

Dynamics of Livestock Husbandry and its Role in Improving Health and Livelihood Generation in Bulandshahr District, Uttar Pradesh: A Geographical Analysis

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Abstract - Livestock husbandry is one the most important economic activity for poor and deprived people in rural India providing income, employment and sustainable livelihood. It is an important source of nutrition and protein playing a catalytic role in providing food security to socio-economically backward people. In India, livestock husbandry plays a critical role in removing regional disparities in socio-economic development by providing income earning opportunities for the poor and marginalized farmers. Present study is an attempt to assess the growth of livestock husbandry in the study area, to assess the level of livelihood generation through livestock husbandry and to highlight the role of livestock husbandry in improving the health of people and the study has been conducted in Bulandshahr district of Uttar Pradesh. In the study 6 villages have been surveyed while 30 households from each villages have been interviewed using purposive and stratified random sampling method. The result of the study shows that livestock husbandry has increased manifold during 2003 to 2012 especially cattle, buffalo and goat. Livestock is an integral part of the diet of Indian and the people of study area. Most importantly liquid milk is consumed by almost all people while curd, ghee and butter also constitute an important proportion of diets of these people. Livestock has become an important source of maintaining health of people in the study area. Livestock provides livelihood to majority of people in the study area through different operation like rearing, marketing, collection and processing.

Keywords: Sustainable livelihood, nutrition, protein, food security, health and rearing.

I. INTRODUCTION

Livestock husbandry is one of the most important economic activity in the world. It provides employment and livelihood to billions of people in around the globe. It is practiced in various geo-climatic conditions in various forms such integrated-crop-livestock-farming system, subsistence livestock farming, intensive subsistence livestock farming and commercial livestock husbandry. The fast-growing demand for milk and meat in urban centers in resource-limited countries is leading to the intensification of livestock production systems, especially in periurban areas of these countries (Zinsstag, J. et Al., 2015). Livestock is providing food and nutrients to humans since the time immemorial. In livestock-dependent households and communities, the health of humans, livestock, and household economic welfare are closely linked (Thumbi, S.M. et. Al., 2015). With the higher growth of economy, increase in human population, urbanization and awareness in health consciousness, the

demand for livestock products will increase leading the proportion of income spent on livestock products to increase (S.S. Pandian A. et al., 2015). The role of livestock husbandry has become crucial in underdeveloped and developing countries because majority of poor population of these countries depend on livestock for food and nutrition to maintain their health. Livestock are a source of income and food, support crop production and provide insurance and social status for these households (Sadler, K., 2021). In India, livestock husbandry plays a critical role in removing regional disparities in socio-economic development by providing income earning opportunities for the poor and marginalized farmers. The livestock sector plays a strategic role in improving the economic, environmental, and sociocultural stewardship of any nation (Prasad A. & Kothari, N., 2021). It has become an important instrument in removing poverty at grassroot level in rural landscape of the country. It provides livelihood to about 20.5 million people and more

