

Risks in Agricultural Sector

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Abstract—The Republic of Turkey is a country increasingly towards industrialization. While the increase in employment rates is gradually shifting to the industrial sector, this does not mean a decrease in agriculture. The increase in employment should be not only in industrial life but also in the agricultural sector. As agricultural products are consumed directly, it is extremely important for supplying raw materials to the industrial sector. Agriculture ranks second among the most dangerous jobs in the world after the mining sector. Agriculture meets the basic needs of people, but also brings risks. These risks can be seen at every stage of production. However, it is mostly seen in works carried out before harvesting the crop from the field. On the other hand, the widespread use of electricity in internal agricultural mechanization brings with it considerable risks. Risk can sometimes be caused by production, sometimes depending on climate and sometimes economic reasons. Risks can vary according to time and place. In this study, the risks that threaten the agricultural sector in our country and the factors that make up these risks are discussed. As a result of the research, it is thought that there may be some precautions to reduce risks.

Keywords—agriculture; risks; occupational safety; accidents

I. INTRODUCTION

This Risk can be defined as danger of harm or risk. Risk exists at all stages of production. Risk in agriculture is one of the most important aspects. Changes and uncertainties in weather conditions, yields, prices, government policies and global markets are risk factors for agriculture. The resulting uncertainties can lead to large fluctuations in agricultural production and farm incomes. Risk management seeks alternatives that reduce a number of financial impacts that may arise from these uncertainties. This includes choosing between alternatives. The five general types of risk are: production risk, price or market risk, financial risk, corporate risk and human or personal risk.

The production risk arises from the uncertain natural growth processes of plants and stockbreeding. It affects the quantity and quality of goods produced, such as weather, disease, pests and other factors.

Price or market risk refers to uncertainty about the prices that manufacturers will receive for goods or the

prices they must pay for inputs. The nature of price risk varies considerably according to the type of trade.

Financial risk arises when it creates a liability to repay the debt and debt received for the farm business. While increasing interest rates are important for lenders, they constitute financial risk elements when viewed from the field's point of view.

Corporate risk consists of uncertainties surrounding Government actions. Government decisions; rules such as tax laws, the use of chemicals, the disposal of animal waste, the level of price or income support payments, are examples that have a significant impact on farm operations.

Human risk or personal risk includes factors such as human health problems or personal relationships that may affect farm work. Accidents, diseases, death and divorce are examples of personal crises that can threaten a farm business, such as unexpected events.

Until today in the Turkey Farmers Registry System was applied in 2002 has fallen from 2,588,666 in 2019 to 2,000,000 people. Even if some are not in production, they can stay in the system and benefit from a number of supports or incentives. Depending on seasonal jobs, some people in the system live in cities and rural areas. In our country, the employees working in the agricultural sector consist of those working on their behalf. Family members are helpful staff. Income and expense are shared with the partner.

Risks in the past years will be eliminated with new technological developments and also cause new risks with agricultural mechanization tools. Those who live and work in this segment cannot see or ignore these risks. According to the International Labor Organization (ILO) and Food and Agriculture Organization (FAO), accidents have been reported to occur largely in the agricultural sector according to fatal incidents in the world. According to the report, each year, an estimated number of 335,000 occupational accidents 170,000 occurred in agriculture. According to the ILO and the World Health Organization (WHO), the use of pesticides causes at least seven million acute and long-term non-fatal diseases, each with 70,000 poisoning deaths each year [1].

In occupational health and safety related issues, perception and creation of a culture in rural areas is of great importance. In this sense, it is necessary to train the employees in the agricultural sector. Accidents and risks that may occur will be prevented by being

educated and will prevent the occurrence of work accidents. Risks in the agricultural sector can be listed as follows. These:

- Machine-related risks
- Risks from animals
- Plant-related risks
- Electrical risks
- Chemical risks
- Housing and nutrition risks
- Other risks

According to TUIK data, there are 1,885,952 tractors in 2018 according to 2018 data [2]. In these accidents, a total of 219 people were killed, 142 of them at the scene and 77 after the accident. Tractor accidents account for 1.1% of the total accidents, and the number of drivers is 6.8% of the total deaths [3].

Most of the agricultural activities are carried out with a number of agricultural tools and machines. These machines vary depending on factors such as plant pattern, soil characteristics, topographic structure and climate, while they are extremely complex. Almost all accidents are caused by these machines and many accidents occur every year. Accidents often result in death, and sometimes serious injuries. Injuries, serious losses such as organ losses, fractures, crushes, abrasions and ruptures occur. Those working in agriculture are transported to their work areas by extremely unsafe methods. The uninformed use of the machines poses extremely risks.

One of the risks faced in animal husbandry regions is caused by animals. These are kicking, biting, impact, crushing and so on reasons. These types of accidents generally occur in in-house areas such as stables and poultry houses. Milking units are generally not available in small family holdings. Milking is carried out by women and children. Occasionally, women and children are involved in an accident during manual milking. Crushing and biting are involved when performing certain activities with animals. Stables and poultry houses are extremely unplanned and uncontrolled areas designed by traditional methods in small family businesses. Therefore, no design, project or installation is applied. The building material is usually soil.

