



Contribution of Livestock in the Country Economy

*Dr. Michelle C. Lallawmkimi¹, Ajay Baldaniya² and Dr. Sunil Adangale³

¹Senior Scientist & Head, Krishi Vigyan Kendra (KVK), Kolasib, Department of Agriculture, Government of Mizoram, India

²Department of Entomology, Anand Agricultural University, Anand, Gujarat

³Asst. Prof., Animal Husbandry and Dairy Science, ATIC, MPKV, Rahuri, Maharashtra

*Corresponding Author's email: michellelawmkimi1234@gmail.com

Livestock production plays a critical role in food security, providing a substantial source of protein, essential nutrients, and livelihoods for millions of people worldwide. In many developing countries, livestock is a key asset for rural communities, contributing to food diversity and the safety net during times of economic hardship (Chisoro *et al.*, 2023). The demand for animal-based products, including meat, dairy, and eggs, has increased dramatically in tandem with the world's population growth, putting a great deal of strain on agricultural systems. But the With rising temperatures, changed precipitation patterns, and an increase in the frequency of extreme weather events, the viability of livestock-based food systems is under jeopardy in this era of climate change. Because livestock may experience heat stress, lower-quality feed, and a rise in disease prevalence, these changes may result in lower productivity. As a result, this impacts the supply of animal products, endangering the food security of communities that mostly depend on these food sources. Additionally, the livestock sector is also one of the major contributors to greenhouse gas (GHG) emissions, which exacerbate climate change and further jeopardize food security. The relationship between livestock production and climate change creates a feedback loop that complicates efforts to achieve food security. Vulnerable communities, especially those in developing nations, may find it increasingly difficult to secure sufficient and nutritious food; this widens existing inequalities. Hence, prioritizing sustainability in livestock production is crucial for nutritional and livelihood security and long-term environmental, societal, and animal well-being (Jose *et al.*, 2016). However, raising cattle to satisfy rising demand may result in higher GHG emissions, which then add to the carbon footprint and its related effects on the ecosystem and food production. This cycle emphasizes the necessity of carbon-neutral and sustainable livestock management techniques to guarantee climate-smart livestock operations from farm to table. Sustainable livestock farming aims to promote long-term resilience and resource efficiency while reducing negative effects on ecosystems, animal welfare, and human health. Products from livestock are powerful tools for preventing malnutrition, creating jobs, and producing foreign exchange. In an effort to reduce malnutrition among the most vulnerable segments of society, the Indian government recently suggested include milk and eggs in its flagship National Nutrition Mission and Midday Meal programs. Increasing the output of milk, meat, and eggs has also been identified as one of the methods for tripling farmers' earnings. A key objective of production is to achieve growth in the long run accompanied by minimal volatility. Although India has come a long way from being a net importer of livestock commodities to being their net exporter, their national demand is estimated to outpace their annual production (Saxena *et al.*, 2019), leading to a rise in their prices. The rising price of milk has already been identified as a major contributor to food price inflation within the country.

Contribution of livestock to people

Food: The livestock provides food items such as Milk, Meat and Eggs for human consumption. India is number one milk producer in the world. It is producing about 230.58 million tonnes during 2022-23. The per-capita availability of milk is 459 grams per day. Similarly it is producing about 138.38 billion numbers eggs and 9.77 million tonnes of meat in a year. The per-capita availability of egg is 101 eggs per annum. The total fish production in India is estimated at 175.45 lakh tonnes.

Fibre and skins: The production of wool, hair, hides, and pelts is also aided by the livestock. The most significant product with the greatest potential for export is leather. Approximately 33.61 million kg of wool are produced in India.

Draft: The foundation of Indian agriculture is the bullock. Indian farmers, particularly those in rural areas, continue to rely on bullocks for a variety of agricultural tasks despite significant developments in the use of mechanical power in agricultural operations. Fuel, an essential component for employing mechanical power devices like tractors, combine harvesters, etc., is greatly reduced by the bullocks. In addition to bullocks, pack animals like as camels, horses, donkeys, ponies, mules, etc. are widely utilized to transport products throughout the nation. Mules and ponies are the sole options for moving cargo in places like mountainous terrain. Likewise, the army must rely on these animals to carry a variety of goods in high-altitude regions.

Storage: Because of their propensity to disappear in an emergency, livestock are referred to as "moving banks." They act as capital, and for many landless agricultural laborers, they are their only source of capital. In addition to being an asset, livestock act as collateral for loans from neighborhood lenders, such as moneylenders in rural areas, in times of need.

Cultural: Livestock offer security to the owners and also add to their self-esteem especially when they are owning prized animals such as pedigreed bulls, dogs and high yielding cows/ buffaloes etc.

