



# Marketing of the Livestock Sector and Its Impacts on Food Security: A Case Study of the Northern Border Region

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Paper ID: 13A4I

Volume 13 Issue 4

Received 23 July 2021

Received in revised form 23  
March 2022

Accepted 29 March 2022

Available online 04 April  
2022

## Keywords:

Livestock marketing;  
Food security; Electronic  
market; Saudi Arabia;  
Food production;  
Livestock food supply  
chain; Food security  
elements.

## Abstract

The study sought to identify the roles of the livestock marketing sector in enhancing food security in the Kingdom of Saudi Arabia in general. The methodology was a systematic review of previous studies regarding the concepts of livestock, the marketing sector, and food security. Findings showed that the livestock sector is an essential pillar in supporting global and national food security by providing meat and cheese products and their nutritional elements that affect human growth. However, the sector in the study sample suffers from high prices of production inputs such as feed, treatments, and veterinary medical consultations, and the lack of markets close to owners of Livestock and those who depend on grazing to provide food for animals, and who suffer from a scarcity of green spaces and pastures. The study also revealed some recommendations.

**Disciplinary:** Agricultural Economics.

**JEL:** M3; Q13; E23.

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## Cite This Article:

AL-Ghaswyneh, O. F. M., Oweis, K. A. (2022). Marketing of the Livestock Sector and Its Impacts on Food Security: A Case Study of the Northern Border Region. *International Transaction Journal of Engineering, Management, & Applied Sciences & Technologies*, 13(4), 13A4I, 1-10. <http://TUENGR.COM/V13/13A4I.pdf> DOI: 10.14456/ITJEMAST.2022.72

## 1 Introduction

International reports published annually, including the Food and Agriculture Organization of the United Nations “FAO” several important information on the state of food globally, stressing the importance of directing global food security policies to strengthen the livestock and agricultural sector in order to avoid the gap caused by population growth compared to available

food resources and to keep pace with food requirements in various countries This trend comes due to what specialists and researchers predict about the risk of famine and lack of supplies due to climatic changes on the planet that may harm the ability of agricultural producers to meet global demand, including the problems of global warming, drought, desertification, fluctuation in rainfall, and the decline in the level of the ice sheet, which is the Earth's stock of fresh water and what Followed by the problems of chemical pollution, change in the composition of the soil and the proportion of carbon emission in the air, the use of pesticides, agriculture in greenhouses, and transformational industries to produce nutritional supplements from chemical and organic compounds that have been proven dangerous to human health. Hence, this study comes to identify the impact of the livestock sector in enhancing global food security and the resulting results in the light of previous studies and what can be recommended as scientific conclusions that support decision-makers and researchers in developing a knowledge base about the sector and its relationship to the various sectors intertwined with it.

Because there are lack of sufficient information about the studies conducted in the field of food provision and food security and the relationship of the food marketing sector to strengthening the ability of countries to develop plans and policies that support food security and meet the needs of steady population growth with the need to identify the importance of the animal sector in supporting the economic growth sector Reducing unemployment, promoting human health, and protecting the natural environment of wild and domestic animals. Where the Kingdom of Saudi Arabia relies on agricultural products and meat as the main sources in the daily dining table of the population and arranges the agricultural employment sector, agricultural projects, and the livestock and fisheries sector. The study comes to identify the efforts of researchers in the field of marketing the livestock sector and its impact on food security in the northern border region, which contains about 3 million heads of sheep, camels and poultry, and nearly 100,000 heads of cows, not to mention the activities of shy fish farming, but it is an important geographical area in the livestock sector to provide pastures, rainwater, and international transport routes for agricultural products.

The importance of the study lies in the fact that it is the first of its kind at the university and regional level in research in the field of animal agriculture and the relationship of the marketing sector in linking products to the needs of the region and the Kingdom from the daily food basket. It adopts a theoretical review of relevant studies and provides specific and clear results for decision-makers and those interested in this sector.

