

An Economic Analysis of Indian Livestock Sector using Livestock census 2019



Submitted by

Amal Kalluvarambil Vinod

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Dr. Anchal Arora

Indian Institute of Foreign Trade

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Introduction and Motivation

Livestock is an integral element of Indian Agricultural ecosystem and has multidimensional contribution to the overall growth and development of agriculture as well as the rural livelihood. Livestock directly impact the food and nutritional security by means of supplying nutrient-rich edible products, generate a sustainable income source, as well as an employment for many households especially as a cushion to the agriculture dependent households against crop failure, providing draught power and manure for the crop cultivation and also help in generating foreign exchange through the export of produce.

Many a times crop residues are used as a feed for livestock and this in turn help in saving land which can be used to produce cash crops that would otherwise be used to produce fodder. This way livestock also makes substantial contribution to environmental conservation by supplying draught power and manure which can substitute chemical fertilizers and also act as a source of biofuels in producing biogas and cow dung cakes which will save the dependency on petroleum products.

India houses the world's largest livestock population accounting for over 35.94 per cent of cattle, 20.45 per cent of buffalo, 27.80 per cent of goats and 13.87 per cent of sheep. The period post-independence saw India's total livestock population increase from 289.4 million in 1951 to 535.78 million in 2019, while total poultry population increased consistently from 73.5 million in 1951 to 851.81 million in 2019. *(Source: Livestock Census 2019, Department of Animal Husbandry and Dairying)*

Livestock play a critical role in rural livelihoods and the economy. They provide income and employment for producers and others employed in, sometimes complex, value chains. They are an important asset and act as a safety net for the poor, especially women and pastoralist groups, and they provide a vital source of nourishment for billions of rural and urban households. These socio-economic roles and others are increasing in importance as the sector grows because of increasing human populations, incomes and urbanization rates. To provide these benefits, the livestock sector uses substantial amount of land, water, biomass and other resources and emits a large quantities of harmful greenhouse gases. There is a growing concern on how to manage the overall growth, where the benefits can be attained at a significantly lower environmental cost. Livestock and environment interactions in developing countries are both positive and negative. On one side the manure as mentioned earlier from ruminant systems is a valuable source of nutrients for small scale farmers, whereas in more industrial systems, or where there are large concentrations of animals, they can pollute water sources. On the other side, ruminant systems in developing countries can be considered relatively resource-use inefficient. Because of the yield gaps in most of the production systems, improving the efficiency of livestock sector through sustainable intensification practices presents a real opportunity where new initiatives can contribute to provide sustainable solutions. To achieve this, it is necessary that production systems become market-orientated, better regulated and socially acceptable so that the right mix of incentives exists for the systems to flourish.

Livestock Sector accounted for nearly 3.36 billion USD worth of exports in 2020 (*Database of APEDA, Agriexchange*) and among the products buffalo meat accounts for nearly 3.1 billion USD of export and nearly 15 % of the total value of agro-product exports from India. The Major export destinations are Hong Kong, Vietnam, Malaysia and Indonesia. Under HS code chapter 01 (Live Animals), India has major export volumes with United Arab Emirates, Nepal, Bhutan, Kenya, Bangladesh among others. The possibility of an FTA between India and United Arab Emirates will definitely propel the Livestock sector positively. But in the overall category of Livestock exports India still has a lot of ground to cover to be a top exporter in this category.

Agriculture has a major role in reducing poverty since most of the world's poor live in rural areas and are largely dependent on agriculture, while food prices determine the cost-of-living for the urban poor. About half of the total poor living in South Asia, and half the remainder in Sub-Saharan Africa, with smaller numbers in the rest of the developing world. Rapid growth in demand for livestock products, in the developing countries, is visualized as a 'food revolution'. Livestock products are costly in relation to staple foods, so in developing country consumption levels are still low, but increases with rising incomes. Poultry meat consumption is growing fastest. Growth in consumption is most of the times at the expense of increasing net imports of all Livestock products. Increased production, and higher self-sufficiency would save millions of foreign exchanges. (*Source: Trademap and Cybex database*). Livestock products such as eggs and milk also help in improving the nutritional level among the population and some of the critical minerals such as Calcium and Phosphorus are abundant in these products. So, the interlinkage between Agriculture and livestock is strong both in terms of improving the farmers income, overall nutrition of the population and also acting as a source of organic nutrients for Agriculture.

