Research Case of Risk Management: Dairy Product Companies In Turkey

Canan GÜMÜŞ1*, Gürkan SARIKAYA2, Md Mehedi HASAN3

1 MBA, Tianjin University, China
2 Bsc, Anadolu University, Turkey
3 Plant Manager, Tianjin Airtech Advanced Materials Ltd., China

*Corresponding Author:
Canan GÜMÜŞ
Email: canan.tu@hotmail.com

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Abstract: With the impact of globalization, today's businesses are affected not only by the country in which they operate, but also by events in other countries around the world. In particular, the corruption or fraudulent transactions of international and large capital firms adversely affect the markets of the whole world. Regulatory agencies have set rules and standards to prevent corruption and fraudulent transactions. One of these rules is the accountability of managers. In order to perform their duties, managers are required to identify, analyze and implement the risks that they may face in relation to operational activities and to combat these risks. These practices are addressed under the name of 'risk management'. Our objective in this study is to control the risk management activities of milk production companies in Turkey, which have entered ISO 1000 between 2014 and 2016. The data were obtained by using a face-to-face questionnaire. At the same time, Brazil ranked fourth in the list of countries producing the highest milk in the year 2016, as well as the most risk factors for dairy production in Turkey. As a result, the absence of a risk management and Risk porting System in milk enterprises by almost 50% indicates that risk management practices are not sufficient for milk processing.

Keywords: Risk Management, Turkey, Risk Factors, Dairy Product Companies, Risk Management Application

INTRODUCTION

Risk management is the most important process for businesses to survive. Risk management and enterprises can anticipate risks that may arise and carry out various activities to reduce or eliminate these risks. In order to do this, businesses must first have information about what risks are and how they can be managed.

The Risk is always present. Most of the activities carried out by people are at risk (Fikirkoca, 2003). For people who have lived for centuries, the risk is inevitable that situations that
people cannot control will occur. Against these events and risks that may occur beyond its control, man has struggled with all its existence. It has developed ways to identify and measure risk through trial and error and through evaluation of human knowledge and thought (Mun, 2014). Many definitions of risk have been made. W.D. Rowe defined the risk as the probability of an event or activity being unfavorable. N. Rescher defined the risk as a probability of negative outcome and stated that the probability of negativity and determining components of the risk should be appropriately measured in order to measure the risk (Merna, 2008). Many people think of risk in terms of three components: Something Bad is happening, the likelihood of it happening, and if it happens, the consequences. These three components of risk can be used as the basis of risk management structure (Merna, 2008). The risk is defined as the probability that an event will occur and the success of the organization to achieve its objectives will be negatively affected. According to this, the risk is considered to be threatening situations that are likely to occur in the future, not present at this time (KIZILBOĞA, 2013).

To call an event a risk, it must have some characteristics. These are;

- It is not possible to avoid risks
- Risks can occur in any environment.
- It is not usually known or predicted (there is uncertainty).
- Risks change over time.
- Risk management is possible.
- Risks have a negative impact on the outcome.

Risk management refers the process of identifying, mitigating and exposing opportunities to achieve success that will prevent the organization from achieving its objectives (KIZILBOĞA, 2013). The Risk management process covers all risks related to the business activities that existed before and will exist in the future. Risk management in enterprises; to determine the risks, to analyze the risks, to determine the strategies for how to deal with the risks that will occur, to evaluate these strategies and finally to evaluate the results (Heldman, 2005).

Businesses are also providing many benefits with risk management. These benefits can be summarized as follows (DELOITTE, 2015)

- It provides the necessary arrangements for businesses to continue their activities in profitability.
• Protects the business's winning power with the protection of goods and persons in the organization.
• Plans the resources and activities necessary to minimize unexpected losses in the organization at the lowest cost.
• Covers the management and control processes of the organization.
• Analyze the risks to identify potential risks and to determine the ones that are most likely to occur.
• Defines plans to determine the risks that have a significant impact if they occur and to help mitigate or prevent the impact of the risks.