The study sought to answer the following questions:

1. What are the production inputs related to animal husbandry?
2. What is the role of the local market in supporting the livestock sector?
3. What is the impact of the livestock marketing sector on food security?

## 1.1 Terminology of Study

The study included the following:

- Livestock: All kinds of domestic and domestic animals, poultry and birds including cows, buffaloes, sheep, goats, pigs, poultry, camels, llamas, alpacas, horses, donkeys, rabbits, and even bees.
- Food security: The extent to which sufficient food is available at all times, so that it is of nutritional value, varied, balanced and compatible, and the global food supply of nutrients is not limited to quantity, but also includes food quality and diversity
- Livestock Production Inputs: all requirements for livestock production, including fodder, veterinary consultations and treatments, transportation machinery, water, electricity, shipping and packaging tools, and industrial equipment.
- Marketing elements for agricultural products: They are everything related to livestock trade and marketing, including prices, taxes, customs duties, human resources, financing, investment, organized legislation, local and international markets, economic and trade policies, and e-marketing.

## 2 Theoretical Consideration

### 2.1 Production Inputs

The use of technology is important in the production and breeding of livestock, for its role in the development of the feed industry (Prathap et al., 2021). Although grasslands are considered the predominant fodder source through grazing operations. However, overgrazing is one of the reasons for the low productivity of grasslands. It is damaged by gases that cause global warming. With the presence of livestock, it is affected by the decline in the main source of fodder, especially after many countries have converted lands to residential or seasonal cultivation patterns. While the livestock owners You are responsible for providing a large amount of red meat production in the future. The most important input for their production is the availability of fodder. To enable them to transition to a competitive and market-oriented livestock industry (Michalk et al., 2019). Many studies have shown the importance of fossil shells as additives for several uses. It is a stimulator of animal growth, a natural medical vaccine that helps in raising livestock and veterinary treatment contributes to water purification, and purifies feed from mycotoxins. It removes the effect of pesticides and is a natural source of silicon in livestock (Ikusika et al., 2019). Livestock production depends entirely on the transportation system. Livestock and feed are transported during the production stages. Livestock may be affected due to the bruises they are exposed to during the transportation process from the place of their grazing and farms to the various stages of production, sale, slaughter, sterilization, packaging and marketing. The most important of them comes from packing meat in accordance with sanitary conditions (Yang et al., 2019). Due to environmental restrictions, the prices of milk and meat are subjected to forced fluctuations Livestock producers have to search for lower production costs in line with their lower environmental impact. This necessitates the use of diverse sources of electric power and water to

maintain commercial competitiveness and reduce the environmental consequences of production. (Shine et al., 2018)

## **2.2 Local Market Role in Supporting the Livestock Sector**

The marketing of national agricultural products supports the parties to agricultural production, especially small farmers, in most countries such as Africa. Markets and commercial transactions contribute to improving the sale of livestock in local markets. Enable livestock producers to achieve higher profitable sales prices. This is done by providing commercial centers specialized in distributing livestock products. Where market sales of livestock products achieved an average selling price higher At a rate of 16-20% compared to those sold in temporary markets or distant markets, the cost of transportation, shipping, local tax, and sometimes customs are deducted from the profit if they are exported abroad (Gwiriri et al., 2019). Since the GDP in Saudi Arabia, like the rest of the world, is included in its economic structure, the extent of its impact on people's livelihood and securing the requirements for living and healthy life, in the agriculture, livestock, and fisheries products marketing sector contributes to the rise in GDP and the local market supports the livestock sector with nutritional needs. Here, there are challenges for livestock producers in providing capital. Raising the percentage of sales. fluctuating annually. This requires the provision of capital investments supported by the beneficiaries in the livestock sector. It is also possible to provide innovations that enhance e-marketing and investment in animal products (Afandi et al., 2021). The specialized market in the livestock sector provides the service of investment, sale, and purchase of livestock products and pushes towards raising the efficiency and expertise of livestock producers. These include training, consultations, feasibility studies, and assistance in marketing and distributing livestock. (Ceballos et al., 2018; Hossain et al., 2021)