than two third of rural population depend on livestock for their livelihood. Livestock keeping is critical for many of the poor in the developing world, often contributing to multiple livelihood objectives and offering pathways out of poverty (Randolph, T.F., et al., 2007). The grown population, rapid urbanization and growth in purchasing power are playing the catalytic role in the demand for livestock derived products which has also exerted enormous pressure on agriculture (Khan, N & Parashari, A.K., 2018). India is world's largest livestock holder and largest milk producer. Livestock husbandry contributes 4.11 percent to GDP of country and 25.6 percent of agricultural GDP. Livestock products constitute the major part in the diet of every Indian directly or indirectly. It contributes immensely in maintaining the health and nutrients intake of poor and downtrodden people by providing cheap and easy source of critical elements. Smallholder livestock producers have opportunities to directly contribute to improved human health and nutrition through improving the quality, sufficiency and safety of animal-source foods (Okello, A., 2018). Livestock products are easily available to the underprivileged people because they are engaged in livestock husbandry or those who do not practice livestock husbandry can obtain these products at relatively cheaper rate in rural areas. Although, cost of livestock products in urban market becomes almost double because marketing, processing and transport cost is also included. Livestock is playing has vital contribution in providing nutrition and food to these poor and malnourished people through providing directly consumable products and by providing cash income to spend on food items (Parashari, A.K. & Hussain, M., 2019). Livestock husbandry significantly maintain the sustainability because it is utilizing the land that is not suitable for food production, highly nutritious animal-sourced food is converted from energy and protein sources unable to be converted by humans, it reduces the environmental pollution through agro-industrial by-products and providing a sustainable source of income generation. Moreover, food habits of people are also changing with change in the availability of choice of food as people are opting for non-vegetarian food to maintain their health and fitness because it is the perennial source of protein supply. Livestock products provide necessary energy and nutrients to human to maintain their health. Livestock husbandry complements the available source of food and it also supplements the nutrition supply by providing accessibility to poor population so their health standard can be maintained. Taking into consideration the dynamics of livestock husbandry the researchers aim to findout:

1. To assess the growth of livestock husbandry in the study area.
2. To assess the level of livelihood generation through livestock husbandry.
3. To highlight the role of livestock husbandry in improving the health of people.

II. MATERIALS AND METHODS

The present study is based on the primary as well as secondary sources of data. Secondary data has been obtained from livestock censuses, district statistical magazines and Gazetteer and various published articles while primary data has been generated from field survey of five villages (Kurena, Utsara, Yadavpur, Pala, Fatehpur and Samaspur) of Bulashahr district. The data has been collected through direct interview of people from the sampled villages using stratified random and purposive sampling techniques. 30 households from each village and total 180 households have been surveyed. Mainly three species of livestock i.e. buffalo, cattle and goat has been taken into consideration because remaining species have negligible proportion in total livestock in the district. A comprehensive questionnaire was used to collect the information regarding number of livestock, level of engagement in livestock, employment generation through livestock, food habits and consumption of livestock products. Simple percentage method has been used to highlight the trends through collected data.

Study Area

Bulandshahr district lies in the Meerut region in Upper Ganga plain of Western Uttar Pradesh located between 28.4°N and 28.0°N latitudes and between 77.0°E and 78.0°E longitudes. It is one the important agriculturally developed district of U.P. It covers an area of 4,353 sq. km. inhabited by 30,09,840 persons out of this 60 percent are engaged in agricultural occupation. Total cropped area under various crops like wheat, rice, sugarcane, barley, millet, pulses, vegetables and horticulture is 299680 hectares. The district is also well developed in livestock husbandry mainly dairy farming, goat rearing and poultry. Meat industry is also developing due to increasing demand of meat in national and international markets. There are 224555 heads of cattle, 1109638 heads of buffalo, 177272 heads of goat and sheep in the district during 2012. Farmers are following mixed farming system with integration of crops and different species of livestock. The study area is divided into 7 subdivisions, 16 development blocks and 1246 villages for administrative convenience (Figure 1).

