

Goat Husbandry In Aligarh District: A Geographical Analysis

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Abstract

The goat is a very important livestock species in India. Goat in India is largely identified with poor farmers and as a major source of livelihood for the small and marginal farmers and the landless in the Indian economy. Goats are generally reared for their milk, meat, and manure. Goat meat is the most preferred meat in India. Goat milk has high medicinal value consumed for many diseases. Milk productivity is low because of the lack of adoption of scientific methods of milk production. The goat is also considered a poor man's cow. Aligarh district of Uttar Pradesh was selected as the study area because goat husbandry is well-developed in the Aligarh district. The study is based on secondary sources of data collected from district statistical bulletins. The development blocks of the Aligarh district were selected for detailed analysis of the spread of goat husbandry in the study area. Studies revealed that goat farming is growing in some blocks showing positive growth but most of the blocks show negative trends. The proper management of goat husbandry can provide an opportunity for sustainable development in the study area.

Keywords: Goat Husbandry, Sustainable Development, Development Blocks

1. Introduction

Goats are a major source of livelihood for the marginal, small, and landless farmers in the rural areas. Goat farming is an important and oldest livestock practice in India. The goat is referred to as a poor man's cow. Goat is kept by farmers for milk, meat, and manure for domestic or commercial purposes. Goat farming recently gained popularity among farmers owing to its low investment cost, high profitability, and considerably low maintenance cost.

Goats are among the main meat-producing animals in India, and their meat (chevon) is one of the choicest meats and has huge domestic demands [1]. The Goat is one of the most important species of livestock in India, it has a short generation interval, high prolificacy, and is easily adaptable to a wide range of climatic conditions. Goat meat is the most preferred meat in India. Almost 95% of the goat meat produced in India is consumed locally [2]. Goat farming offers tremendous potential for rural development. Goat farming has been increasingly recognized to provide subsidiary employment to small and marginal farmers [3,4]. The majority of goat rearers belong to the other backward class (OBC) [5]. Several large and progressive farmers, businessmen, and industrialists have adopted commercial goat farming and this activity is helping in realizing the potential of goat enterprise through better access to technical knowledge, resources, and market thereby increasing goat productivity and bridging the demand-supply gap [1]. Goats

are an important part of the rural economy, particularly in the arid, semi-arid, and mountainous areas of India. Goat is reported to be more economical than cattle and sheep under natural grazing browsing [6]. The net return per goat was found highest among large farmers which led to the conclusion that the farmers need to increase their flock size to get maximum profits and minimize cost [4,7]. The economics of goat farming in India revealed that several large and progressive farmers, businessmen, and industrialists have adopted commercial goat farming and this activity was helping in realizing the potential of goat enterprise through better access to technical knowledge, resource, and market thereby increasing goat productivity and bridging the demand-supply gap In the areas of Saurashtra, Gujarat, the farmers reared cow and buffalo with the goat [1,8]. The majority of goat farmers have opened each type of goat-rearing unit [9]. Marketing of goats especially males are performed through rural markets and farm gates by village traders as well as butchers. Most of the live animals follow a small length of market channels [4]. Goat husbandry is well developed in Aligarh district Uttar Pradesh. Small, marginal farmers and landless directly or indirectly engaged in goat rearing and marketing in Aligarh district.

2. Objectives of the Study

To analyze the growth of goat husbandry in the Aligarh district.

To analyze the spatial and temporal pattern of goat husbandry in the Aligarh district.

3. Data Base and Methodology

The present study is based on secondary sources of data. The Goat has been taken into consideration as a livestock species in the Aligarh district. The block-wise data to calculate the block-wise distribution of goats, spatial and temporal patterns, and growth of goat's husbandry were collected from district statistical bulletins of Aligarh district (1997-2019). In terms of quantitative technique, simple statistics, and cartographic techniques have been utilized for the analysis of data like percentage, choropleth, and Arc GIS 10.2.

4. The Study Area

Aligarh is one of the agriculturally developed districts of Uttar Pradesh. The district lies in northern parts of middle- Ganga Yamuna interflaves or doab within 27° 34' North and 28° 11' North latitudes and 77° 29' East and 79° 38' East longitudes (Fig. 1) it covers an area of 3650 square km with the population 36,73,889 persons (2011 census). There are 12 development blocks, 5 Thesils, and 1162 villages. About 70 percent population in rural areas is directly or indirectly engaged in goat husbandry in Aligarh district. Goat rearing is an important activity of small and marginal farmers in Aligarh district.