PURPOSE OF THE STUDY
With the impact of globalization, today's businesses are affected not only in the country in which they operate, but also in the activities of businesses in other countries around the world. For this reason, enterprises can survive and continue their activities for many years to compete with other businesses require being at the level. In order for enterprises to operate in global markets, it is important to determine the risks that the enterprise may face, to determine the strategies that can deal with the risks that may arise, and to evaluate the results of these strategies. It is necessary for enterprises to take the necessary measures to prevent or terminate their activities and to continue their activities for many years.

In this study, the selection of dairy farms is due to the rapid increase of the world population, the importance of milk for human health and the high nutritional value of milk, the importance of milk for human health in all stages of human life as it is a very important mineral and nutrient source for human body during infancy, childhood, adolescence and It is aimed to consume more milk in all countries of the world, especially in Turkey. In particular, the EU recently granted export permission for Turkish milk products has become an important opportunity for milk products producers to meet the increasing need.

When looking at the rankings of countries producing dairy products in the world from 2016 according to data in the first place, second place, third place and fourth place in the U.S. in India it is found in Brazil and in Pakistan. Turkey is ranked tenth in this ranking. In the fourth place, ‘Sistema De control Interno - Estudo Multicasos em impresas de laticios Da Regiao Dos Paranaiba - Minas Gerais’ study conducted by Antonio Eustai" Baptista in 2012 on Brazilian dairy production enterprises, the adequacy of the Internal Control System of milk production was investigated. In this study, the important problems for business executives were investigated (BAPTISTA, 2012).
In this study, we aim to decide whether the dairy production companies operating in Turkey have risk management systems or risk management applications, the targets of the enterprises with risk management systems and the risks that are important for the enterprises. In this context, the important problems for the managers of milk production companies in Turkey were compared with the research conducted in Brazil. In this way, it was tried to determine whether there is a difference between Brazil and Turkey which has been in the top four for years in the list of countries in the highest milk production.

METHODOLOGY

Method of Research and Determination of Sampling
In this study, using descriptive statistical methods, the current status of the companies’ operating years, number of employees, risk management application and risk reporting systems are determined by frequency distributions. The sample of the study is the milk and dairy products enterprises, which entered into the ISO 1000 between 2014 and 2016 and which are thought to be involved in risk practices within the institutionalized structure. Due to the fact that there are those who do not agree to meet with us, 15 companies, including milk companies, which we have seen frequently in the market, have been reached even though they have not entered the ISO 1000. The managers of these companies, accounting and finance managers have been given a survey application. The General Directorate of meat and milk institution has stated that milk processing activities have not yet started. A total of 12 companies contributed to our survey. Three enterprises responded only to general information because of the fact that private information could not be provided to the survey application and did not want to answer the questions related to risk management.

The data were collected by applying questionnaires to senior managers such as managers, accountants, internal auditors, financial managers, human resources managers, etc. The data obtained is the primary type of data obtained directly from the source.

The ‘Risk Intelligence: Corporate Risk Management benchmarking survey’ published by Deloitte company in January 2015 and ‘Corporate Risk Management Awareness in the Turkish Energy Sector’ carried out by Sule Gülneş and Suat Teker in 2010 were utilized.

Research Results

Result 1: According to the results of our survey, the years in which companies operate are given in Table 1.
Table 1: The Years of the Dairy Enterprises Operate

<table>
<thead>
<tr>
<th>Years</th>
<th>Company Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-5 Years</td>
<td>2</td>
<td>13%</td>
</tr>
<tr>
<td>11-15 Years</td>
<td>1</td>
<td>7%</td>
</tr>
<tr>
<td>16-20 Years</td>
<td>1</td>
<td>7%</td>
</tr>
<tr>
<td>More than 20 Years</td>
<td>11</td>
<td>73%</td>
</tr>
<tr>
<td>Total</td>
<td>15</td>
<td>100%</td>
</tr>
</tbody>
</table>

According to the results of our survey, 11 enterprises from milk production companies have been operating for more than 20 years, one enterprise has been operating for 16-20 years, one enterprise has been operating for 11-15 years and two enterprises have been operating for 0-5 years.