## **2.3 The Impact of the Livestock Marketing Sector on Food Security**

The food security system is affected by the market processes related to the livestock sector through the need for the food system to provide food components rich in protein and vitamins, and the system's need to strengthen the livestock sector, which is affected by agriculture due to agricultural practices, pollution, production costs and local and global marketing. In addition, there are challenges in understanding marketing mechanisms to enhance food security Which is considered a low level due to lack of investment, awareness, lack of skills on the part of producers and competition in the market (Sekaran et al., 2021). Food security is affected by the state of the global market, as trade disputes between the largest economies of the world, specifically China and the United States of America, have caused restrictions on China's exports of veterinary medicines, a shortage in supplies and agricultural products, and the associated tariff obligations stipulated in the rules of the World Trade Organization, which It will prevent the influx of sudden large quantities of food products, which will cause a surplus in production for livestock breeders, a decrease in prices, an increase in the cost of production and a lack of cash flow, and the impact of working families and livestock breeders due to the hardship of living and high unemployment with

the availability of food to a large extent for producers compared to a significant increase in the prices of the contents of the global food basket Which causes a sensitive problem for food security for all countries of the world. (Martin & Glauber, 2020)

### 3 Methodology

The study used a systematic review to explore studies' findings of the marketing sector's impact on livestock in the Kingdom of Saudi Arabia- the case of ALHudud Ash Shamalieh.

The study community consisted of studies, research, and statistics published in refereed scientific journals regarding the reality of livestock marketing. The study sample was limited to the years 2017-2022 for all references related to the livestock sector and its marketing and its impact on food security. The methodology applied the following model to retrieve the results of the theoretical review.

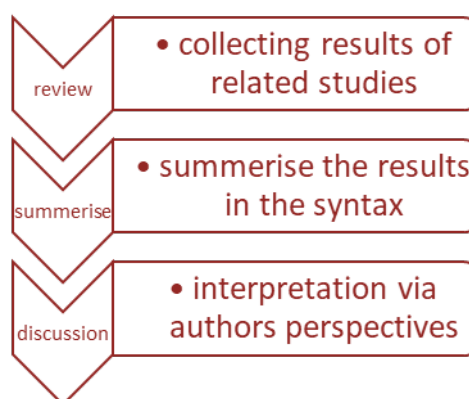


Figure 1: The study model.

### 4 Results

#### 4.1 The Effect of Production Inputs

Through the study, it was found that the production of livestock and poultry is significantly affected by production inputs, which included feed, veterinary consultations and treatments, transport machines, water, electricity, shipping and packaging tools, and industrial equipment. All of which are affected by marketing factors related to global trade mainly and local trade and livestock marketing operations and the cost value in addition to input prices, which are deducted from net sales profits, followed by taxes, customs duties, tariffs imposed on goods and sales centers, the efficiency of human resources, the quantitative value of financing, and the volume of investment. Despite the existence of legislation regulating the work of the livestock sector, it is designed for internal conditions and has a fixed nature, as it has not been reviewed and updated in conjunction with market fluctuations and global conditions, followed by the sector's impact on local and global markets, economic and trade policies, and electronic marketing. Figure 2 shows various production inputs environments.



