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Meat Industry in Maharashtra: Status, Challenges and Opportunities

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India has the largest livestock population throughout the country. Livestock sector is a vital component of Indian economy as well as plays an important role in the state's economy. In the recent decade, demand for various livestock-based meat and meat products has increased significantly due to increase in per capita income, urbanization, preferences and increased awareness about food nutrition. Livestock acts as a source of protein in the form of meat and eggs. Meat sector plays a crucial role in Maharashtra as it not only provides meat and by-products for human consumption but also contributes towards sustainable livestock development and livelihood security for millions of men and women from weaker sections engaged in meat and allied industries.

Present status of meat industry in Maharashtra

According to 20th livestock census the total number of livestock population is 33.1 million, cattle 13.9 million, buffalo 5.6 million, sheep 2.7 million, goat 10.60 million, poultry 74.3 million in Maharashtra in 2019 (Government of India, 2019). They provide meat, hide and skins and other valuable by-products thereby significantly contributing to sustainable human nutrition and economy of the state and nation. India contributes 3% of world meat production. Maharashtra is the second largest share in total meat production in India and contributes about 12.6 % in total meat production in India. Maharashtra exports 306,978.00 metric tonne of buffalo meat to the world for worth Rs. 6,626.81 Crore and 1,558.44 metric tonne of sheep and goat meat to the world for worth Rs. 77.48 crore in 2020-21. Maharashtra exported 11,777.60 metric tonne of poultry products of Rs 47.90 crore and 210.89 metric tonne of processed meat of Rs .8.59 crore in 2019-2020 (APEDA, 2021). The export of buffalo meat is maximum. The total

value added from livestock industry across Maharashtra amounted to over 492 billion Indian rupees in the fiscal year 2018. Number of calves born and institutional credit to agriculture and allied sectors lead to significant and positive impacts on growth of meat production (Gawali, 2016).

Among Indian states, Uttar Pradesh is the major exporter of buffalo meat, followed by Punjab and Maharashtra. Most of the people purchase meat from traditional meat shops, where butchers slaughter very few meat animals for sale of meat throughout the day. The fast-food restaurants of meat products help the growth of meat industry in the state. In Maharashtra there is also Agricultural and Processed Food Products Export Development Authority (APEDA) approved registered meat abattoir. Some of these plants have both abattoir and meat processing facilities while some are only meat processor and they procure meat from registered abattoirs. Many private companies are involved in processing poultry products. Out of the total meat produced in Maharashtra very little meat is processed and the remaining meat is sold in fresh or frozen form. Meat from small ruminants, namely, sheep and goat are also used for production of traditional products such as Kebabs and kheema.

Goats and sheep constitute very important species of livestock, mainly due to their short generation intervals, higher rates of prolificacy and their products can be easily marketed. The market demand for mutton and chevon and their products is available throughout the year and there is negligible variation in prices obtained. Approximately 1 lakh families are depending upon sheep-rearing occupation. In Maharashtra Sheep rearing is done in dry climatic districts such as Pune, Satara, Solapur, Sangli, Kolhapur, Ahmednagar, Nasik, Dhule, Jalgaon, Aurangabad, Jalna, Beed, Latur, Nanded, Osmanabad, Buldhana and Chandrapur. In goat rearing, approximately 48 lakh families are involved. Goat and sheep rearing is carried out by weaker sections of the society. Major Export Destinations of sheep/goat meat is Saudi Arabia, UAE, Qatar, Germany, Oman (AHD, 2021). The poultry industry is concentrated in certain parts of the country. The leading states in the country are Andhra Pradesh, Telangana and Tamil Nadu followed by Maharashtra, Punjab and West Bengal. In the State of Maharashtra, there is tremendous growth in poultry sector during the last 3-4 decades. Total backyard poultry production increased by 26.31 % in 2019. During the year 2018-19 egg production was worth approximately 596 crores. Maharashtra state has a share of 5.77% of total egg production in India. There is more scope for poultry farming in the state (AHD, 2021).