Result 2: The number of employees of the company is given in Table 2.

Table 2: Number of Dairy Enterprises

<table>
<thead>
<tr>
<th>Number of Employees</th>
<th>Number of Companies</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-9 person</td>
<td>1</td>
<td>7%</td>
</tr>
<tr>
<td>10-49 person</td>
<td>2</td>
<td>13%</td>
</tr>
<tr>
<td>50-249 person</td>
<td>3</td>
<td>20%</td>
</tr>
<tr>
<td>250 in and over</td>
<td>9</td>
<td>60%</td>
</tr>
<tr>
<td>Total</td>
<td>15</td>
<td>100%</td>
</tr>
</tbody>
</table>

When the number of employees of the company is examined, the number of employees of the company with 250 and above is nine, the numbers of employees with 50-249 are three, the numbers of employees with 10-49 are two, and the number of employees with 1-9 is one.
**Result 3:** The positions of the authorities filling the survey are given in **Table 3.**

Table 3: The Positions of the Officials Filling out the Survey in Dairy Enterprises

<table>
<thead>
<tr>
<th>Position</th>
<th>Number of Companies</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assistant General Manager</td>
<td>1</td>
<td>7%</td>
</tr>
<tr>
<td>Internal Audit Manager</td>
<td>2</td>
<td>3%</td>
</tr>
<tr>
<td>Accounting Manager</td>
<td>8</td>
<td>54%</td>
</tr>
<tr>
<td>Factory Manager</td>
<td>2</td>
<td>13%</td>
</tr>
<tr>
<td>Human Resources Manager</td>
<td>2</td>
<td>13%</td>
</tr>
<tr>
<td>Total</td>
<td>15</td>
<td>100%</td>
</tr>
</tbody>
</table>

9 authorized accounting directors of the company that completed the survey. 2 directors are internal audit manager, factory manager and human resources manager of the company. Only a company official is the assistant general manager.

**Result 4:** The questionnaire was answered by 13 companies to question whether the risk manager/coordinator were responsible for the risk. 9 companies (69%) No to this question; 4 companies (31%) answered yes.

Table 4: Finding Risk-Responsible Executives in Dairy Enterprises

<table>
<thead>
<tr>
<th>Risk Responsible The Administrator There is it?</th>
<th>Number of Companies</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>4</td>
<td>31%</td>
</tr>
<tr>
<td>No</td>
<td>9</td>
<td>69%</td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
<td>100%</td>
</tr>
</tbody>
</table>

**Result 5:** In the question of the existence of risk management application in the enterprise, a total of seven companies stated that there are applications and six companies did not exist.
Table 5: Risk Management Application in Dairy Enterprises

<table>
<thead>
<tr>
<th>Risk Management Application Is There?</th>
<th>Number of Companies</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>7</td>
<td>54%</td>
</tr>
<tr>
<td>No</td>
<td>6</td>
<td>46%</td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
<td>100%</td>
</tr>
</tbody>
</table>

**Result 6:** Risk management application in enterprises is based on internal audit unit, risk management unit, strategic management unit and quality unit.

**Result 7:** Table 6 shows the reasons for dairy enterprises to switch to risk management practice. (Each company has more than one answer).

Table 6: Reasons for the Application of Risk Management in Dairy Enterprises

<table>
<thead>
<tr>
<th>Causes of Risk Management Application</th>
<th>Number of Companies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legal Requirements</td>
<td>3</td>
</tr>
<tr>
<td>More efficient internal auditing and control needs</td>
<td>3</td>
</tr>
<tr>
<td>Sustainability</td>
<td>3</td>
</tr>
<tr>
<td>Avoiding crises with an appropriate crisis management with Increased crisis frequency</td>
<td>3</td>
</tr>
<tr>
<td>Protection Against Financial Risks and financial Changes, The need to benefit</td>
<td>3</td>
</tr>
<tr>
<td>With the lack of Performance, the efficiency and continuity of operations Providing</td>
<td>2</td>
</tr>
<tr>
<td>Identifying potential incidents that may affect the Organization's strategy, The need to manage and achieve the objectives of the institution.</td>
<td>2</td>
</tr>
<tr>
<td>Competition pressures</td>
<td>1</td>
</tr>
</tbody>
</table>
Result 8: As shown in Table 7, seven (54%) of the 13 companies answered yes, and six companies answered No (46%).