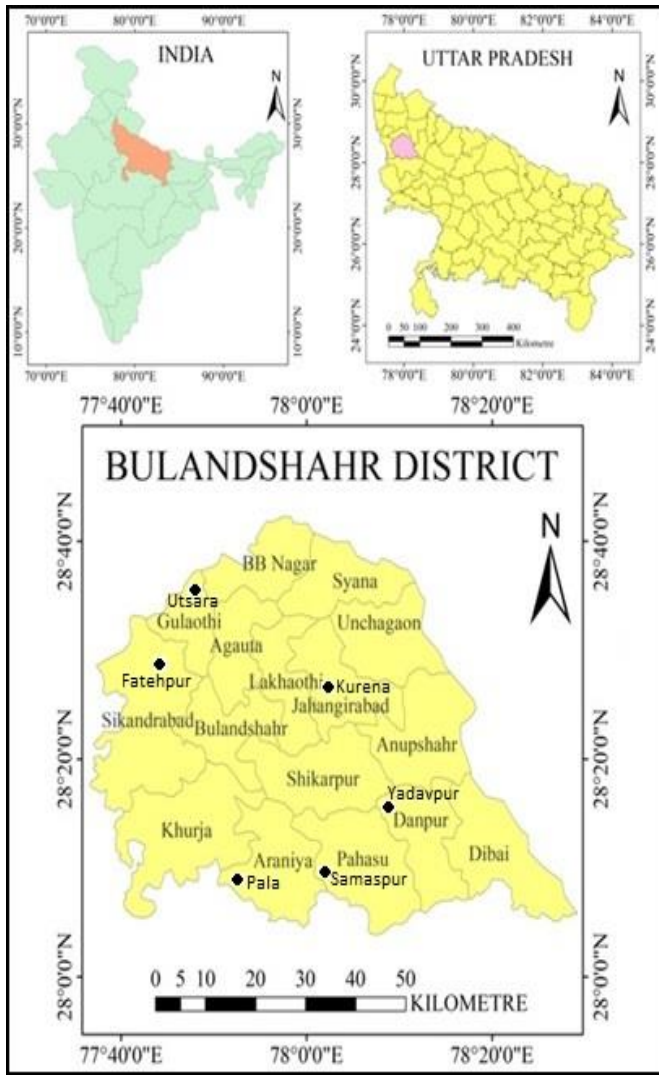


Fig. 1

Discussion

Dynamics of Livestock Husbandry

Livestock husbandry is a primary economic activity and mostly concentrated in the rural areas in India. Livestock

sector has been continuously improving up as the demand for livestock products rose up tremendously over the years after implementation of new economic order or WTO during 1991. Table 1 highlights the growth of livestock in the Bulandshahr district which indicates that cattle has increased by 33.68 percent while at block level Syana recorded highest growth (120.64 %) and Anupshahr recorded lowest growth (3.53%) during 2003-2012. Buffalo has increased by 10.50 percent in the district but at block level Syana experienced growth of 68.05 percent and Sikanderabad experienced growth of 5.04 percent. Goat has grown by 10.57 percent in the district although at block level it has grown by 94.18 percent in Syana and 4.53 percent in Bulandshahr district. The growth of cattle is attributed to the poor socio-economic condition of the livestock rearers because the price of buffalo is too much and they can not afford to purchase it so they purchase cattle for milk production and draught power in agriculture. The growth of buffalo is attributed to the huge market demand of buffalo products. Buffalo milk contains higher fat content so obviously it is purchased at higher price than cow milk. Moreover, male buffalo are mainly used in meat industry so the male buffalo produces extra income to the farmers. Goat are multiple utility small ruminant are the cash in purse to the poor farmers, especially female livestock rearers. Goats are usually reared by the Muslim community and Scheduled and Other backward castes of Hindu community. Given women’s traditional responsibility for household food security, their level of control over decisions about whether to sell or consume the family’s animal products, as well as over how to use any income obtained from the sale of animal foods, could greatly determine the nutritional well-being of household members (M. Herrero et al., 2012). The women of SC and OBC community usually have freedom to go out of the house and rear the animals so their participation is much more than the higher castes and economic freedom of lower castes is more pronounced than the higher castes.