**Figure 2:** Livestock and poultry production major inputs relevant.

## 4.2 Marketing Impact

Studies have shown that the regulation of marketing operations and direct sales centers and the provision of transport and distribution services, and packaging affect the livestock sector, as its impact was evident in achieving several benefits represented mainly by enabling well-to-do farmers who have herds of livestock of various quantities and types to access direct sales centers and strengthening the role of the productive sector is in providing food products that guarantee a healthy and material livelihood for them, in addition to their contribution to the local product, especially women, but food programs are affected by many challenges related to their sustainability, which may cause insufficiency Stock of feed and water and the cost of transportation. This calls for more regulation and support for this sensitive and important sector in enhancing food security. The market is affected by elements of food security, as abundance is an important factor in the sustainability of the market, and access to sales centers enhances the ability of livestock breeders to sell their products easily, especially in pastoral areas far from city centers and services. Goats, poultry, eggs, fish, and they all lead to the stability of the main food source of protein and are useful in various times of crises and a great source of income in many countries. As presented in the figure below, the market elements are correlated in all processes and flowing supply chain contents to each other.

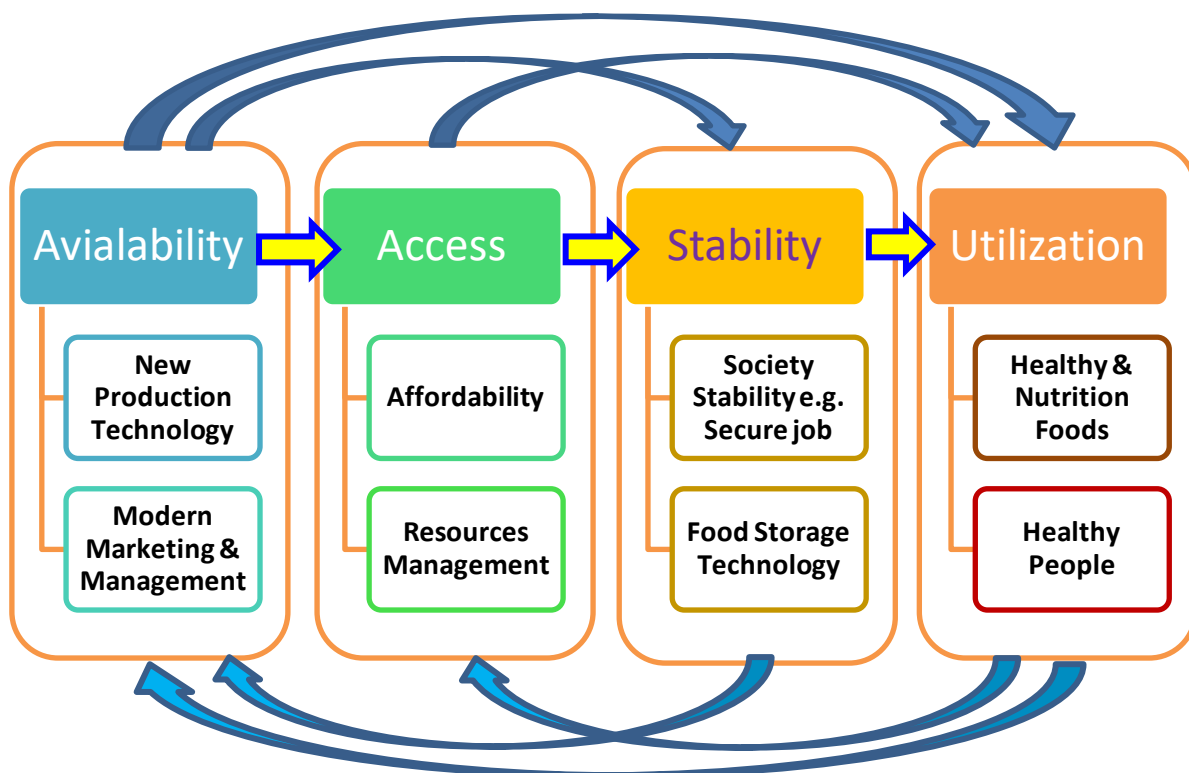
## 4.3 Study Questions

Upon results, it is clear that production inputs have a significant relationship with the local market which is indeed affected by global issues and impact on food security.