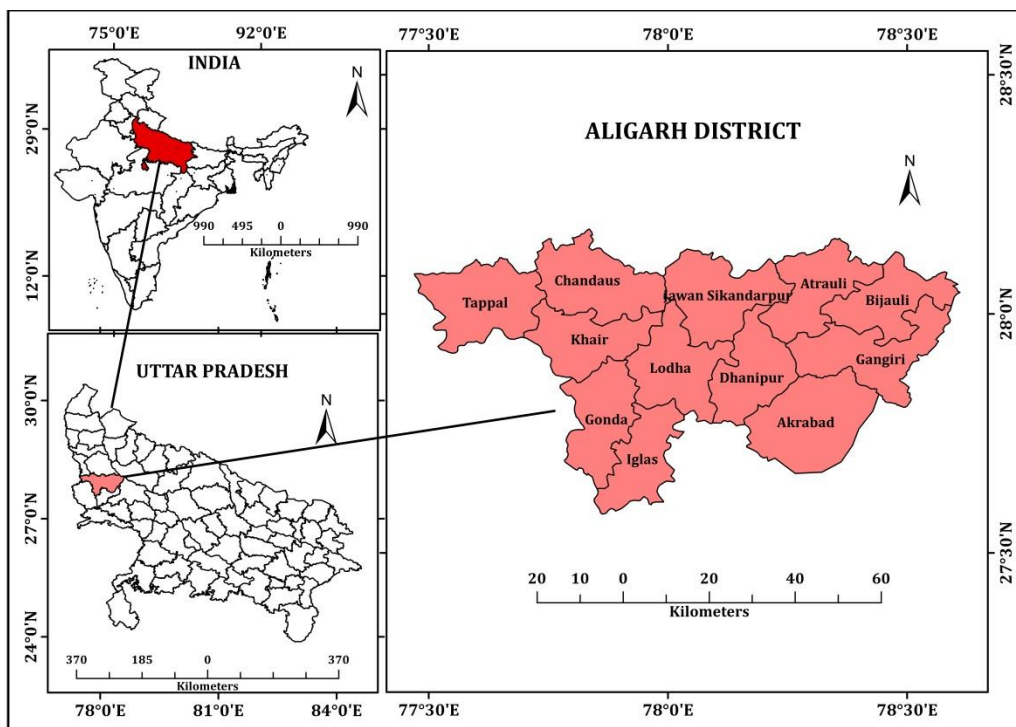


Figure 1: Location Map of the Study Area

5. Results and Discussion

5.1 Growth of Goat Husbandry

There is a decrease in the number of goats in Aligarh district from 140132 goats in 1997 to 136507 goats in 2019 (Table 1). Blocks show an increase in the number of goats namely Tappal, Chandaus, Kahair, Jawa, Lodha, and Iglas. Some blocks that showed a decrease in goat numbers are Dhanipur, Gonda, Iglas, Atrauli, Bijauli, Gangiri and Akrabad. The high positive growth in goat husbandry is found in Jawa Sikandarpur (34.66 percent) Khair (32.08 percent) Tappal (31.61 percent), Iglas (27.14 percent) Lodha (7.38 percent), and Chandaus (4.01 percent). The total urban areas

also showed a positive growth (140.10 percent) from 1997-2019. The highest negative growth in goat husbandry was recorded in the Gonda block (-37.33 percent) and other blocks showing negative growth namely Atrauli (-36.72 percent), Bijauli (-31.25 percent), Gangiri (-35.90 percent) Akrabad (-28.38 percent) and Dhanipur (-2.83 percent). The block-wise data analysis revealed that the decline in goat population is not uniform in all blocks. Reduction in pasture and fallow lands, lack of space for goat rearing and health-related problems as well as lack of veterinary hospital, are attributing factors to the decline rate of goat husbandry in the study area.

Development Blocks	Number of Goats in 1997 (livestock census)	Number of Goats in 2003 (livestock census)	Number of Goats in 2007 (livestock census)	Number of Goats in 2012 (livestock census)	Number of Goats in 2019 (livestock census)
Tappal	4327	6593	11777	9430	5695
Chandaus	7617	7395	13210	10213	7923
Khair	5566	7530	13451	9250	7352
Jawa Sikandarpur	10371	12218	21806	17505	13966
Lodha	9783	7406	13229	15402	10505
Dhanipur	13249	8089	14449	14297	12874
Gonda	7227	6903	10551	9059	4529
Iglas	7752	6363	9725	11787	9856
Atrauli	15590	9026	5725	10607	9865
Bijauli	14134	15153	9611	10743	9717
Gangiri	27136	34509	21887	19401	17393
Akrabad	8842	9583	17118	13196	6332
Total (Rural)	131594	130768	162539	150890	116007
Total (Urban)	8538	14703	9657	22229	20500
Total (District)	140132	145471	172196	173119	136507

Source: Statistical Bulletin of Aligarh District (1997 to 2019).