Challenges of meat industry in Maharashtra

Although of huge potential in Maharashtra, meat sector still has several challenges ahead. There is inadequate infrastructure for hygienic slaughter of animals. In Maharashtra meat production is carried out mostly in unorganized way i.e. retail meat shops. Chicken, goat/sheep meat and buffalo meat are marketed in the retail meat shops in which most of the cutting of meat is carried out in small parts, butchers do not wash the carcasses properly and use wooden block for making cuts of meat. The slaughtered fresh meat is sold in unhygienic retail shops/outlets exposing meat to dust leading to

contamination of meat. Meat produced by unhygienic and unsanitary conditions of the slaughterhouses and unorganized retail shops leads to chances of contamination of meat and meat products and there is great risk of getting cases of food borne illness (Kumar *et al.*, 2018). There is a need to have better facility for hygienic, wholesome and safe meat production to reduce the chances of meat contamination and spoilage hence decrease disease outbreaks in the population. There is a great need for mass education and mass awareness in the public about the production, processing and availability of clean, hygienic and safe meat. Because of the unorganized nature of the meat sector small meat entrepreneurs are not getting good price for selling of meat. Also, development of adequate market infrastructure with basic requirement facilities is must for marketing of meat and meat products. Per animal productivity is low which is leading to low carcass yields because of lack of proper feeding during appropriate growth phase of animals. Furthermore, many farmers selling meat animals especially lambs and kids face economic loss and to overcome this, adult meat animals should be sold into the market. Lower carcass weight and dressing percentage of food animals due to the slaughter of spent or aged animals is another challenge in front of the meat industry. Most of the consumers prefer fresh meat, resulting in less demand for frozen and processed meat.

Many diseases outbreaks in the animals are a major concern of non availability of good quality livestock in the open market hence proper vaccination, biosecurity and preventive and control measures should be taken. Overcrowding and unavailability of proper transportation facility of food animals during transport results in inferior quality of meat production. There is inadequate or absence of cold chain meat transporting facility and infrastructure at small meat and meat products market area. Meat is a nutrient rich food which makes it a perishable commodity. To improve keeping quality of meat, cold chain is of critical importance during transport as well as storage till it reaches to consumers. There is lack of skilled and well-trained butchers for slaughtering of animals. Majority of meat animal handlers, butchers lack the awareness about good hygienic practices, personal and meat plant hygiene, meat borne zoonotic diseases, health risks, the concept of clean meat production, proper handling and transportation of carcasses and meat. Effective awareness training programme about hygiene and scientific slaughter of animals is required among the butchers. All the stakeholders need to be convinced for the importance of meat sector development with appropriate infrastructure facilities for effective utilization of meat animal resources.

In Maharashtra majority of slaughter house waste consists of portions of a slaughtered animal that cannot be sold as meat or used in meat-products. Such waste includes skin, tendons, bones, contents of the gastro-intestinal tract, blood and internal organs. Many slaughter house waste management system is very poor and several measures are needed for effective management of wastes generated from slaughter houses. The slaughter house by-products and waste utilization into wealth is less. For the profitability of meat industry, proficient utilization of meat by-products is important. Livestock markets are unorganized and are mostly weekly market. In domestic market, selling, eating and working in the meat industry is still a

taboo. Investments in meat industries remain very low, as compared to other industries. Infrastructure, modern technologies and skill development remain lacking in the industry.

The new legislation about slaughter of animals and ban of cattle slaughter also affected meat trade in the state of Maharashtra. A number of research and development programmes with rational practical based policy approaches are required for development of organized meat sector. Many slaughterhouses do not follow the standard guidelines prescribed by Food Safety and Standards Authority of India, Good Manufacturing Practices, Hazard Analysis and Critical Control Point and ISO-9000 standards to ensure the safety of consumers. Although Maharashtra is a hub for buffalo meat and poultry meat industry but there is need to develop more modern, good potential and all facilities acquainted, scientifically designed meat abattoirs. There is also a need for establishment of effluent treatment plants for wastewater treatment originated from abattoir and lairage (Gadekar and Shinde, 2014).

