

Contribution of Animal husbandry to Indian

Economy, its characteristics and future: A review

Livestock and Dairy sector contribution in Indian Economy, its characteristics and future: A review

ABSTRACT

Livestock have played an indispensable role in the Indian economy. Animal husbandry is culturally and economically integrated into the society. Livestock are a source of protein, livelihood and draught power. Diverse enterprises like Apiculture, Sericulture and Pisciculture have been reared traditionally for many years. Indigenous stock have higher resistant to diseases and can better adapt to climate change. They act as buffer to crop failure and sudden monetary losses. A rearing a wide variety of animals like yaks, camels and Mithun apart from cattle, sheep and goat are unique characteristics of animal husbandry in India. Technological backwardness, financial constraints and inadequate veterinary services are few issues that hinder the progress in the sector.

Key words: Animal husbandry, Indian economy, Poultry, livestock.

INTRODUCTION

Indian livestock sector is one of the largest in the world with holdings of 11.6 percent of the world (BAHS, 2014). India is an agrarian economy and farmers are known as the backbone of the economy. Animal husbandry is the backbone in the economy of these farmers, by bringing an additional and steady income. Growth rate of livestock sector has been steady and is around 4-5 percent despite receiving less investment compared to manufacturing and service sectors (Ali, 2007). Share of livestock sector in the total value of output of agricultural sector from 28.2 percent to 30.1 percent during 2004-05 to 2012-13 (CSO, 2014). There is significant inverse relationship between poverty and value of livestock output. The states with higher livestock share have low level of poverty and vice versa (Ali, 2007). India has around 65.07 million sheep, 135.2 million goats and 10.3 million pigs as per 19th livestock census (DAHD report, 2017-18). Livestock acts as a storehouse of capital insurance against crop production risks and a coping mechanism against livelihood shocks as well as a vital

source of dietary protein (Rao and Hall, 2003). Protein malnutrition in children has reduced in India with the increasing availability of egg and milk. Traditionally specific tribes or societies are known with specific animals as their source of livelihood such as, Raikas and Camels, Gujjar and Sheep, Brokpa and Yak. India ranks first in the world milk production with annual production of 132.4 million which contributes about 16 percent to the world milk production (BAHS, 2014).

Changes in livelihood pattern of young Brokpa if not taken seriously then the conservation of Yak related bio-cultural diversity is at stake (Singh et al., 2018). Livestock is considered a sign of wealth as the farmers who own livestock are found to be economically better than farmers without livestock. Animal husbandry was found to be the most attractive and remunerative activity for Antodaya beneficiaries. Livestock provides livelihood to million with little access to land (Kumar et al., 2008). Few of the many ways in which animal husbandry contributes to Indian economy are discussed in following passages.

Poverty alleviation and Employment generation

16.44 million workers as per usual status (principal status and subsidiaries status) were engaged in activities of farming animals, mixed farming, fishing and aqua culture (NSSO, 2012). Livestock provides livelihood to landless labourers and marginal farmers which own bulk of livestock. Around 70 percent of the population living in rural areas depend on agriculture and allied activities for livelihood hence there is a need for subsidiary occupation like poultry keeping, sheep and goat rearing (Saheba, 2007). Farmer's suicides are a worrisome social issue for India today and is largely being blamed on drought blamed on drought processing. It is reported that livestock seems to have an influence in overcoming the severity of suicidal trend among the Indian farmers up to 79 percent (Mishra, 2008).

Minimum availability of land for feed and fodder is an important determinant of size of livestock holding. Given the resources with the land scarce households, the utility of livestock as provider of livelihood opportunities is far greater for them (Birthal and Ali, 2005). Goat and sheep are known as the poor man's cow or bank on hooves which survive with least resources. Even in the 21st century draught power provided by oxen, male buffaloes, ponies or mules are cheap modes of transport for the poor farmers. 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 (Birthal and Rao, 2002).

59 **Women empowerment**

60 When the women are empowered the society is empowered and the financial independence is very
 61 important for empowerment. Growing rural to urban migration by men, there is 'feminisation' of
 62 agriculture sector, with increasing number of women in multiple roles as cultivators, entrepreneurs,
 63 and labourers. With women predominant at all levels of production, pre-harvest, post-harvest
 64 processing, packaging and marketing of the agricultural value chain, to increase productivity in
 65 agriculture, it is imperative to adopt gender specific interventions (Economic Survey, 2018). The rural
 66 women play a significant role in rearing of livestock and are responsible for most of the operations
 67 relating to feeding, breeding, management and health-care of the livestock. The rapidly increasing
 68 demand for livestock products creates opportunities for empowerment of women (Taneja, 2013). The
 69 major share of the credit for India's position as largest milk producing country in the world and
 70 significant increase in the per capita availability of milk in the country has to go to the largely illiterate
 71 rural women dairy farmers (Patel, 1998).