Table 1: Block-wise Number of Goats in Aligarh District (1997-2019)

Development Blocks	Number of Goats 1997 (Livestock Census)	Number of Goats 2019 (livestock census)	Difference	Growth (%)
Tappal	4327	5695	1368	31.61
Chandaus	7617	7923	306	4.01
Khair	5566	7352	1786	32.08
Jawa Sikandarpur	10371	13966	3595	34.66
Lodha	9783	10505	722	7.38
Dhanipur	13249	12874	-375	-2.83
Gonda	7227	4529	-2698	-37.33
Iglas	7752	9856	2104	27.14
Atrauli	15590	9865	-5725	-36.72
Bijauli	14134	9717	-4417	-31.25
Gangiri	27136	17393	-9743	-35.90
Akrabad	8842	6332	-2510	-28.38
Total (Rural)	131594	116007	-15587	-11.84
Total (Urban)	8538	20500	11962	140.10
Total (District)	140132	136507	-3625	-2.58

Source: Statistical Bulletin of Aligarh District, (1997 and 2019).

Table 2: Block – Wise Growth in Number of Goats in Aligarh District (1997-2019)

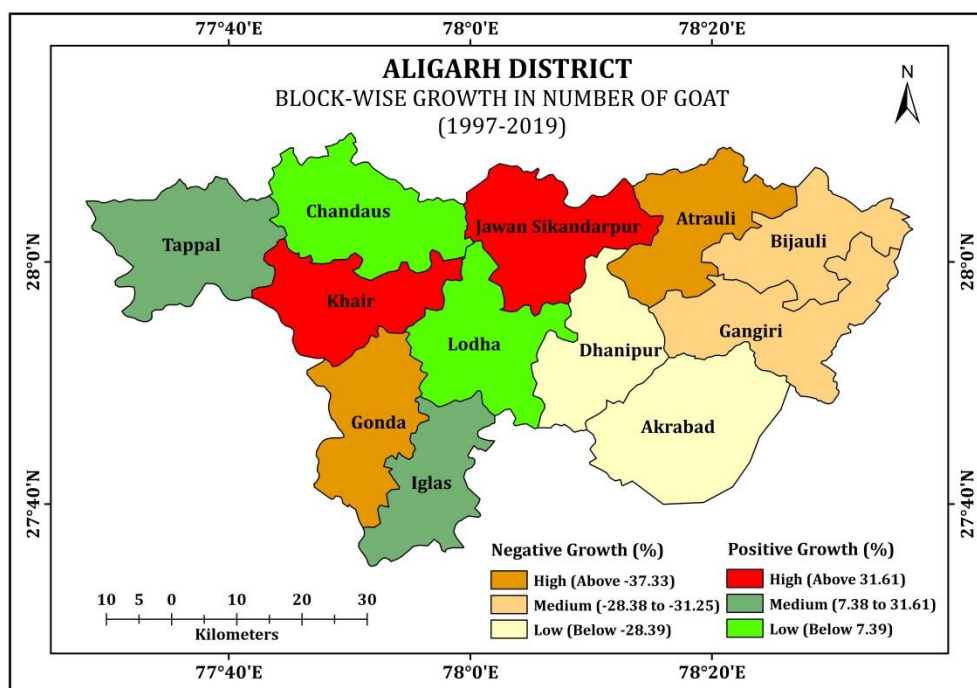


Figure 2

5.2 Goat-Area Index

Land is the most permanent and fixed factor among other factors in evaluating the density significance of goats in any area. Goat density per hectare is very useful for government planning purposes. Therefore, to calculate the goat-area index in each block of Aligarh district. The total number of goats in the block has been divided by the total area of the respective block. (Table 3) shows the number of goats per hectare in 2019 in Aligarh district. It shows that there

are (0.37 goats per hectare) in the whole district. The urban area shows the highest number of goats (1.41 goats per hectare). The block level analysis shows that goats per hectare are high in Jawa Sikandarpur (0.60 goats per hectare), Dhanipur (0.55 goats per hectare), Gangiri (0.59 goats per hectare), Bijauli (0.51 goats per hectare), Lodha (0.48 goats per hectare). The lowest number of goats per hectare was recorded in Tappal (0.17 goats per hectare) and Gonda (0.17 goats per hectare) blocks.