Table 1 Percentage Growth of Livestock in Bulandshahr District (2003-2012)

Block	Cattle			Buffalo			Goat		
	2003	2012	% Change	2003	2012	% Change	2003	2012	% Change
Uchagaon	9226	9746	5.64	61967	65918	6.38	9243	9754	5.53
Anupshahr	8709	9016	3.53	75987	80351	5.74	17166	18539	8.00
Jahangirabad	4338	5355	23.44	69925	76099	8.83	9548	10082	5.59
lakhauti	12159	16243	33.59	63541	69620	9.57	10531	11230	6.64
B.B.Nagar	8362	9678	15.74	42826	49315	15.15	3646	3884	6.53
Gulaothi	11471	16183	41.08	57977	63601	9.70	10701	12006	12.20
Agauta	6748	8452	25.25	49258	53522	8.66	6859	7356	7.25
Syana	7748	17095	120.64	48538	81566	68.05	6183	12006	94.18
Danpur	9072	9563	5.41	63961	69925	9.32	11534	12110	4.99
Dibai	10792	11012	2.04	76082	81372	6.95	17955	18769	4.53
Shikarpur	9670	14855	53.62	77941	83244	6.80	8745	9663	10.50
Arania	9370	15552	65.98	47354	52275	10.39	5397	5966	10.54

Khurja	14455	19423	34.37	70462	75700	7.43	9710	10681	10.00
Bulandshahr	15085	19097	26.60	91598	96479	5.33	21258	22222	4.53
Sikanderabad	12612	18999	50.64	135094	141902	5.04	10443	11445	9.59
Total (District)	149817	200269	33.68	1032511	1140889	10.50	158919	175713	10.57

Source: District Statistical Magazine, 2022

Role of Livestock Husbandry in Human Health

The real value of livestock products grew up very fast over the last decades. Livestock husbandry is viewed as an output function in which food and non food items like milk, meat, and processed milk products like curd, butter, ghee and sweets. Livestock is a major supplier of protein and fat to people of poor economic status and they receive enough amount of nutrient and protein from livestock by rearing the animals, otherwise, it will be difficult to them purchase these items from market. Table 2 shows consumption of livestock products by respondents in daily diets. It shows that milk is consumed by the almost all the people while highest proportion of curd is taken by 93.33 percent households in Samaspur village and lowest proportion of households consume curd in Yadavpur village. 56.67 percent households consumes butter in Pala village but only 36.67 percent households consume butter in Yadavpur village. Ghee constitute diets of 16.67 percent households in Yadavpur village while 33.33 percent households in Pala village consume ghee. Meat in diet is used by 46.67 percent households in Utsara village and by 33.33 percent households in Fatehpur and Yadavpur village. Livestock is a constant supplier of food, nutrients and protein. Liquid milk is the most significant commodity which used by the all the households in various from like in tea, coffee and milk while curd is the processed form of milk which is consumed by the people. In the urban areas most people purchase packaged curd which is supplied by the large processing units such as Mother Dairy, Parag, AMUL and other small milk processing firms but in the rural areas livestock rearers themselves process milk and make curd. Butter and ghee is also produced from the processing of curd which provides significant amount of fat to people. Meat is the most important source of protein which produced by the slaughter of animals, mainly male buffalo and goat. The great utility of livestock in meat production enables the livestock husbandry more profitable to small and marginal farmers. With increasing modernization and increasing population the change in food habits is taking place which more people are eating non veg food ant also reducing on agriculture land to produce more feed grain.

Table 2 Consumption of Livestock Products by Respondents in Bualndshahr District

S.No.	Name of Village	Milk	Curd	Butter	Ghee	Meat
1	Kurena	30(100.00)	24(80.00)	14(46.67)	6(20.00)	11(36.67)
2	Utsara	30(100.00)	26(86.67)	16(53.33)	8(26.67)	14(46.67)

3	Yadavpur	30(100.00)	23(76.67)	11(36.67)	5(16.67)	10(33.33)
4	Pala	30(100.00)	27(90.00)	17(56.67)	10(33.33)	9(30.00)
5	Fatehpur	30(100.00)	25(83.33)	15(50.00)	9(30.00)	10(33.33)
6	Samaspur	30(100.00)	28(93.33)	12(40.00)	7(23.33)	15(50.00)

Source: Field Survey, 2022.