Accordingly, the study encapsulated the following illustrations that answer the study's questions as follows:

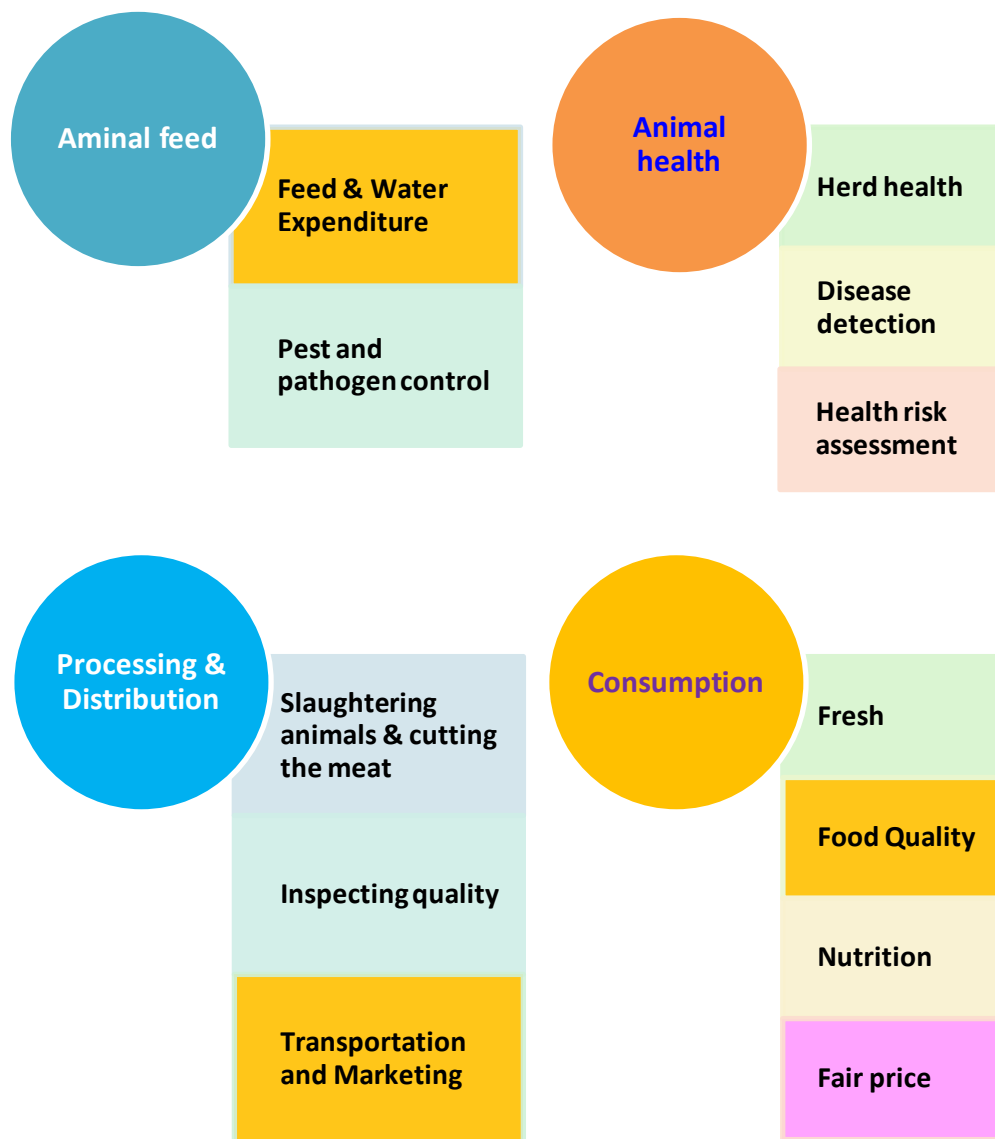
**Q1:** the results revealed that livestock production inputs are the production demands, including fodder, veterinary consultations and treatments, transportation machinery, water, electricity, shipping and packaging tools, and industrial equipment.