Livestock plays an important role in Indian economy. About 20.5 million people depend upon livestock for their livelihood. Livestock contributes 16% to the income of small farm households as against an average of 14% for all rural households. It provides livelihood to two-third of rural community. It also provides employment to about 8.8 % of the population in India. India has vast livestock resources, and this sector contributes 4.11% GDP and 25.6% of total agriculture GDP (*Source: Livestock census, 2019*).

In view of the rising optimism and potential of this sector, this study aims to examine the development of this sector in terms of production of livestock products, employment and trade. More specifically, it aims to critically analyze the production of livestock sector in India, growth in overall productivity, export volumes and new trade partners. It will also analyze the policies that have been formulated for this sector both at the central government as well as state level in improving the livestock population and sectoral GDP from livestock. The study could also facilitate the policy formulation through understanding the current state of affairs at the bottom of the pyramid and hence develop a synergy between the expected outcomes that are envisioned and if the move is happening in the same direction.

Topics to be covered include:

- Trends in the size and structure of Indian Livestock sector
- Production of livestock products

- Export performance of sector
- Nutritional value of products
- Contribution to improve the overall income of households
- Government policies that have shaped the sector
- Exports from Indian livestock sector
- Front – runner states in the livestock sector

Literature Review

To gain a deeper insight and understanding of the topic, a literature review has been conducted. These published data helped me in my research and helped me in deciding relevant study material for preparing this dissertation.

Livestock is a capital asset, that is produced in the past and contributes to future product output. Investing in or acquiring livestock mostly involves borrowing or saving capital in the expectation of future return on capital. Rearing of livestock also requires a circulating capital need to help meet the cost of production be in terms of feed and nutrients or other auxiliary cost. Martin Upton had discussed in his research paper titled 'The Role of Livestock in Economic Development and Poverty Reduction' published in Pro-Poor Livestock Policy Initiative, the need to efficiently shape the livestock sector and its contribution in the overall improvement of the farmer income and overall risk mitigation especially in agrarian based developing countries.

M.Herrero et.al. in their research paper '*The Role of Livestock in Developing countries*' published in *Animal*, also discusses the double-edged sword nature of livestock sector in developing countries where traditional practices are very rampant. In a word today that is concerned about sustainability and environmental conservation, extreme care needs to be taken to ensure that the development of livestock sector doesn't come at the cost of environmental degradation. The government in developing countries have a significant role to play to ensure the growth is in the right direction and a balance is maintained between growth and environmental conservation. The research article uses secondary data taken from FAOSTAT (Food and Agricultural Organization) database.

K.P.Sonavale et.al. in the research paper '*Livestock sector in India: A Critical Analysis*' published in the *Asian Journal of Agriculture extension, economics and sociology*, perform a critical analysis up until the 2012 livestock census. The study had examined the growth as well as the export dimension of Indian livestock sector. The various factors affecting the output and the trends of production, and the factors of determinants were also analysed. The study also performed regression analysis, the Markov Chain analysis and Coppock's index was computed to study the data to have a deeper insight to the results and trends observed. The research is based on the time-series data from APEDA (Agriculture and Processed food products Export Development Authority) and FAO Database. The research methodology

focuses on compounded growth rates and instability analysis using coefficient of variation and Coppock Index.

S.N.Mishra had published '*Indian Livestock Economy: A perspective on research*' in *Indian Journal of Agriculture Economics*. This research paper discusses the various development angles of Indian Livestock Sector. It also delves into the genetic variability of livestock sector in India, environmental factors that has favored Indian breeds be it the topical or the Himalayan climate. The study also focuses on the importance of livestock sector in sustaining the food as well as the overall nutritional requirement of the second largest populated country in the world and at the same time act as a substantial source of income and employment for the rural households. Livestock sector has always been mutually beneficial to developing and improving the organic input required for agriculture. Since the advent of industrial development and the blue revolution the need and demand for milk and other associated products have been on the rise and this has also incentivized livestock breeders. In conjugation leather, leather tanning, jewelry and a host of cosmetic industry also require livestock derived products as ingredients and all these are helping the enrichment and growth of livestock sector. The paper uses secondary data from the IASRI (Indian Agricultural Statistics Research Institute) and CSO (Central Statistical Organization).

A.K. Dikshit et.al. had researched '*Indian Livestock Feed demand: Estimates and Projections*' published in *Agriculture Economics Research Review*, the paper estimated the feed consumption rate and its growth and subsidization over the years since independence. An in-depth study on the concentrates requirement and its subsequent result in improving the production from livestock is also correlated. Although exact estimates of the country total feed requirement were not available, efforts were taken through approximation techniques to reach at the most conclusive estimates. The paper uses data from a feed consumption survey undertaken by ICAR (Indian Council of Agricultural Research) and NATP (National Agricultural Technology Project). The sampling technique used is systematic random sampling in 10 regions in India excluding the North-east sector, by delineating regions into village, district and regional level based on the number of households in the particular region.