72 **Integrated farming**

73 Generally a form of integrated farming and mixed farming which is livestock rearing alongside crop
 74 cultivation and small herd of goat or sheep is carried out in India. . Most of the goat keepers are either
 75 landless labourers or small and marginal farmers. Thus, the goat is definitely the animal of the
 76 "poorest rural poor" and it is usually looked after by the woman of the house (Nimbkar, 1993). They
 77 provide food and nutritional security to the millions of marginal and small farmers and agricultural
 78 labourers (Singh and Kumar, 2007). Rice-based integrated farming system model developed for
 79 marginal farmers in Tamil Nadu revealed that a net profit of INR 11,755/year from rice- poultry- fish-
 80 mushroom in 0.4 ha area, while in conventional cropping system (CCS) with rice- rice- green
 81 manure/ pulses, a net income of INR 6,334/year was obtained from the same area (Behera et al.,
 82 2012). The integrated farming system generated a net income of Rs. 58,360 and an employment of
 83 573 man days on a small piece of land (1.25 ha), ensuring a high standard of living for small and
 84 marginal farmers (Behera and Mahapatra, 1999). The recycling of animal dung/wastes in fish ponds
 85 for natural fish production is important to sustainable aquaculture and to reduce expenditure on costly
 86 feeds and fertilizers which form more than 50 percent of the total input cost (Dhawan and Kaur, 2002).
 87 Burning of paddy stubs or crop residues has been identified as a source of pollution. Traditionally goat

88 and sheep or livestock have been allowed to graze to consume the crop residue on the farm while
 89 their dropping and urine on the farm prove to be a fertilizer for the next crop.

90 **Diverse Enterprises**

91 Rearing of a wide variety of animals like yaks, camels and Mithun apart from cattle, sheep and goat
 92 are unique characteristics of animal husbandry in India. In the year 2012–2013 total production of
 93 buffalo meat was 3.59 million tonnes (MT) while India produced 1.53 MT of buffalo meat (FAOSTAT,
 94 2012). Backyard poultry known as the zero input enterprise provides income by sale of eggs or meat.
 95 Swine rearing is common in certain parts of our nation and its export potential should be realised. In
 96 high altitude regions yaks provide milk, meat, fur and transport. In hilly areas rabbit farming is a
 97 profitable venture. India has exported 25,780.74 million tonnes (MT) of natural honey to the world for
 98 the worth of Rs. 356.28 crore during the year of 2012-13 (Agrawal, 2014). Indian honey has a good
 99 export market with the use of modern collection, storage, bee keeping equipment, honey processing
 100 plants and bottling technologies the potential export market can be tapped (Agrawal, 2014). Rabbits
 101 need less space and are reared in cages like poultry. The marked rise in rabbit project development
 102 activities in developing countries, observed over the past ten years, may be attributable to the
 103 increased awareness of subsistence rural and peri-urban inhabitants to the potential of small-scale
 104 rabbit production (Lukefahr and Cheeke, 1991). Poultry occupies a crucial place in India and chicken
 105 is the most widely accepted meat in India, free from religious taboos. Many Indian families in urban
 106 areas have begun to accept eggs as a regular supplementary part of their vegetarian diet (Hellin et
 107 al., 2015).

108 **Source of Energy and Manure**

109 India is keen on exploring clean energy production avenues like biogas and thus attention should be
 110 paid on the abundance of dung that is produced as a result of having one of the largest cattle
 111 populations. Biogas technology provides an excellent opportunity for mitigation of green house gases
 112 (GHG) emissions and reducing global warming (Pathak et al., 2009). The work of transforming cow-
 113 dung into economically valued products has not been treated as a matter of significant interest by
 114 economists and analysts of the Indian rural scene (Jeffery et al., 1989). Almost 50 percent of the dung
 115 produced is converted to dung cakes (IPCC, 2006). Traditionally dung are used as fuel as “upla for
 116 cooking” and as manure. But this dried dung cake is a source of environmental pollution and the
 117 same dung, if used to make methane will become cleaner fuel. Huge amount of waste generated from

poultry and livestock farms and their disposal is becoming an issue. Success of schemes like GOBAR- DHAN yojana will help in utilization of dung and farm waste. Following reforms can help increase remuneration from animal husbandry.

