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CHANGING CHARACTERISTICS OF LIVESTOCK ECONOMY IN HARYANA: A SPATIO-TEMPORAL ANALYSIS

Doctoral Dissertation Abstract (2019)

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Livestock sector, as an economic activity, is producing about 1.4 per cent of the world's gross domestic product (GDP). This sector accounts for 40-60 per cent of GDP of agricultural production in the world. In India, at current prices the overall contribution of livestock sector has been about 4 per cent of GDP during 2012-13. Livestock alone contributes about 26 per cent of the total value of the output in the agriculture of the country. The overall share of animal husbandry, in the GDP of Haryana, at current prices has been about 6.4 per cent during 2014-15. The contribution of this sector, towards the agricultural GDP, is around 36 per cent in the state. However, the significance of livestock economy in Haryana lies beyond economic sphere as well. It plays a very important role in providing food security and animal protein to the people. It supplements the income of farmers and has emerged as a big source of income for the economically weaker sections of the society. Animal husbandry diversifies the rural economy which otherwise revolves around production of crops, their trade and distribution. The characteristics of livestock economy have undergone a drastic change during last four and a half decades. Introduction of the green revolution in mid-sixties led to emphasizing crop produc-

tion by ignoring the traditional livestock rearing. With the introduction of new agricultural technology, the pasturelands have been converted into farmlands. Squeezing pasturelands and changes in cropping pattern have led to modification in the characteristics and composition of livestock. This has led to increase in the proportion of stall-fed animals and reduction in the number of grazing animals. Beside this, during last two decades, economic liberalization and globalization have also influenced the characteristics of livestock economy in terms of introduction of entrepreneurship in livestock rearing. Large-scale commercial poultry production and other such entrepreneurship have become quite common in the rural areas of the state. The present study is a modest attempt to understand the changing characteristics of livestock economy in Haryana from temporal and spatial perspective.

Objectives of the Study

Major objectives of the study are:

- to examine the spatio-temporal changes in the livestock composition and density over last four and a half decades;
- to evaluate the ownership pattern and

structure of livestock across different socio-economic classes of farmers and agro-ecological regions;

- to study the living conditions and availability of fodder and feed for livestock across the agro-ecological regions and
- to study the process of livestock production and marketing in the state of Haryana.

Database and Methodology

The present study is based on secondary as well as primary sources of data. Livestock census data of Haryana, at district level, have been collected for the years, 1966, 1972, 1977, 1982, 1988, 1992, 1997, 2003, 2007 and 2012 from the Department of Animal Husbandry and Dairying, Panchkula, Haryana. The household-level data on the livestock ownership, composition, production, marketing and perception about livestock schemes of the government have been collected through a field survey of eight sample villages in Haryana.

Various indices like Tropical Livestock Units (TLUs), growth rate, livestock density in terms of area (animal land ratio i.e. animals per km²) and in terms of humans (animal-man ratio i.e. animals per thousand persons) have been computed for carrying out analysis in the present study. Since all animal species have different body weights therefore, they cannot be taken as one unit while analyzing livestock composition. Hence, all the domestic animals have been converted into standard animal units (TLUs, known as 'exchange ratio' or conversion factor) for the purpose of comparison.

Major Findings

The animal husbandry in Haryana is

largely oriented towards milk production with specialization in buffalo rearing. The proportion of buffaloes in terms of TLUs has increased over the period 1966-2012. Highest density of buffaloes has been found in north central parts of the study area. Cattle are second largest constituent of livestock in Haryana. However, its population has declined both in terms of absolute number and proportion over the study period. The high density of cattle has been noticed in north-eastern and eastern regions. Poultry birds have emerged as the third largest constituent of livestock in Haryana due to growth of commercial poultry. Poultry farming is mainly concentrated in north-eastern and eastern regions.

Sheep and goats (ovines) constitute only about 3.1 per cent and 1.7 per cent of total TLUs respectively in 1966 and their share declined during next four and half decades. Overall, the average growth rate of ovines has been negative during the study period 1966-2012. The density of ovines is comparatively higher in the districts adjoining Rajasthan in south and south-western Haryana. The proportion of draught animals (namely mules, donkeys and camels) has also experienced a drastic decline during last four and a half decades.

The primary data reveals that the composition and structure of livestock vary across different caste groups, size of land holding and agro-ecological regions. Cow rearing is not popular in the state as only about 42 per cent sample households are rearing cow. It is most prevalent among the upper caste households mostly in western region of the state. Buffalo is commonly reared animal as about 85 per cent households in rural area own this animal. It is commonly reared by upper and intermediary caste farmers. It is least reared by scheduled castes and landless

households. Ovines are mostly domesticated by the scheduled caste and landless households. Piggery farming is being practiced by scheduled castes and landless households. While, poultry birds are mostly owned by intermediary caste farmers.

Animal husbandry has not been a full-time job for most of the people engaged in this sector. Women account for about 56 per cent of family labour input in livestock rearing and they work for longer hours than men. Women do most of the work in dairy farming and thus, feminization of labour in this sector has taken place in Haryana.

The total quantum of milk production in Haryana has increased impressively, from 47 lakhs tones in 1999-2000 to 79 lakhs tones in 2014-15. The largest contribution in milk production in the state is from buffalo (79 per cent) followed by cross-breed cows (11 per cent) and indigenous cows (10 per

cent). Average milk production per household is about 8.7 liters per day. Overall, the milk yield is higher in eastern region. The per capita availability of milk among dairy farmers is 1789 ml. It is highest among small farmers and lowest among landless households.

The degree of commercialization of dairy farming is quite high in Haryana. About 85 per cent rural households of Haryana either sell milk or ghee. The commercialization level is lowest among the scheduled castes and landless households in southern region. It is highest among the upper castes in north-eastern region. In terms of animal trade, buffaloes are most traded animals with very high monetary share in total animal sale. The proportion of buffaloes' share in income and sold animals is comparatively low in scheduled castes and landless households. In these lower socio-economic sections, the sale of sheep and goats bring higher revenues.

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