Development Blocks	Block-Wise Area (in hectare)	Number of Goat in 2019 (livestock census)	Number of Goats per hectare (2019)
Tappal	31947	5695	0.17
Chandaus	27968	7923	0.28
Khair	28973	7352	0.25
Jawa Sikandarpur	23182	13966	0.60
Lodha	21731	10505	0.48
Dhanipur	23327	12874	0.55
Gonda	25221	4529	0.17
Iglas	22015	9856	0.44
Atrauli	24673	9865	0.39
Bijauli	19043	9717	0.51
Gangiri	29302	17393	0.59
Akrabad	21188	6332	0.29
Total (Rural)	350466	116007	0.33
Total (Urban)	14534	20500	1.41
Total (District)	365000	136507	0.37

Source: Statistical Bulletin of Aligarh District, (2019).

Table 3: Block – Wise Number of Goats per Hectare in Aligarh District (2019)

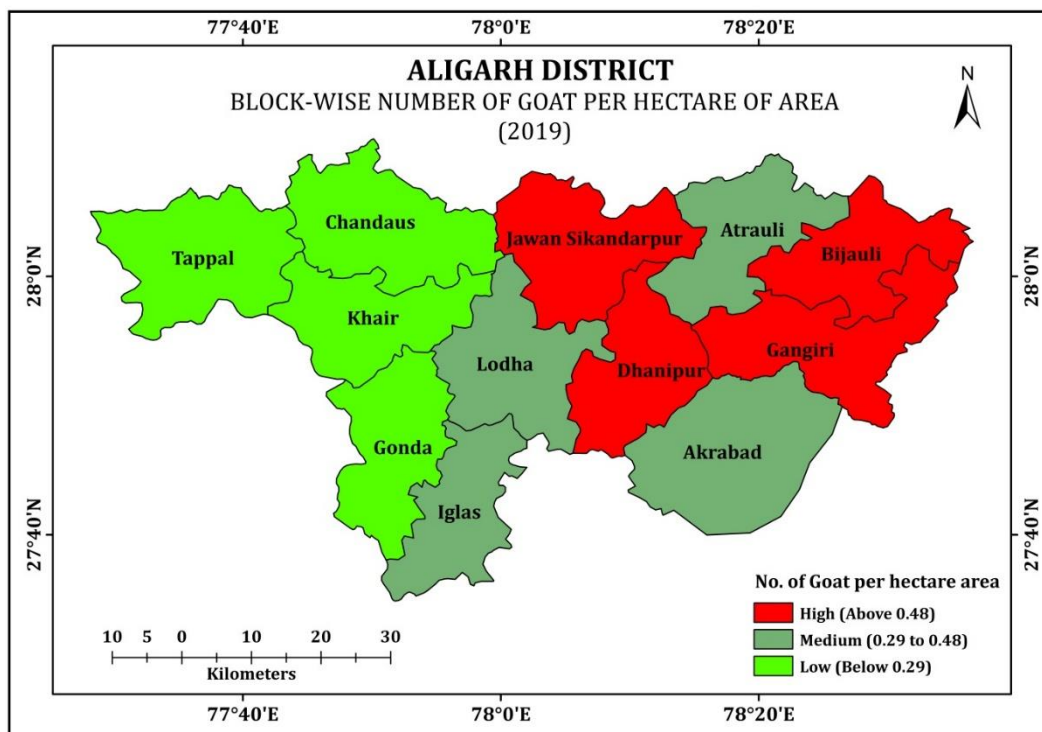


Figure 3

5.3 Goat – Population Index

The goat population index is the most versatile and dynamic indicator to find out the pattern of goat distribution because it shows how the goat population is affected by the changing number of human populations in the study area. The goat population index shows the number of goats per thousand of the population. (Table

4) shows, that the goat per thousand population is found high in Jawa Sikandarpur (68.89 goats) Dhanipur (67.13 goats), Gangiri (64.4 goats), Bijauli (52.33 goats), and Iglas (51.15 goats) blocks and the lowest number of goats per thousand of the population is recorded in Gonda (24.30 goats) and Tappal (29.31 goats) blocks of Aligarh district.