Critical reforms needed for growth in the future

Promotion of Marketing and Processing

Milk production during 2015-16 and 2016-17 was 155.5 MT and 165.4 MT respectively showing growth of 6.37 percent (DAHD report, 2017-18). 80 percent of the milk produced is handled by unorganized sector and 20 percent by corporate and private sectors (GOI, 2009). Export of processed meat products in 2017-18 was only 269.66 MT (APEDA, 2017). Women make traditional milk product of ghee and curd which today find a ready market and sell on higher cost as compared to milk can be carried out. Export earnings from livestock products rose from Rs. 1500.93 crores in 2001-02 to 2253.33 crores during 2004-05. Meat and poultry products accounted for 83 percent of total export earnings (Planning Commission, 2006). Indian meat and milk products can be made suitable for international market by manufacturing products like cream, cheese, Greek yogurt, sausages or salami. Food processing with milk and meat companies should be made attractive investment destinations for Make in India initiative and draw Foreign Direct investment. Food processing has been brought under priority sector lending and can also avail tax benefits and subsidized loans benefit of MSME (Micro, Small and Mini Enterprises). The global demand for meat is predicted to rise by more than 55 percent between 1997 and 2020, with meat production reaching 455 million tons by 2050 (Alexandratos and Bruinsma, 2012). Women and farmers in livestock sector need to be educated on utilizing the government initiative of Start up and Stand up India to avail finances for livestock based enterprises. Focus on livestock products and their inclusion in manufacturing sector can improve Indian economy which is already agro and livestock based.

Conservation of indigenous breeds

Global warming and climate change are the burning topics and concern for the whole world. Ambient temperature of the earth is said to rise by 1.5-2⁰C (Celsius) and extreme climatic conditions are being experienced. As a result of climate change occurrence of floods and drought frequencies has increased. The indigenous or native stock have a poor performance relative to highly selected commercial lines but they have the ability to survive in challenging environments (Crawford and Christman, 1992). Promotion of Indigeneous high yieldig cattle that are known for maintaning

performance at higher ambient temperature is the need of time. Research had proved that Indigenous breed like Tharparkar, Gir, Red Sindhi produced the favored A2 variant of β -casein (Mishra *et al.*, 2009). Populations, which consume milk containing high levels of β -casein A2 variant, were found to have lower incidence of cardiovascular disease and type-1 diabetes (Sodhi *et al.*, 2012). Milk with A2 protein is sold at a premium price due to their health benefits. Government schemes like Kamdhenu yojana will help in revival of indigeous germplasm

Improvement in health care system

Landless and marginal farmers have the majority of livestock holdings, which are vital source of income for them. When the animals fall sick they become unproductive and their care becomes a large expense. Veterinary Health Care needs to be accessible and door step treatment should be available since farmers find it difficult and expensive to transport large animals. Animal health services are important in reducing losses due to animal diseases. Technologies for disease control and cure are known but delivery problems exist (Upton, 2004). Certain state governments in India are pursuing a cost recovery approach and are encouraging private practitioners to cope with the financial constraints and to deliver broad and effective animal health and breeding services (Sen and Chander, 2003). The production potential of animals depends crucially on feed quality, genetic potential and animal health services system. On all these counts, India has a poor record. The public sector continues to be the primary provider of veterinary services, and the deteriorating fiscal situation of most state governments is making it extremely difficult to either expand the reach of these services or improve the quality of service delivery (Ahuja *et al.*, 2003).

Digitalization

Any Information and communication technology (ICT) intervention that improves the livelihoods of poor rural families is likely to have significant direct and indirect impacts on enhancing production, marketing and post-harvest activities which, in turn, can contribute further to poverty reduction (CTA, 2006). Under Pashu sanjivani scheme Unique Identification number (UID) is provided to milch animals and the data is uploaded on Information Network on Animal Health and Productivity (INAPH). E- Pashuhaat portal an online portal for connecting farmers and breeds has been developed by the government and works like a online market place for livestock.

“Pashu Poshan” app was launched by a state government. Hortinet app and livestock disease forewarning app have been developed to increase digitalization.

Information and communication technology (ICT) can be seen as contributing to the socio-cultural system of rural areas, with impact on both behaviour and knowledge. It is believed that ICT will become the prime basis for the future economic development of livestock industry and failure to adopt could cause major problems (Sasidhar and Sharma, 2006). Computer based information system called "Animal Health Information System" (AHIS) used by dairy owners provides scientific information on animal health management particularly diseases in the form of text in local language. 85 percent respondents perceived AHIS as very useful, and 15 percent told it is useful to them for decision making. No one felt it as useless (Phand et al., 2013).

Conclusion

Agriculture and animal husbandry have been a part of Indian economy since long. India has one of the largest population of livestock and stands first in milk production. Livestock helps in women empowerment and provides livelihood to many marginal farmers. In Agriculture based economy real development can be achieved only by developing farming community who raise livestock as main component. Poverty alleviation programmes of the government won't be successful until and unless focus of investment of the governmental policies is not agriculture and animal husbandry. India's real development will be achieved only when agro- livestock sector receives highest investment priorities with latest technologies incorporated with traditional knowledge.

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