



Sustainable Meat Value Chain and Enhanced Farmers' Income

Issue No. 3/ June 2023

Introduction

India has vast livestock resources numbering 536.76 million in total. The livestock sector contributed 6.2% to the total gross value added (GVA) and 30.9% to the agriculture and allied sector's GVA during 2020-21. About 20.5 million people depend upon livestock for their livelihood, and this sector provides employment to about 8.8% of the population. During 2020-21, this sector has grown at the rate of 7.9%, and is ahead among all sub-sectors of agriculture. Although India is the largest milk and buffalo meat producer and the second largest goat meat producer, yet there are concerns like lower productivity due to non-availability of pure, superior indigenous germ plasm, shortage of dry fodder, concentrates and green fodder, poor animal health services and disease outbreaks, and so on. During 2020-21, the total meat production in the country was 8.6 million tons. Towards 2050, it is expected that the population in India would increase by 34%. In order to fulfil the dietary recommended levels of the livestock products by the Indian Council for Medical Research (ICMR) for a population of 1.7 billion people, the livestock sector should produce 186.2 million tons of milk, 18.7 million tons of meat and 306 billion eggs per annum.

In this background, the current study published under 'Research and Policy series' outlines the present state of the livestock sector and describes the constraints faced by it in terms of production and input supply. The paper goes on to examine the role played by various actors involved in the meat production and processing, as well as how technology induction and extension services can aid in realising the sector's potential. The study also deliberates how meat industry can have a significant impact on increasing farmers' income and concludes by examining areas for future research and policy interventions, along with making recommendations to promote further growth in the sector.

Major Findings

1. Water buffaloes have emerged as a quadruple function animal, owing to their contribution in milk, meat, draught, and leather industry. Within the livestock sector, the Indian water buffalo contributes roughly around ₹3,10,531 crore, which is 27.9% of the total livestock sector output.
2. The buffaloes in India belong to indigenous germplasm and most of the animals are Murrah or Murrah type (44.4%). India being the world's highest

milk producer, its availability is limited owing to various factors. One of the major challenges is the adoption rate of artificial insemination (AI), which is still only 24.5% of the full adoption potential.

3. The sheep and goat sector has contributed ₹89,768 crore to the country's GVA during 2020-21, and has the potential to contribute over ₹1,50,000 crore. Landholdings in general have a negative association with sheep and goat rearing. The development of the goat sector alone has the potential to impact the livelihoods of 20 million goat rearers (NSSO, 2013), belonging to resource poor and socially backward segments of the society living in ecologically vulnerable areas.
4. Diseases in goats result in mortality, which ranges from 5% to 25% in adults and 10% to 40% in kids. India has world's lowest yield for goats (<10.0 kg carcass weight) due to endemic diseases (FMD, PPR and Blue Tongue) and poor access to preventive and curative health care resulting in 15-40% mortality.
5. A major chunk of the sheep and goat meat in India is produced in local slaughter houses, which are in very poor condition and lack basic facilities resulting in improper disposal of inedible offal and liquid waste. Organised slaughtering in sheep and goat sector will improve the returns to farmers. Sale of fresh meat may yield a 4-5% margin, however, processing into value added meat products will result in 15-20% profit margin for meat processors. It has been estimated that about 7-15% of the gross income comes from by-products utilisation by meat processors.
6. Food and feeds contribute almost 60-70% of the overall recurring expenditure in livestock farming. Presently, the country faces a net shortfall of 35.6% green fodder, 10.5% dry crop leftovers, and 44% concentrate feed ingredients. By 2025, the deficit in green fodder and dry fodder will be 65% and 25%, respectively. Only 5% of the cropped area is utilised for fodder production.
7. Livelihood and revenue generation is possible through export of buffalo meat from unproductive culled animals. Effective culling of these unproductive buffaloes will help to reduce greenhouse gases (GHG) emissions to the extent of 59 billion kg CO₂ eq, assuming roughly 10% of (110 million) buffaloes getting slaughtered each year.
8. There is an increased willingness of consumers to try chilled and frozen products. It is expected that with rapid urbanisation across the country, wet meat



markets will shrink and sale of fresh meat will be confined to niche markets. The online meat market in India has been growing rapidly and has been the strongest in recent years. With rising protein consumption in the country, this category is bound to grow by at least 25% in the foreseeable future.

9. The number of households rearing sheep and goats has declined by 41.9% and 19.1%, respectively, between 2012 and 2019 (Department of Animal Husbandry and Dairy, GOI, 2022). Similarly, the number of households rearing buffaloes have come down from 3.91 crore to 3.40 crore, resulting in 13.2% decline. On the contrary, buffalo, sheep and goat population has increased by 1%, 14.1% and 10.1%, respectively, during the same period. This suggests changes in the value chain dynamics, and this disparity may be due to many entrepreneurs and startups who ventured into sheep and goat rearing through medium and large-scale business replacing small scale farmers.

Policy Implications

1. The animal preservation acts may be streamlined to promote scientific practices of animal meat production. Also, rejuvenate the scheme on salvaging and rearing of male buffalo steers for meat production and implementation of integrated and inclusive contract farming system for buffalo meat production and promoting export for better earnings for farmers.
2. Breed associations may be formed by involving farmers for improvement of indigenous breeds of various species. Further, identification and registration of animals having good genetic potential must be promoted by providing financial, technical, and organisational assistance. A breeding policy should be followed with marker assisted or gene assisted selection, where yield and product quality are taken into consideration for consistent and uniform quality with health benefits to the consumers.
3. There is a need for restructuring the land use strategy to elevate the overall percentage of cultivable lands for fodder production to not less than 10%.
4. One of the major inedible by-products during the slaughter of goats and sheep i.e hide/skin, which had a greater demand in the past, is currently unutilised or under-utilised due to lack of market demand. Hence, efforts should be directed to utilise the skin for preparing high value products such as collagen

powder, collagen sheets, gelatine, pet foods, etc., for increasing profit margins.

5. Livestock sector does not come under the ambit of regulatory framework for marketing, resulting in no proper database for livestock arrivals, prices and no proper mechanism for price discovery through auction, etc. Absence of appropriate market infrastructure, lack of standards and standard operating procedures (SoPs) result in high transaction losses due to too many intermediaries.
6. In order to assure quality of our food products, prevent economic, and trade impediments, it is necessary to execute a proper traceability system in place. Information Network for Animal Productivity and Health (INAPH), which is general record of activities of animal identification, traceability, milk recordings, health care for dairy animals, would be more useful if it is integrated with the buffalo meat sector and export data, so that traceability can be maintained in the buffalo meat value chain.
7. Despite the fact that pollutants of the meat industry are of bio-degradable nature, their management is essential to prevent public health risks, meet the regulations and provide a positive image to the sector. Appropriate technology suitable for small and medium category, namely, biomethanation, bio-briquettes and composting, need to be standardised for disposal of waste in an economically viable manner and for generating wealth through utilisation of waste.
8. Lack of good quality breeding stock is a major constraint in commercialisation of goat production. The farms managed on scientific lines should be encouraged to become the centres of production of superior quality breeding animals.
9. Provision of funds and access to credit are essential. There is also a need for encouraging livestock co-operatives and SHG models at the village and block level which can effectively obtain funds, clearances and permissions from regulatory bodies and government agencies as compared to individual entrepreneurs.
10. National policy may be required for providing insurance to small and large ruminants and promoting index-based livestock insurance.
11. There is need to carry out quantitative and qualitative gender and social inclusion analysis in livestock production to understand all gender roles, and impact of increased investment on women and marginal communities.