**Q2:** findings showed that domestic animals are a source of protein in diets and affect income and provide a working environment for workers and cash from hard currency. They also support small producers of livestock and cattle, while traders consider them a source of livestock as a storehouse of wealth, and provide traction energy and organic fertilizers for crop production and as a means of transportation. Meanwhile, this is a strong relationship that attracts local marketing to be affected by livestock.



**Figure 2:** Food security with four interrelated elements.

**Q3:** The third question focuses on the impact of the livestock marketing sector on food security, The livestock sector contributes to food supply and food security locally, regionally and internationally. This is due to its main role in the different products of meat, milk and eggs at a rate of 10-35% of the number of calories, and it provides a good proportion of global calories and protein, and the different quantities of meat and dairy products distributed in global markets from grazing systems, agriculture, fertilization, irrigation and harvesting on land which are often not well suited for cultivation. This important role of the livestock sector enhances its effectiveness in times of political or economic crises or the emergence of demographic growth surges, which makes the sector a major impact on food security, the local market, and the livestock marketing sector. The estimated Figure 4 shows the supply chain as mentioned by (Godde et al., 2021).



**Figure 3:** Livestock food supply chain.

However, food security can be affected by political or social instability. Sudden food insecurity, as happened during the Corona quarantine period, and bad problems Climate and environmental pollution cause major problems in the application of legislation regulating animal production.

## 5 Discussion

Through the results of the study, it is clear that the livestock sector in the Kingdom of Saudi Arabia focuses on sheep, camels, poultry and fish mainly accompanied by significant growth in the agricultural production sector for various agricultural products except for fodder or the availability of sufficient grazing areas for livestock producers. The results also showed the impact of the high cost of negative production inputs on the production process and its stages until reaching consumers, accompanied by a major problem in the provision of local and electronic commercial marketing centers that adopt competition, financing and effective investment in the production sector and the sector's need to update policies and legislative regulations as well as developing alternative plans in the event of risks of a decline Selling and high demand in light of the



influential major economic differences. It turns out that the marketing sector for livestock products is important and sensitive in meeting the requirements of global and national food security, of its role in enhancing production, selling and shipping processes and providing food quantities of high nutritional value with protein and quality in specifications and at a lower cost, providing sufficient financial profits for producers and enabling families to purchase or raise these products as a source of safe living.

## 6 Conclusion

The results of the study show that the livestock sector worldwide is similar in terms of its impact on the marketing sector and its impact on food security. This is evident from the consensus of all countries on production requirements, the most important of which is feed and medical treatments, providing markets, and reducing the costs of taxes and tariff and customs fees. The livestock sector needs to provide a stimulating regulatory environment in which the sector is spared from the consequences of commercial disputes to ensure the provision of direct markets and distribution centers, packaging and shipping and reduce the cost of transportation and the development of training programs for livestock producers, raising their expertise and empowering women and productive families to work in this sector along with Developing systems, creating electronic markets, providing animal revolution products with a high nutritional value, mitigating the environmental impact of production waste, and benefiting from it in saving energy and avoiding industrial pollutants.

The study recommends setting up an organization that enhances livestock breeding and marketing, providing feed at a lower cost, and providing local and international commercial markets to export the surplus. The field is also open for research and investigation intensifying how to develop the livestock production sector using technology and renewable energy to reduce production costs and digital marketing to reduce the burden of shipping and transportation from direct sales centers and red and white meat and fish processing.

## 7 Availability of Data and Material

Data can be made available by contacting the corresponding authors.

## 8 Acknowledgements

The authors wish to acknowledge the approval and the support of this research study by the grant no: (BA-2018-3-9-F-7920), from the Deanship of Scientific Research in Northern Border University, Box: 1321, Arar, P.O. 91431 Saudi Arabia.

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