*Figures in the bracket show percentage.

Livestock Husbandry and Livelihood Generation

Livestock husbandry is a very reliable source of livelihood generation in the rural areas for the poor and marginal farmers. Majority of resource poor farmers who rear few animals generate a significant proportion of subsidiary income from livestock. They earn income from sale of milk and milk products of cow and buffalo while goat and sheep provide income during financial emergencies like marriage, treatment of sick persons, educational expenditure of children, repair of houses etc. income from agriculture is mostly comes during harvesting season so farmers need and alternate source of income generation and livestock husbandry is perennial source of income generation. Table 3 shows that 73.33 percent people in Yadavpur engaged in rearing while 63.33 percent people in Fatehpur and Utsara are engaged in rearing. 20.00 percent people in Yadavpur are involved in marketing of livestock husbandry while only 6.67 percent are involved in Marketing in Kurena village. Highest proportion in distribution of livestock products is found in Kurena and Fatehpur (13.33%) while lowest proportion of people in distribution is found in Pala and Utsara (6.67 percent). In collection and proportion highest proportion is recorded in Kurena and Pala (10.00 %) but lowest proportion is found in Utsara and Samaspur (3.33 %). Rearing involves feeding and watering of animals, to move animals from one place to another, cleaning and taking care of their medical necessities. This operation is a labour intensive and consumes the non-productive labour of household. Female and old members of the households contribute to this labour which is productive utilization of dull labour force. Marketing and distribution of livestock products and animals is a male dominated operation of livestock husbandry because to sell the products they have travel to the nearby urban market and collection centres. The animal trade is mostly takes place at weekly and monthly animal markets at distant places so mostly male travel to these places. Moreover, some people purchase animals from the livestock rearers to sell them in meat industry at higher rates so they also earn income from animal trade. Collection and processing is a value added operation which require

certain profession skill so sweet shops and milkmen are engaged in this operation. Moreover, few households also prepare ghee to sell it in the market which provide good economic return to the livestock rearers.

Table 3 Involvement of households in various operation of Livetsock husbandry in Bulandshahr District

S. No	Name of Village	Rear ing	Mark eting	Distrib ution	Collection & Processing	Total Househol ds
1	Kurena	21(70.00)	2(6.67)	4(13.33)	3(10.00)	30
2	Utsara	23(63.33)	4(13.33)	2(6.67)	1(3.33)	30
3	Yadavpur	19(73.33)	6(20.00)	3(10.00)	2(6.67)	30
4	Pala	22(73.33)	3(10.00)	2(6.67)	3(10.00)	30
5	Fatehpur	19(63.33)	5(16.67)	4(13.33)	2(6.67)	30
6	Samaspur	20(66.67)	4(13.33)	5(16.67)	1(3.33)	30

Source: Field Survey, 2022.

*Figures in the bracket show percentage.

III. CONCLUSION

Livestock husbandry is significant tool to provide healthy food to the people at relatively lower prices. It is also an important source of livelihood generation mainly to the resource poor farmers who have small piece of land and educationally backward combined with unemployment. Although, livestock husbandry is an ancient practice followed by people, it is population explosion in last few decades which has stimulated its importance in food security because land resources are tremendous pressure to grow required amount food to ever increasing population. Livestock is main source of nutrients for the majority of population residing in rural areas and it helps in maintaining healthy population. Moreover, government agencies in India have realized the role livestock husbandry in sustainable development of health of people, livelihood generation and poverty eradication so they have initiated various programs and policies such as Operation Flood, Integrated Cattle Development Program, National Livestock Mission and many more. India also have a comprehensive livestock policy under which a certain amount money is allocated to development of livestock resources. Livestock also earn foreign currency as it constitutes a fair amount of Indian export of agricultural commodities. It has revolutionized the process of women empowerment in rural areas by granting them economic freedom because they are educationally and socially backward but livestock has given them an opportunity to earn income.

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