The most important element of production is to ensure that the plant grows under optimum conditions. But this is not always possible even if the necessary conditions are met. It is the fact that the plant does not get the necessary mineral matter from the soil in a sufficient amount of time and that the required water and fertilization are insufficient to meet the needs of the plant. Depending on the genus of the plant's desires, it may be genetically different.

Accidents caused by electricity sometimes occur at low voltages and sometimes at high voltages.

Extension cable installations, surface mounted installations, barn and poultry by animals from crushing and biting creates electric shock. Such risks are minimized in the structures realized with a project.

Chemical risks occur in pesticide applications used in agricultural control. Weed control, pest and insect control, fungal diseases in plants used in the fight against chemicals are dangerous. They are extremely important when using and maintaining. There is a risk of catching fatal diseases with the use of pesticides. Sometimes it occurs through contact and sometimes by inhalation. It can also lead to non-fatal diseases in long and sudden developing conditions.

Accidents caused by feeding and sheltering are risks such as inaccessibility to clean water resources and not being able to find potable water in adequate health conditions. This is important both for the people in the business and for the animals. Stables or poultry houses are sometimes located in the enterprise or under the dwellings. Sometimes the production company needs feed seeds, hay, medicine, and water and so on. Substances are stored with food and beverages in the immediate vicinity of the house or in the same warehouses. These needs are sometimes affected by family members and their relatives as a result of thoughtfulness and carelessness. Sometimes an irreversible wound is confronted with death. Maybe he's going through a lifetime of trauma, a mood. It is very important that chemicals and foodstuffs should be placed in separate sections and even be kept in different buildings.

Improper working conditions and non-ergonomic working conditions cause damage to individuals' musculoskeletal and circulatory systems. This damage can be caused by the fact that the employees cannot fully commit themselves to work. One of the advantages of the technology is to ensure that the production is quality and enjoyable. To provide working conditions that do not cause fatigue to the employees whose physical strength is used almost negatively and that the physiological effect is low. This also reveals the nature and quality of the work.

Child labor in the agricultural sector is an important problem in the world. Although there is a broad consensus in the world for this problem, it is still a common problem waiting to be solved. In terms of children's development was important. Child labor leads to problems such as legal restrictions, exemptions from family labor, supervision of weak or non-occupational supervision and exposure to children's education standards [4]. Children are sometimes in production, sometimes in the playground. The game is unprotected agricultural machinery, sometimes found within the enterprise and sometimes at the site. Without any safety precautions, this machine is seen as a toy and seems to be a part of the game. Sometimes it can be a driving movement in the bile without starting the machine. In addition to agricultural activities, vehicles and machinery are suitable hangars. It provides safety, preparation of

moving mechanisms, and protection from corrosion, protection and a cover. Moisture, light, dust from the negatives such as, should be kept closed. Repair and maintenance of tools before the season should be done. It shall be designed in such a way that it is positioned on an insulating material or on a wooden material and according to the entrance and exit of the hangar. If possible, depending on the production pattern in the plant used for a production vehicle and is available in various departments.

Seasonal agricultural workers in the agricultural sector in Turkey have great importance. Seasonal workforce and function increase is brought about by not meeting what they want. Migration to production areas also brings about transportation, housing, health and occupational safety issues. It remains alone with environmental adverse living conditions.

Along with global warming, their climate change. One of the risks is changes in climate conditions. Sometimes there are risks for plants that do not fall the necessary precipitation in production. The average development levels of the years, temperature, wind and so on. Factors to be more or less than the needs of the plant mean more and less production. The yield in production is a combination where the plant can be met at the beginning.

II. RESULT

The agricultural sector has a distinctive, sensitive structure that is highly influenced from a social, personal, technological and economic perspective. The effective role of humanity in feeding is directly related to the management of risks that threaten agricultural production Risks in these sectors bring risks in the economy. Prevention or mitigation of risks is necessary for the national economy. Agriculture is important not only in economic terms but also in terms of employment. Reducing some of the risks on the tractors will be an important step in terms of reducing the other agricultural tools and machines where power is transferred. The need to protect employees in the name of occupational health and safety is very clear. It

is also a requirement of the principle of being a social state.

Employees in the business lack a number of security risks. Occupational health and safety training should be provided to all family members. Risks in production should be transferred with cause-effect relationships.

Child workers in the world and in our country continue to be a problem. Child workers are deprived of education and health services due to their work. They have no place in agricultural production. School is the area where the risks for them are eliminated. Training in a healthy environment will provide them with opportunities to anticipate more dangerous risks in life.

While the legal regulations for the agricultural sector are late, risks may increase gradually. In order to protect the employees in this segment, legal arrangements shall be made in case of urgent need to protect the employees and to look forward to the future with hope.

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