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GLOBAL CLIMATE CHANGE AND ITS IMPACT ON LIVESTOCK SECTOR

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ABSTRACT

Recently years' population is dramatically growth that in fact it directly influenced at demand for livestock products. The scientists have forecasted to livestock products demand that it will be growth almost double by 2050.At the same time, global climate change is having a major impact on agriculture, including the livestock sector, as food production, annual changes in water resources and increasing various diseases not only negative effect the volume of livestock production such as these problems are directly negative effect at quality of goods. This article provides scientific insights on global climate change and its impact on the livestock sector, as well as its mitigation. Productivity in livestock and the quality of their products are directly related to yearly water supply, while climate change is leading to a reduction in pasture and fodder areas for livestock. Like these problems also have a seriously impact to provide on food security. It should be noted that the development of animal husbandry also has a direct impact on the growth of greenhouse gas emissions. At the same time, the role of the livestock sector in strengthening the food supply and ensuring security is high. It is in this network to produces an average of 15-30% of the overall consumption calories and protein **[1].**

KEYWORDS: *Climate Change, Food Security, Livestock Farms, Agriculture, Arable Lands, Pasture Areas, Food Production, Livestock Production, Quality Of Food, Rural Areas, Overall Consumption.*

INTRODUCTION

According to a UN report, the world's population is expected to reach 9.5 billion by 2050 that this indicate will increase of about 30 percent than today. However, researches shows that with the growth of global lifestyles, demand for agricultural products may increase by an average of 60 percent during this period. **[2]**

Also, the arable lands are not increased in the last 30 years for use in the agricultural. Conversely, the increase in secondary desertification has resulted in a partial reduction in arable land. Rosegrant **[3]** and his teams that 17% of the total calories consumed by humans and 33% of the protein consumed come from livestock products.

Growing demand for livestock products and declining areas of forage crops in developing countries have led to a significant decline in production. At the same time, it is possible to increase livestock production through industrialization and intensification of production, but the natural properties of the goods will be reduced.

Strengthening the fodder base in the livestock sector of our country is carried out by two ways which is the first is through the cultivation of fodder crops for livestock on the arable lands, and the second is to increase the productivity of pasture areas. Nowadays in our country all pasture areas about 50 percent of degraded at varied levels that strengthening the fodder base in livestock is a serious challenge for us. It should be noted that the development of animal husbandry will increase not only the production of protein and meat for consumption, but also the production of organic fertilizers to increase crop yields.

According to an international studying conclusion that more than 844 million people in the world live in rural areas due to certain limited incomes. However, about 40 percent of these people's additional income comes from the livestock sector **[4].** According to FAO research that in 2030 world meat production will reach 455 million tons and milk production will reach 1,077 million tons. however, these indicates 522.59 million tons of milk **[5]** and 328 million tons of meat **[6]** were produced in 2018.

The Impact of Climate Change on Livestock:

Despite the uncertainties of global climate change, IPCC reports **[7]** that by 2100, climate change will rise from $0.3C^0$ to $4.8C^0$.In the last 30 years, the area under crops has not increased, and production has increased due to intensification. However, global climate change is affecting not only crops of yields on the agriculture, but it also influences the quality of livestock products, such as livestock growth, productivity and the quality of livestock commodities. This effect is due to the increase in carbon dioxide in the atmosphere and global warming. The impact of global climate change on the livestock sector is presented in Figure 1.It is known that the increase in the number of livestock, the incidence of various diseases, and the provision of a stable food base is all directly related to the natural climatic conditions. At the same time the Climate change will also have a significant negative impact on pasture yields, leading to a sharp decline in the productivity of existing pastures and an increase in the number of various pests.