Sports / recreation: People also use the animals like cocks, rams, bulls etc. for competition and sports. Despite ban on these animal competitions the cock fights, ram fights and bull fights (jalli kattu) are quite common during festive seasons.

Companion animals: Dogs are known for their faithfulness and are being used as companions since time immemorial. When the nuclear families are increasing in number and the old parents are forced to lead solitary life the dogs, cats are providing the needed company to the latter thus making them lead a comfortable life.

Role of livestock in farmers' economy

Farmers' economies depend heavily on their cattle. Indian farmers practice mixed farming, which combines crops and livestock and allows for resource efficiency by using the output of one business as an input for another. Farmers benefit from the cattle in a variety of ways.

Income: Livestock is a source of subsidiary income for many families in India especially the resource poor who maintain few heads of animals. Cows and buffaloes if in milk will provide regular income to the livestock farmers through sale of milk. Animals like sheep and goat serve as sources of income during emergencies to meet exigencies like marriages, treatment of sick persons, children education, repair of houses etc. The animals also serve as moving banks and assets which provide economic security to the owners.

Employment: Many of India's less educated and unskilled citizens rely on agriculture as their primary source of income. However, due to its seasonal nature, agriculture could only employ people for 180 days out of the year. During the lean agricultural season, the landless and those with less land rely on cattle to use their labor.

Food: The livestock products such as milk, meat and eggs are an important source of animal protein to the members of the livestock owners. The per capita availability of milk is around 459 g / day; eggs is 101 / annum during 2022-23.

Social security: The animals offer social security to the owners in terms of their status in the society. The families especially the landless which own animals are better placed than those

who do not. Gifting of animals during marriages is a very common phenomenon in different parts of the country. Rearing of animals is a part of the Indian culture. Animals are used for various socio religious functions. Cows for house warming ceremonies; rams, bucks and chicken for sacrifice during festive seasons; Bulls and Cows are worshipped during various religious functions. Many owners develop attachment to their animals.

Draft : The bullocks are the back bone of Indian agriculture. The farmers especially the marginal and small depend upon bullocks for ploughing, carting and transport of both inputs and outputs.

Table 1: Livestock population (20th Livestock census)

S.No.	Species	Number (in millions)	Ranking in the world population
1	Cattle	192.49	Second
2	Buffaloes	109.85	First
Total (including Mithun and Yak)		302.79	First
3	Sheep	74.26	Third
4	Goats	148.88	Second
5	Pigs	9.06	-
6	Others	0.91	-
Total livestock		535.78	
Total poultry		851.81	Seventh
7	Duck	-	
8	Chicken	-	Fifth
9	Camel	0.25	Tenth

Table 2: Glimpse of Major Livestock Products

Items	2022-23	2023-24	Year on Year Growth
Milk Production (Million tonnes)	230.58	239.30	3.78%
Meat Production (Million tonnes)	9.77	10.25	4.95%
Egg Production (billion nos)	138.38	142.77	3.17%
Wool Production (Million kg)	33.61	33.69	0.22%
Per Capita Milk (gm/day)	459	471	2.61%
Per Capita Egg (number per annum)	101	103	0.98%