Opportunities of meat industry in Maharashtra

Meat industry of Maharashtra has a very big potential. This sector in Maharashtra has a lot of growth opportunity and attracts foreign direct investments to explore both local and global opportunities. There is need for focusing on global market and there is much scope for modern meat and poultry processing and egg powder plants to attract investment from global investors. Maharashtra has 74.3 million of poultry which shares 15% poultry meat production of India. There is opportunity to introduce new technologies in meat and poultry processing. Processing of meat to different value added products will provide reasonable returns from different meat animals to the farmers. There is much opportunity for micro and medium entrepreneurs, small stakeholders for development of value addition and varieties of value-added meat products such as sausages, smoked mutton hams, chicken curves, chicken and mutton bites, biryani, chicken soup, chicken samosa, pickle etc. Global demand for consumption of meat and meat products continue to rise widely. Poultry sector growth can be much higher. Meat and chicken products being easily procurable and at reasonable cost, increases consumers demand for chicken products like chicken nuggets, patties, spring rolls, chicken tit bits, sausages, salami and meat balls. Meat entrepreneurs can improve their economy by utilizing meat from spent animals and birds and by processing methodologies for improving palatability and quality attributes of spent animals. To develop meat industry potential, it is also required to expand geographical footprint in different parts in the state. Pork production in India and Maharashtra is limited. Production is concentrated mainly in north-eastern corner of the country hence the people in the Maharashtra have more opportunities in pig production and processed pork products. Pig rearing has high potential to contribute to more economic gain for small, marginal farmers of the society.

One of the possible diversifications for the meat market to look at is the organic meats. It is an almost non-existent segment in India and also in Maharashtra but has a huge potential of growth. Raising male buffalo calves for meat production and increasing

awareness among people for wholesome food leads to increased demand for hygienically processed and packed meat and meat products. Due to increased income of people, purchasing power of young population and changing consumption patterns of the people of society, there is much demand for ready to eat meat products. There are many opportunities for private entrepreneurs for establishing meat-based industries and also, utilization of offal for pet food formulation. Now a days there is increased employment opportunities in meat and allied sectors.

Meat entrepreneurs have more opportunity in the development and evaluation of simple technologies such as for blood utilization and fibrin extraction, isolation of antioxidant/anti-microbial bio active peptides from lung, liver and blood. Grading system which predicts the carcass yield and meat quality can be used as a tool for assessing the value of animals/carcasses. The need for developing a grading system is a must in the future to promote meat industry. Cost effective kits to identify/ quantify microbial and chemical contaminants and meat species identification need to be developed. Development of traceability models for different livestock for both domestic and export meat sector is required. Development of functional foods, use of natural ingredients, high pressure technology, development of shelf stable products, active/smart packaging and quality evaluation and preservation of traditional meat products are some of the areas which need to be undertaken in the coming years (ICAR-NRC 2015). Also, lot of opportunities are available in the establishment of modern abattoirs which are registered with Agricultural and Processed Food Products Export Development Authority. Such abattoirs are acquainted with world class facility of sanitary and phytosanitary measures fulfilling compulsory criteria of Hazard Analysis Critical Control Point and ISO certification.

Conclusion

Maharashtra has a good potential for meat production because of large livestock population. Meat sector plays an important role in Maharashtra as it not only provides meat and by-products for human consumption but also contributes towards sustainable livestock development and livelihood security for millions of people. There are many challenges in front of meat industries. Measures should be taken to increase the meat production efficiency of different species of animals using modernization of abattoirs, setting up of rural abattoirs and registration of all slaughter houses. There is a need for training programmes for meat workers regarding hygiene and sanitation to be organized regularly. Maharashtra has a lot of growth opportunity in different species of meat production as well as processing of meat and attracting foreign direct investment to explore both local and global opportunities.

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