Development Blocks	Block-Wise Population (2011 census)	Number of Goats in 2019	Number of Goats per 1000 of Population (2019)
Tappal	194252	5695	29.31
Chandaus	186726	7923	42.43
Khair	189350	7352	38.82
Jawa Sikandarpur	202714	13966	68.89
Lodha	217328	10505	48.33
Dhanipur	191763	12874	67.13
Gonda	186341	4529	24.30
Iglas	192628	9856	51.16
Atrauli	210787	9865	46.80
Bijauli	185680	9717	52.33
Gangiri	269975	17393	64.42
Akrabad	171056	6332	37.01
Total (Rural)	2398600	116007	48.36
Total (Urban)	1275289	20500	16.07
Total (District)	3673889	136507	37.15

Source: Statistical Bulletin of Aligarh District, (2019).

Table 4: Block-Wise Number of Goats per 1000 population in Aligarh District (2019)

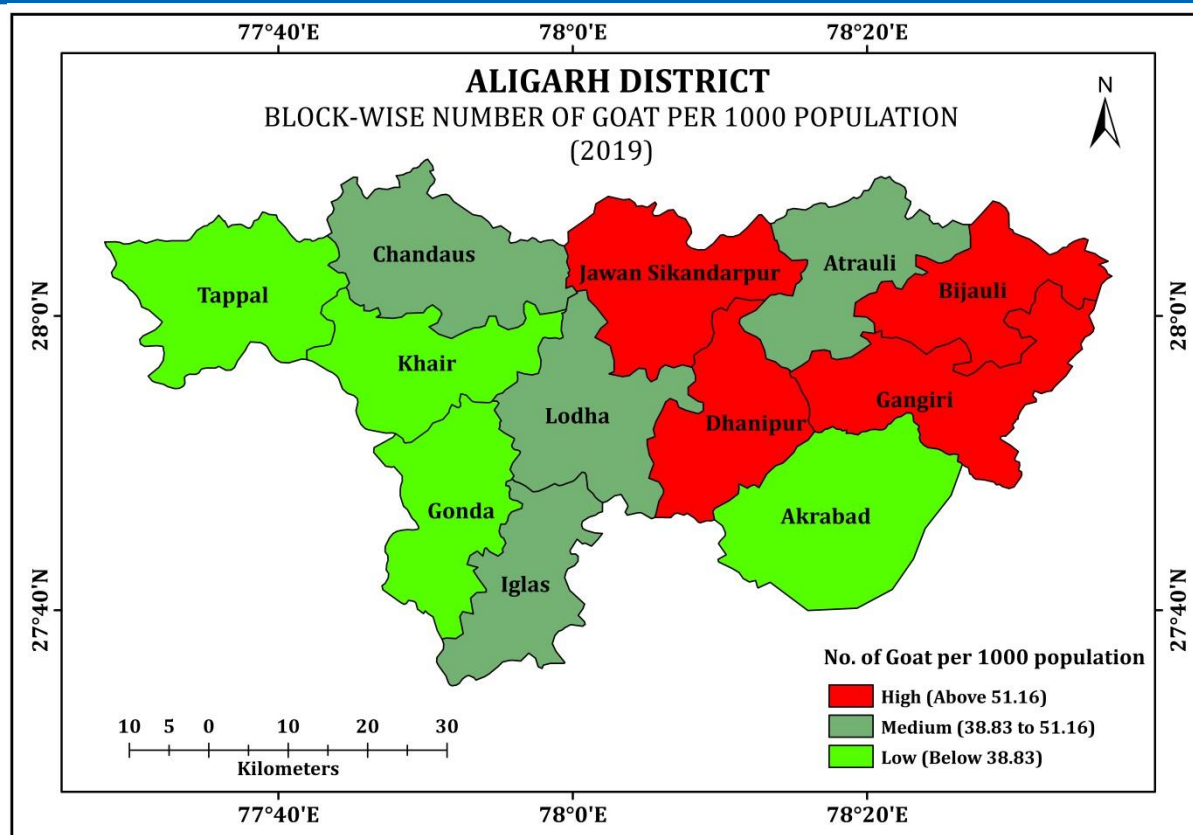


Figure 4

5.4 Goat- Pasture Land Index

Pasture land played a very important role in the growth of the goat population. The pasture land is a result of natural growth. It includes wild grass, clover, wildflowers, and everything that grows naturally. It is also a natural source of animal feed. Table 5 shows block- the wise number of goats per hectare of pasture land. In the Aligarh district total pasture lands are recorded at 1864 hectares.

