

Socio-Economic Behaviour of Goat Husbandry in Aligarh District, U.P

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Goat husbandry plays a crucial role in the agrarian economy of Aligarh district, Uttar Pradesh, offering a sustainable source of income and livelihood for marginalized communities, landless farmers, and smallholders. This study explores the socio-economic dimensions of goat farming in the district, analyzing its impact on income generation, employment, and rural development. The present study is based on both primary and secondary data. The primary data is obtained from 12 sampled villages, and the secondary data is obtained from Statistical Bulletins of Aligarh District. The study examines the demographic composition of goat rearers, landholding patterns, and the role of gender and caste in traditional goat rearing. The findings highlight that goat farming serves as a financial safety net, often referred to as the “poor farmer’s ATM” due to its low input costs and quick returns. The study further assesses the trends, market dynamics, and future prospects of modern scientific goat farming in the region. The results indicate that despite regional variations in herd size and market accessibility, goat husbandry remains a viable strategy for poverty alleviation and economic resilience. The study concludes by emphasizing the need for improved veterinary support, financial assistance, and market linkages to enhance the efficiency and sustainability of goat farming in the district.

Keywords: goat husbandry, socio-economic development, rural livelihood, livestock farming, Aligarh district, agricultural sustainability

Introduction

Indian agriculture and the farmers are at a cross road and the economic viability and the sustainability are in very vulnerable condition (Kumara et. al., 2023). Undoubtedly, the country achieved great success in agriculture sector after independent. Production, yield and area under different crops enhanced tremendously. India is now the second largest producer of various crops like rice, wheat, cotton, sugarcane and first in livestock, milk, vegetables in world (FAO 2023; Khan N., 2010). Area under these crops also improved well. Over the decades, expansion in net sown area, yield per hectare and production gradually saturating and moving towards either stagnation or decline. India has also good potential for other forms of agriculture, besides cropping system, like dairy farming, aquaculture, forestry, bee keeping and goat farming (Shamsuddoha, Nasir, & Hossain, 2023; Khan et al., 2023). The diverse agro-climatic regions and seasonal variability of weather conditions as well as

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socio economic profile of the distinct area and people helped in the origin and development of different forms of farming systems in the country since antiquity. In comparison to cropping system, they could not keep pace with time because high pressure and demand for food production to feed burgeoning population at satisfaction level. Other non-cropping system developed as an auxiliary system to cropping farming system in most of the parts of the country.

Goat rearing is one of the emerging sources and farming system for the solution for the farmers' recent problems of income decline, economic viability and sustainability of agriculture and increasing unemployment and poverty in rural areas (Shingade, & Dharane, 2023; Hossain et. al., 2017). It is usually practiced in frontier and fragile agro-climatic regions of dry, semi dry and mountainous and rugged topographic landscapes (Bdour et al., 2023). Large scale size of goat herds is kept by rearers / farmers in nomadic herding form in resource poor and fragile ecosystem, not only in India but all over world. Goat rearing is practiced, in traditional and small stock size form, even in wet and fertile agriculturally developed areas. The involvement of Land less, poor, socially deprived castes and women in goat farming, have been very common in agriculturally developed region of the country. It has played a dynamic role in the support of mankind over the last 7000 years in terms of milk, meat, skin (Vahoniya et al., 2022).

Goats are very valuable resources which require rather low capital, space and labor for their rearing and management as compared to husbandry of other livestock like cattle and buffalo (Islam, 2023). Goat farming is preferable to marginal and landless farmers because its farming is low cost enterprise, having unique productive and reproductive characteristics like small size, maintenance low grade ration, and high conversion ratio, small inter calving period and high prolificacy (Dikshit et al., 1995). They have good potential to enhance and add economic contribution to farmers' income. They are also called as poor farmer's cows and ATM because their mature babies can be sold anytime whenever the keepers need for cash. Their role in poverty alleviation, employment generation and food nutrition intake have been also very much recognized by scholars, economists, planners as well as policy makers in the country (Mohan et al., 2012; Khan, & Parashari, 2022). Women and children participate in larger proportion in traditional household goat husbandry. They (women) keep and rear goat for money to spend especially for daughters' marriage. They are also called in local language as *Laxami of girls* (Cash for girls).