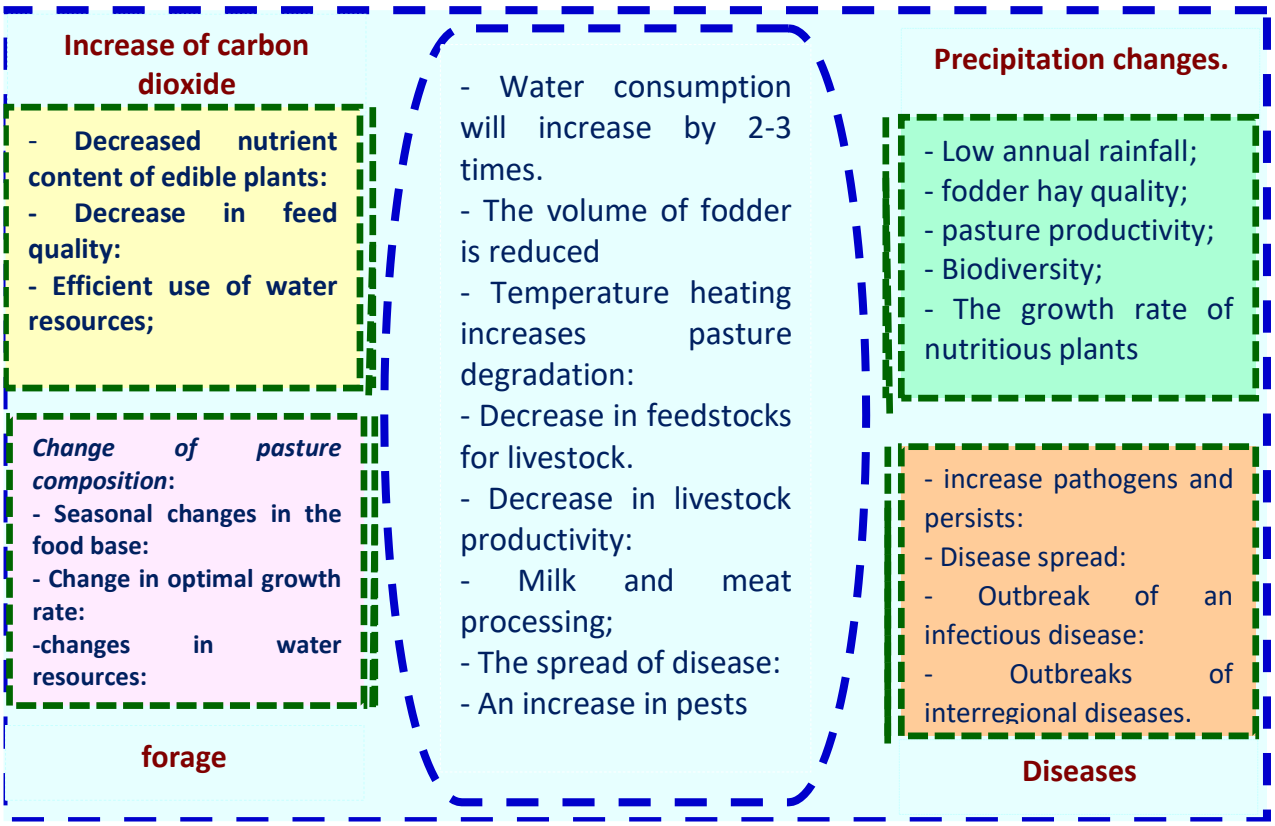

Figure 1.Impact of climate change on livestock feed base.

The most important factor in the livestock sector is the fodder base and the increase in CO_2at the atmosphere has a negative impact on the production of fodder plants, which along with the level of productivity, also reduces the quality of fodder. In the process:

- An increase on the amount of carbon dioxide in the atmosphere leads to a deterioration in the nutritional value of hay and the quality of grain obtained;
- Increasing pests in the pasture areas, at the same time pasture yelds also is decreased as a result the risk of pasture degradation levels increases;
- Climate change has also led to changes in plant species in pastures, with shrubs and half a shrubs being replaced by degraded desert plants.

Nowadays, if we look at the statistic indicates of livestock in our country's that there are 4.8 million heads of cattle and 22.5 million heads of sheep. Of these, more than 90 percent are cattle's and more than 81 percent are sheep under the control of house farms. If we take account that the most house farms livestock feed on pasture areas this situation increase pastures degradation levels. Recently years, research suggests that while the role and impact of the livestock sector in ensuring food security is high, the scale and magnitude of the industry's impact remains unclear.

Studies have shown that climate change is related to food, food security, and the importance of the livestock sector in these issues, with little emphasis on future food production because of climate change and the role of livestock in it. Most studies have looked at the impact of climate change on crop production, but there is little focus on this phenomenon how affects livestock sector. Therefore, it is useful to analyze the increase or decrease in the number of livestock and the relationship of this process to climate change.

The prospects and development of the livestock sector depend primarily on their food supply, i.e. the composition of the feed, the amount of annual precipitation and the level of O_3in the troposphere. In most cases, pastoralists who specialize in pasture farming do not study the composition of forage plants scientifically because the process requires high-cost laboratories along with large sums of money. On the other hand, pasture livestock is extra income for people who live in rural areas so they do not pay attention like these problems.

We can divide the production of fodder for livestock into several groups, cereals (mainly fodder, mainly fodder for farms specializing in meat and dairy production), and pasture fodder and harvested fodder, as well as post-agricultural fodder can be broken down into nutrients.

Studies have shown that high CO_2 concentrations stimulate the primary yields of food plants, as well as high yields of certain types of food plants. However, although this process ensures the good development of plants (wheat, rice, soybeans) with C_3 photosynthetic pathway, C_4 photosynthetic type plants (corn, sugar cane, tropical plants) negatively affects productivity. However, high levels of carbon dioxide can also reduce feed production for livestock, meaning that a study by Myers and his team found that higher levels of CO_2 in the atmosphere resulted in lower concentrations of grains grown **[8].**

Since the development of the livestock sector is directly related to the strength of the fodder base, changes in the volume of water resources are an important factor for animal feed. Therefore, pasture yields vary depending on the annual rainfall and air temperature. If there is a decrease in precipitation and a temperature rises above 30 C^0, strengthening the fodder base in pasture livestock will be a serious problem. Because the efficiency of animal husbandry depends primarily on the supply of solid feed. Therefore, it is important to pay more attention to the possibility of using more local resources in the development of the livestock sector.