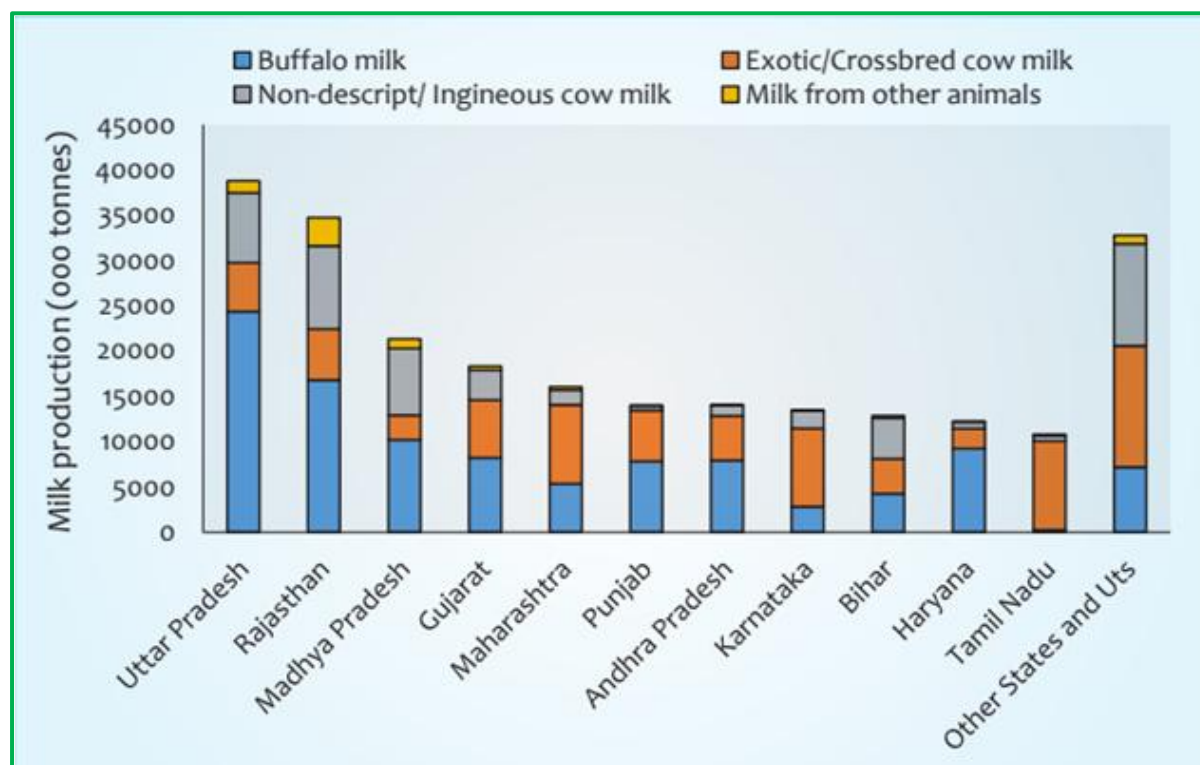
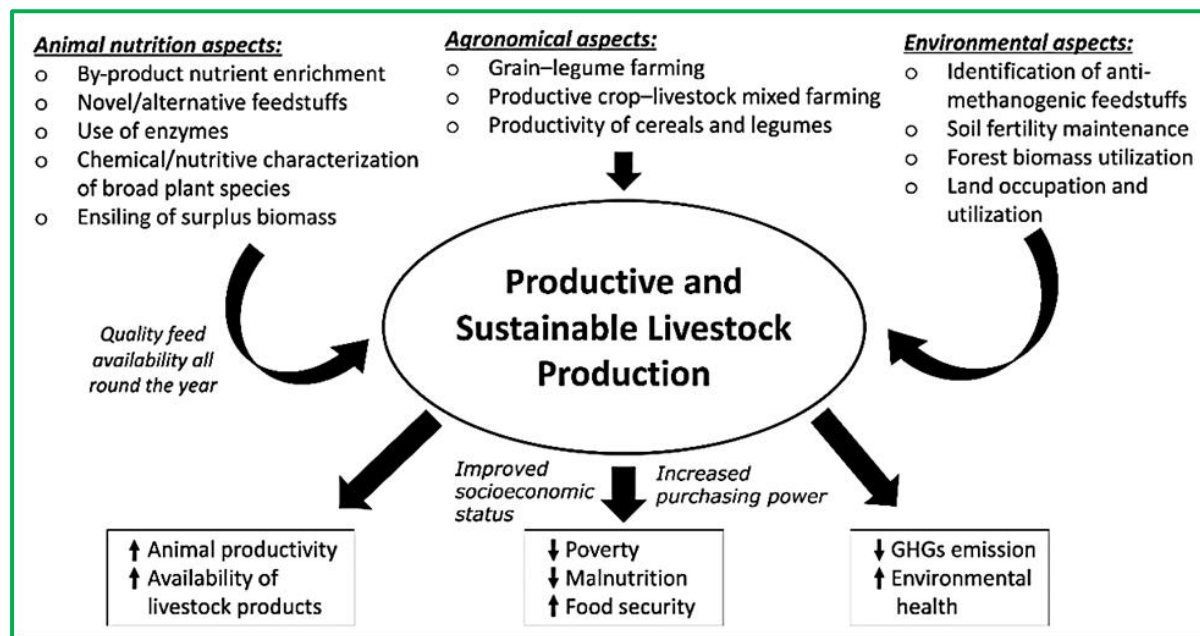
Conclusion

Livestock are an integral component of agriculture in India and make multifaceted contributions to the growth and development of the agricultural sector. Livestock help improve food and nutritional security by providing nutrient-rich food products, generate income and employment and act as a cushion against crop failure, provide draught power and manure inputs to the crop subsector, and contribute to foreign exchange through exports. The contribution of agriculture and animal husbandry in national GDP is equal. Also, India is the leading country in total milk production. About 30.5 million people depend upon livestock for their livelihood. Livestock contributes 26% to the income of small farm households as against an average of 24% for all rural households. Livestock provides livelihood to two-third of rural community. It also provides employment to about 18.8 % of the population in India. India has vast livestock resources. Livestock sector contributes 4.11% to the GDP and 25.6% to total Agriculture GDP.

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Milk production and its composition across states during 2023-24