Table 7: The Presence of Risk Reporting System in Enterprises

<table>
<thead>
<tr>
<th>Risk Reporting System Is There?</th>
<th>Number of Companies</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>7</td>
<td>54%</td>
</tr>
<tr>
<td>No</td>
<td>6</td>
<td>46%</td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
<td>100%</td>
</tr>
</tbody>
</table>

Result 9: The answers to the question of which management units are reporting with the risk reporting system are shown in Table 8 below. (Companies were able to respond more than one.)

Table 8: Locations Reporting with the Risk Reporting System

<table>
<thead>
<tr>
<th>Number of Companies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top Management</td>
</tr>
<tr>
<td>Board of Directors</td>
</tr>
<tr>
<td>Legal and Regulatory Bodies</td>
</tr>
<tr>
<td>Top Management and Board</td>
</tr>
</tbody>
</table>

Result 10: Six companies answered the question about the methods used to determine and measure the risks in dairy enterprises. The answers given are shown in Table 9; the most common methods are basic performance indicators and internal evaluation methods.
Table 9: Determination and Measurement of Risks Methods Used

<table>
<thead>
<tr>
<th>Methods</th>
<th>Uses Company</th>
<th>Not using Company</th>
<th>Uses Rate</th>
<th>Unused rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Key Performance Indicators</td>
<td>3</td>
<td>3</td>
<td>50%</td>
<td>50%</td>
</tr>
<tr>
<td>Basic Risk Indicators</td>
<td>1</td>
<td>5</td>
<td>16%</td>
<td>84%</td>
</tr>
<tr>
<td>Internal Assessment</td>
<td>3</td>
<td>3</td>
<td>50%</td>
<td>50%</td>
</tr>
<tr>
<td>Risk Maps (Determination, Identification and Prioritization)</td>
<td>1</td>
<td>5</td>
<td>16%</td>
<td>84%</td>
</tr>
<tr>
<td>Numerical Methods (VaR, Monte Carlo)</td>
<td>2</td>
<td>4</td>
<td>33%</td>
<td>67%</td>
</tr>
</tbody>
</table>

**Result 11:** As shown in Table 10, four of the enterprises have received an external consultancy service on risk management, while seven have stated that they do not receive an external consultancy service.

Table 10: External Mentoring in Risk Management Status

<table>
<thead>
<tr>
<th>An External Advisory On Risk Management Service Receive Status</th>
<th>Company Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>4</td>
<td>36%</td>
</tr>
<tr>
<td>No</td>
<td>7</td>
<td>64%</td>
</tr>
<tr>
<td>Total</td>
<td>11</td>
<td>100%</td>
</tr>
</tbody>
</table>
**Result 12: Figure 1** provides information about the objectives of milk production enterprises with risk management and what targets they achieve, and what targets they aim to achieve in the short and long term.

**Figure 1: Targets of Dairy Production Enterprises with Risk Management**

The following results appear when Figure 1 is examined:

- The internal management reporting, which provides a brief and concise statement of how an organization's strategy, corporate governance, performance and expectations will achieve value in the short, medium and long term in the context of the external environment of the organization, has partially achieved 43% (three enterprises) of the enterprises to focus on the most important risks, and aims to reach 14% (one 29% of enterprises (two enterprises) did not answer this question.
In order to identify and manage the risks across the organization, 43% of enterprises (three enterprises) have partially achieved, and 57% (four enterprises) are planning to reach the target in more than 12 months.

