as soon as possible and we should make use of this advantage.

The marketing channel of live animals in Turkey and especially in GAP Region is rather long and complex. It was found out that the actual producers could not benefit from the meat incentive premium given in 2004. Most of the producers sell their animals to intermediaries such as dealers instead of directly delivering to slaughter. The same situation was seen in the year when the incentive was given and such intermediaries benefited from the above mentioned premium by delivering the animals bought from the producers to slaughter. Necessary measures should be taken in order not to face with such problems again and to give the supports to the real producers.

Turkey has a problem of illicit animal entrance due to insufficient controls at the borders, using declaration system for registration of ovine animals although earring system is used for cattle, insufficient controls at the slaughterhouses, high production costs for the producers and high animal prices when compared to our border neighbors. According to the data from the Chambers of Agriculture, illicit live animal entrance to our borders starts at suitable environments when the weather is getting warmer. In order to prevent illegal trafficking, support policies aimed at the border areas and decreasing the producer costs should be implemented. In addition, coordination should be enhanced among the institutions; and administrative measures should be taken in order to prevent illegal trafficking. Animal population as per enterprise is too low in our country compared to the EU countries. While the number of animals as per enterprise is 4 in Turkey, this figure is 44 in the EU. Due to this and some other reasons, our productivity as per animal is quite lower than in the EU. On the other hand, our input costs are also much higher than the costs of both the EU and the world in general. Taking this current situation into consideration, it is clearly understood that the competitive power of our sector is rather unsatisfactory.

In conclusion, Turkey has to increase the competitive power of our animal husbandry sector taking into consideration the accession process to the EU and the WTO negotiations held in 2005. Otherwise, it is inevitable that our country will be a market for the EU and other countries of the world exporting agricultural products. Based on the result of a study on this issue, it has been understood that if Turkey accedes to the EU in this current situation, it will be necessary to import animal products at an amount of USD 5 billion. As it is known, in case of membership to the EU, free circulation will be valid for our country and according to the decisions taken with the recent WTO agreements; customs duty will be significantly decreased in coming years. In such a case, we have to increase our competitive power in animal husbandry sector by improving the structures of the enterprises by rehabilitation studies on one hand and increase productivity by improving the production technology, decrease the input costs, train our farmers and improve marketing skills on the other hand.

5. Limitations and Future Scope

International Competitiveness Level of Animal Husbandry of GAP Region was assessed by using Porter's Diamond Model. However, a comprehensive research can be conducted thorough Turkey by considering other regions. We acknowledge the limitations posed by the

methods utilized in this study and more comprehensive sample could have given a deeper understanding to the problem. Additionally, this study focused on the employing Potter's (1990b) model in understanding the international competitiveness of animal husbandry sector in the GAP region, there is scope for using other models in examining the same problem. Such an approach would value to both theory and practice and as in as much a potential contributor to knowledge. Apart from described factors, macro-economic environment could be added in details as mediating variable as for the assessing the model.

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