Today, the problems of fodder production in the country, the strengthening of the fodder base because of unregulated use of pastures are becoming an urgent problem. In our opinion, it is

necessary to organize production in the field of cattle breeding and cattle breeding in the form of an integrated system. This is because of most of the pastures are not used properly, and their efficiency is declining due to water supply problems. At the same time, there are problems with the cultivation of forage crops and the selection of new high-yielding forage crops.

Accordingly, the development of the livestock sector should be divided into several parts, ie strengthening the fodder base, regular monitoring of livestock (daily feed consumption, livestock changes, labor costs, etc.) and the development of livestock breeding as a whole system expedient. We can also disassemble livestock complexes depending on the type of product produced. Actually, livestock farms divided several types, which are dairy production and meat. At the same time, pasture livestock is specialized only meat production, so like these farms prospects are related to only yearly precipitation.

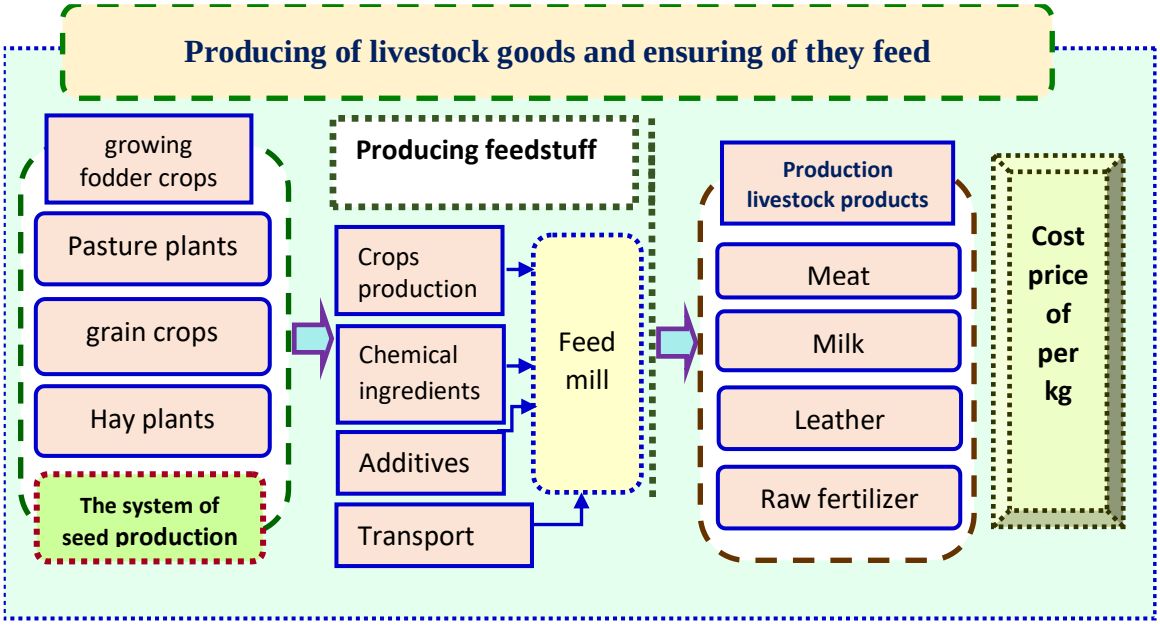

Figure 2 Development feed system and production livestock goods

As can be seen in Figure 2, the impact of global climate change directly on fodder production in livestock affects their productivity, i.s. the change in the unit cost of production.Nowadays, although much attention is paid to the industrialization of production, the production of strong nutrients depends on the productivity of natural crops and the nutritional value of the grains obtained from them. **[9]**

In our opinion, today, the international global climate change, along with all other countries, has a significant impact on the livestock of our country, as well as on the volume of food production. Therefore, in order to increase the area under forage crops and reduce the degradation of pastures, it is necessary to expand the area under pastures and introduce mechanisms to attract investment in the sector. At the same time, the increase in the level of secondary desertification of arable lands is leading to a sharp decline not only in agricultural production, but also in direct feed for livestock.
In our country, currently about 10 percent of 4.2 million hectares of arable land are unusable, and 48 percent of 17.0 million hectares of pastures are degraded to varying degrees, and 17% are severely degraded, indicating serious problems for the livestock sector in the future.

CONCLUSION

Strengthening the food supply in the context of climate change is one of the most important issues in the livestock sector of the country. The seed industry can be developed through the introduction

of financial support mechanisms for pasture seed centers and the introduction of a public-private partnership system in the field. At the same time, degradation can be reduced by improving water supply in desert areas, developing new steep and shallow wells, and developing pasture sharing.

Given that most of the severe degraded pastures are not the result of climate change, but rather the misuse of pastures, restoring the productivity of degraded areas depends largely on government support. Resolution of the President of the Republic of Uzbekistan dated February 9, 2021 no. PP-4984 "On additional measures for further development of the karakul industry" subsidy allocation is defined. However, because the amount of this subsidy is set at 120 million soums, and the fact that groundwater is located at different depths in remote desert areas, the possibility of taking full advantage of this benefit is limited.

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