14% of enterprises (one business) have achieved their goal of minimizing operational surprises and losses. 43% (three enterprises) are partially reached, 43% (three enterprises) are planning to reach in more than 12 months.

29% of enterprises (two enterprises) have fully reached the target of reducing the sensitivity to adverse events, 29% (two enterprises) have partially reached, and 43% (three enterprises) are planning to reach more than 12 months.

29% of enterprises (two enterprises) have fully reached their goal of creating a culture aware of risk and developing decision-making to respond to risk, and 29% (two enterprises) have partially reached their goal. 13% of enterprises (one enterprise) are planning to reach within 12 months, 29% (two enterprises) are planning to reach more than 12 months.

57% of enterprises (four enterprises) have partially reached the risk appetite and strategy to ensure that enterprises are willing to carry risks, and 43% (three enterprises) are planning to reach the target in more than 12 months.

43% of enterprises (three enterprises) have achieved an integrated response to multiple risks, and 14% (one enterprise) are planning to reach in 12 months and 43% (three enterprises) in more than 12 months.

14% of enterprises (one enterprise) fully reached the goal of associating growth, risk and return with each other, and 43% (three enterprises) partially reached. The ratio of enterprises that plan to reach within 12 months is 14% (one enterprise) and the ratio of those who plan to reach more than 12 months is 29% (two enterprises).

14% of enterprises (one enterprise) have reached the target of capturing opportunities and 43% (three enterprises) have been partially. 14% of enterprises (one enterprise) plans to reach in 12 months and 29% (two enterprises) in more than 12 months.

Result 13: Milk enterprises have tried to identify problems that concern managers. The results of how important these problems are in Figure 2.

Figure 2: Milk Production Enterprises are The Most Worrying Problems for Managers
Figure 2 is examined; the following results have been obtained in relation to the problems that concern milk business managers. These:

- Business managers for milk enterprises regard the raw material price (milk) as very important in terms of 69% (nine companies).
- Total quality control, sales price, production process is considered to be very important at 54% (seven companies).
- The impact of sustainable supply chain, industry-related government policies and climate change on livestock and feed prices is seen as very important at 46% (six companies).
- The economic situation in export countries is seen as very important in the rate of 33% (four companies).
- Institutionalization and internal audits are considered to be very important at a rate of 31% (four companies).

Apart from the very important issues mentioned above, the problems seen as important are listed. These:
- Raw material price by 31% (four companies),
- Total Quality Control and internal audits, 46% (six companies),
- Institutionalization at 38% (five companies),
- Sales price, production process, sector-related government policies 31% (four companies),
- Impact of climate change on livestock and feed prices and sustainable supply chain ratio of 23% (three companies),
- The economic situation in the countries where exports are made is seen as important in the rate of 8% (one company).

Elements that are considered to be neither less or more important by the company managers;
- Sustainable supply chain ratio of 31% (four companies),
- The economic situation in export countries is 25% (three companies),
- Sector-related government policies, institutionalization, the impact of climate change on animal and feed prices at 23% (three companies),
- Sales price and internal audits 15% (two companies);
- Production process is 8% (one company).
- The variables that are considered to be less important by the company managers are;
- 17% (two companies) of the economic situation in export countries,
- Internal audits, production process, institutionalization and the impact of climate change on animal and feed prices are 8% (a company).

India, the United States and Pakistan ranked the top three in the world in 2016. Brazil ranks fourth. Turkey ranks tenth in this ranking. In 2012, Antonio Eustatia ‘Baptist’ survey conducted by "Sistema De control Interno - Estudo Multicosos em Impresas De Laticinos Da Regiao do Paranabria - Minas Gerais" survey conducted by Antonio Eustatia in Brazil with 9 out of 51 dairy producers. The study examined the variables that Brazil milk production enterprises found very important. In this study, a comparison was made between Brazil in the fourth place in World milk production and Turkey in the tenth place. Table 11 shows the comparison of the important variables between the two countries.
Table 11: Important Changes in Milk Production Enterprises Managers