P.S. George had published '*Dairying and Livestock Economy of India – A Review*' in *Indian Journal of Agricultural Economics (IJAE)* in 1996. In this paper he has studied the overall emergence of livestock sector as an important segment of the Agricultural ecosystem in India. He had reviewed the growth of livestock sector through the period of 1970 – 1993. He has reviewed 29 research papers published in IJAE relating to dairying and livestock sector focusing on the structure of Indian bovine population and its regional dimensions. The review covers crop and livestock interactions, cattle size and composition, resource productivity, technology market behaviour, income and employment opportunity and feed and fodder.

Upton Martin in his research paper '*The Role of Livestock in Economic Development and Poverty Reduction*' in Pro-Poor Livestock policy initiative analyzes the development of world trade in livestock and livestock derived products with a focus on developing countries of Asia. He also summarizes the overall trend that was observed among the expanding markets in becoming net importers of livestock due to the growing demand for the products. He has discussed about the trend comparative advantage developed by certain countries in Asia and

how they have gained through the overall trade liberalization. The paper uses secondary research using the FAO database (FAOSTAT 1996, 2003).

The need to study the livestock sector in India using the latest data that was published in the livestock census of 2019 will be a guide to understand if the growth in the sector has been in line with the expectations.

Research Objective

The objective of this research is to have a critical bird-eye view of the Indian Livestock Sector in conjugation with the livestock census of 2019. The research will focus on the following aspects of livestock sector:

- The growth in absolute number in different livestock category in India
- The increased volume and value of products that are produced from Livestock
- The export growth of livestock sector
- The government policies and initiatives that has had a significant impact on livestock sector

The study is envisioned to fill the lacunae in our understanding with a comprehension of the livestock census of 2019. Most of the studies that are published till recently are pertaining to the 2012 livestock census and since the last 8 years many initiatives have been taken up by various ministries to improve the self-reliance of Indian Livestock sector the results will definitely be pronounced in the latest survey. For the study we will be utilizing the published data available in various government of India such as the Livestock census 2019, Animal husbandry statistics 2019, FOA statistics, Ministry of agriculture and National statistical survey database.

Research Methodology

Using various secondary sources such as Livestock census 2019, Animal Husbandry statistics etc., this study proposes to use some cross tabulation, graphical analysis as well as regression techniques to analyze the production and productivity of livestock sector in India in the recent years.

Trade data will be primarily used from the Trademap database and will be analysed using SPSS statistics analyzing software.

Data Source:

- Livestock census 2019
- Animal husbandry statistics 2019
- FOA statistics
- Trademap
- Ministry of agriculture
- National statistical survey database

Tentative Sections of the Thesis

The final thesis will have the following sections

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- Research Objective
- Abstract
- Introduction
- Trends in Livestock population in India as of 2019
- Livestock sector as a driver for income growth
- Livestock products and nutritional value
- Export of livestock from India
- Government policies in livestock sector
- Conclusion
- References

References

- George. P. S. (1996) Dairying and Livestock Economy of India - A Review. *Indian Journal of Agriculture Economics*, Vol 51, Nos. 1 & 2, Jan- Jun 1996.
- Pratap. S. B. Economic Contribution of Livestock subsector in India.
- Dikshit A.K. and Birthal P. S. (2010) India's livestock feed demand: Estimates and Projections. *Agricultural Economics Research Review*, Vol 23, January – June 2010, pg. 15-28.

- Mishra. S. N. (1995) India's Livestock Economy: A perspective on Research. *Indian Journal of Agricultural Economics*. Vol 50, No. 3 July – Sept 1995.
- Thornton. P. K. (2010) Livestock production: recent trends, future prospects. *Philosophical Transactions of the Royal Society*, B. 2010, 365, 2853-2867.
- Sonavale. K.P. Shaikh. M. R. Kadam. M. M. Pokharkar. V. G. (2020) Livestock Sector in India: A critical Analysis. *Asian Journal of Agricultural Extension, Economics and Sociology*. 38(1): 51-62, 2020.
- Herrero. M. Grace. D. Njuki. J. Johnson. N. Enahoro. D. Silvestri. S. Rufino. M. C. (2013) Role of Livestock in Developing Countries. *Animal* (2013), 7:s1, pp 3-18.
- Upton. M. The Role of Livestock in Economic Development and Poverty Reduction. *The Pro-poor livestock policy initiative*.