The highest number of goats per hectare of pasture land is in the Akrabad block (186.23 goats) and the lowest goat pasture land index is in the Tappal block (25.65 goats) of Aligarh district. The presence of a high goat-pasture land index in the southeastern part of the district has resulted in a decline in the growth of the goat population during the last twenty years (Table 2).

Development Blocks	Block-wise pasture land in (Hectare) 2019	Number of Goats in 2019	Number of Goats per hectare of pasture land
Tappal	222	5695	25.65
Chandaus	171	7923	46.33
Khair	155	7352	47.43
Jawa Sikandarpur	206	13966	67.79
Lodha	248	10505	42.35
Dhanipur	129	12874	99.79
Gonda	84	4529	53.91
Iglas	111	9856	88.79
Atrauli	145	9865	68.03
Bijauli	159	9717	61.11
Gangiri	170	17393	102.31
Akrabad	34	6332	186.23
Total (Rural)	1834	116007	63.25

Total (Urban)	30	20500	683.33
Total (District)	1864	136507	73.23

Source: Statistical Bulletin of Aligarh District, (2019).

Table 5: Block – wise Number of Goat per Hectare of Pasture Land in Aligarh District (2019)

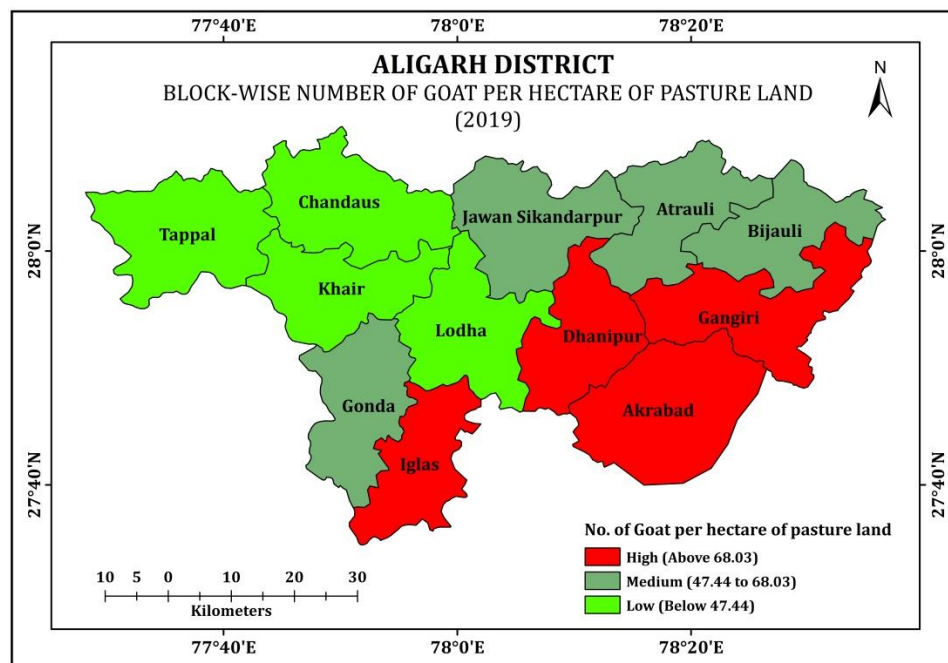


Figure 5

6. Conclusion

The present study is an analysis of the growth and spatial and temporal pattern of goat husbandry in Aligarh district. The goats can be easily reared without much effort and resources. Aligarh district witnessed a decline in the number of goats during the last two decades but it is not true for the whole district. In the study area, some blocks are showing positive growth, and some blocks showing negative growth. The northern and north-western parts of the Aligarh district showed positive growth due to proximity to urban centers like Agra, Mathura, and Aligarh. Goats are reared in big numbers in the areas of domination of land less, small and marginal farmers, who have small capital and fewer resources. The goat population during 1997-2019 in some blocks of Aligarh declined on account of various challenges faced by the goat farmers such as feeding problems, lack of capital, lack of medical facilities at the door, lack of knowledge of government benefits schemes, shrinking of pasture land, poor participation in livestock markets. Such challenges are the increasing cost of foodgrains and fodder, improvement in living standards, shortage of space for goats and Market accessibility are other challenges in the path of goat husbandry. The goat husbandry has tremendous potential for socio-economic development because goat husbandry can provide employment and livelihood for rural peoples if proper management of goat husbandry in the study area has been initiated.

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