<table>
<thead>
<tr>
<th>Variables</th>
<th>Turkey (Very Important)</th>
<th>Brazil (Very Important)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Quality Control</td>
<td>54%</td>
<td>89%</td>
</tr>
<tr>
<td>Sales Price</td>
<td>54%</td>
<td>44%</td>
</tr>
<tr>
<td>Production Process</td>
<td>54%</td>
<td>56%</td>
</tr>
<tr>
<td>Internal Controls</td>
<td>31%</td>
<td>11%</td>
</tr>
<tr>
<td>Raw Material Price (Milk)</td>
<td>69%</td>
<td>11%</td>
</tr>
</tbody>
</table>

It is important to represent that the price of raw materials for companies in Turkey is very important when looking at the variables that are important for business managers operating in the two countries, while the price of raw materials for companies in Brazil is not very important. From here, it turns out that the milk prices of companies in Turkey are not at the appropriate levels. Compared to other countries, milk prices in Turkey are quite high. Compared to other variables, the total quality control for milk enterprises operating in Brazil is considered to be quite important at 89%, while this ratio is 54% for Turkish dairy enterprises. However, the change in internal audit is considered to be significant for companies in Turkey by 31%, while this ratio is only 11% for companies operating in Brazil. The difference between the sales price and the production process is not significant in the two countries.

CONCLUSION AND RECOMMENDATIONS

The fact that there is almost 50% risk management and Risk Reporting System is not sufficient for dairy enterprises. In this sector, where exports to European Union countries are increasing and competition is increasing rapidly, it is clear that risk management practice is a subject to be focused more on by businesses in order to gain competitive advantage.

According to the results of the research, 73% of milk enterprises have been operating for more than 20 years. 60 % has 250 and over employees. 31% of companies have risk
managers. The ratio of companies with risk management application and Risk Reporting System is 54%. The most common methods used by enterprises to identify and measure risks are basic performance indicators and internal evaluation methods.

When we look at the targets of enterprises with risk management, 29% of them have achieved their goal of reducing sensitivity to adverse events, creating a culture that is aware of risk, developing decision-making to respond to risk; 14% have achieved their goal of minimizing operational surprises and losses, associating growth, risk and return with each other and capturing opportunities.

Milk production milk production enterprises in Brazil and enterprises in terms of variables that are important when looking at the comparison with, the order of variables that are important for Turkey, the price of raw materials (milk), the sales price, manufacturing process, Total Quality Control and internal audit. Brazil milk production enterprises are important variables, respectively, total quality control, production process, sales price, internal audits and raw material price.

As a result of done survey with the company managers, the problems and solutions that are important for milk business managers are listed below:

Raw material prices for milk enterprises are of great importance. Agricultural lands are inefficient, urbanization is more, and feed prices are high, such as the reasons for the high price of raw materials is seen as a major factor. For this reason, revising the feed policy, activating peasantry and entrepreneurship, and giving incentives on animal nutrition can result in positive results.

High energy prices in our Turkey are seen as a major factor in the high costs of dairy enterprises. Making energy cheap can contribute to a significant reduction in costs by meeting at least some of the energy needs of companies by itself. For this purpose, it may be suggested to provide state incentives for the establishment and dissemination of biogas plants. Thus, the fertilizer, which is a waste substance, has been prevented from damaging the environment and also provides benefits in obtaining energy.

In the first five years of repayment of loans used by enterprises in financing is a major obstacle to the development of newly established enterprises. Since livestock is a long-term investment, providing the payment of loan payments after at least five years can make a significant contribution to the development of dairy enterprises.
Although there are more support activities for SMEs, the inability of the above-mentioned companies to benefit from these supports poses a major obstacle for large companies to move towards new investments. In order to compete with Europe, large companies need more government support.

In all milk production and processing companies, the issue of product return and disposal is of great importance. Because this problem is important in terms of human health, it can be a great contribution for dairy enterprises to be dealt with as another subject of study.

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