In recent years, commercialization, industrialization and scaling up of stock size reflect a good future prospect of goat husbandry in the country. Modern scientific methods with technical know-how and big stock size as well as good management of rearing, processing, marketing and distribution of live animals and its derived products are being developed in the country after adoption of agreement of WTO and liberalization of economy after 1991. India is the second largest goat keeping country with 148.90 million heads in the world (Livestock Census, 2019). Their number increased by 10.14 % during 2012 to 2019 with a share of 27.80 percent of total livestock in the country. The goat derived products like milk, meat and ramen share with 3.00, 13.53 and 16.99 percent of total Indian production (20th Livestock Census). India ranks first in milk production with 6.09 million tonnes of goat milk production in world and second in meat production of world with 5.05 lakh tonnes (FAO, 2018). The significance and contribution of goat husbandry has been continuously increasing in response to decline in size of operational holding of land, increasing demand of milk and meat due to improvement in purchasing power of middle-income group population especially in urban areas and increasing rural educated unemployment (Singh et al., 2021; Chandrakar et al., 2021). A big share of Muslim population which demands

a larger number of goats for sacrifice on the occasion of religious festival of *Eid-ul-Azha* every year in the country as well in different countries of the world. Goats are one of the main meat-producing animals in India, whose meat (chevon) is among the choicest meats and has huge domestic demand (Kumar, 2007).

Marketing of live goat and their products is very simple and they are transported from production points to the consumers. Length of market chain is not so long which benefits both producer and consumers through reduction in marketing cost and share of middlemen involved. Improvement in marketing efficiency and small market chain length and local, regional and national and international demand for live goats and its derived products have set the agenda for goat husbandry at large scale production in future (Tilman et al., 2011). The goal of agenda of UNO to remove poverty, food security and rural sustainable development could be achieved through a well-planned management of goat farming in rural India (Canan, 2023). The above-mentioned significance of goat production in the country in general and particularly in socially and economically backward region urges the scholars and researchers to explore the problem and prospects of goat husbandry at grassroots level.

Objectives of Study

The present paper aims to explore following features relating goat husbandry in the study area.

1. Present scenario of goat farming or husbandry
2. Social and economic profile of goat Rearers and Keepers
3. Income and employment generation through goat farming
4. Future prospects of development of modern, scientific and commercial form of goat farming

Research Questions

1. Does goat husbandry have regional variation in the study area?
2. Does social stratification affect the traditional goat farming?
3. Does size of holding of land and gender determine the level of participation of people in goat farming?
4. Does the study area have potential to develop modern commercial goat farms in future?

Study Area

Aligarh district has a predominantly agrarian economy, with fertile alluvial soil and a well-developed irrigation system primarily supported by the Upper Ganga Canal. The major crops cultivated in the district include wheat, rice, sugarcane, mustard, and potatoes, contributing significantly to the agricultural output of Uttar Pradesh. Dairy farming is another crucial component of the rural economy, with a large number of small and marginal farmers engaged in milk production. The district experiences a subtropical climate with hot summers, moderate rainfall, and cool winters, which influences the cropping pattern and livestock management practices. Livestock rearing, particularly goat farming plays a vital role in supplementing farmers' incomes, with a significant population dependent on it for livelihood. Additionally, Aligarh is known for its agro-based industries, including food processing, sugar mills, and dairy units, which further boost the rural economy. The district lies in northern parts of middle- Ganga Yamuna interfluvies 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 3,788 sq km with the population 36, 73,889 persons (2011 census). There are 12 development blocks and 5 sub-divisions. About 70 percent population is engaged directly or indirectly in agricultural activities.

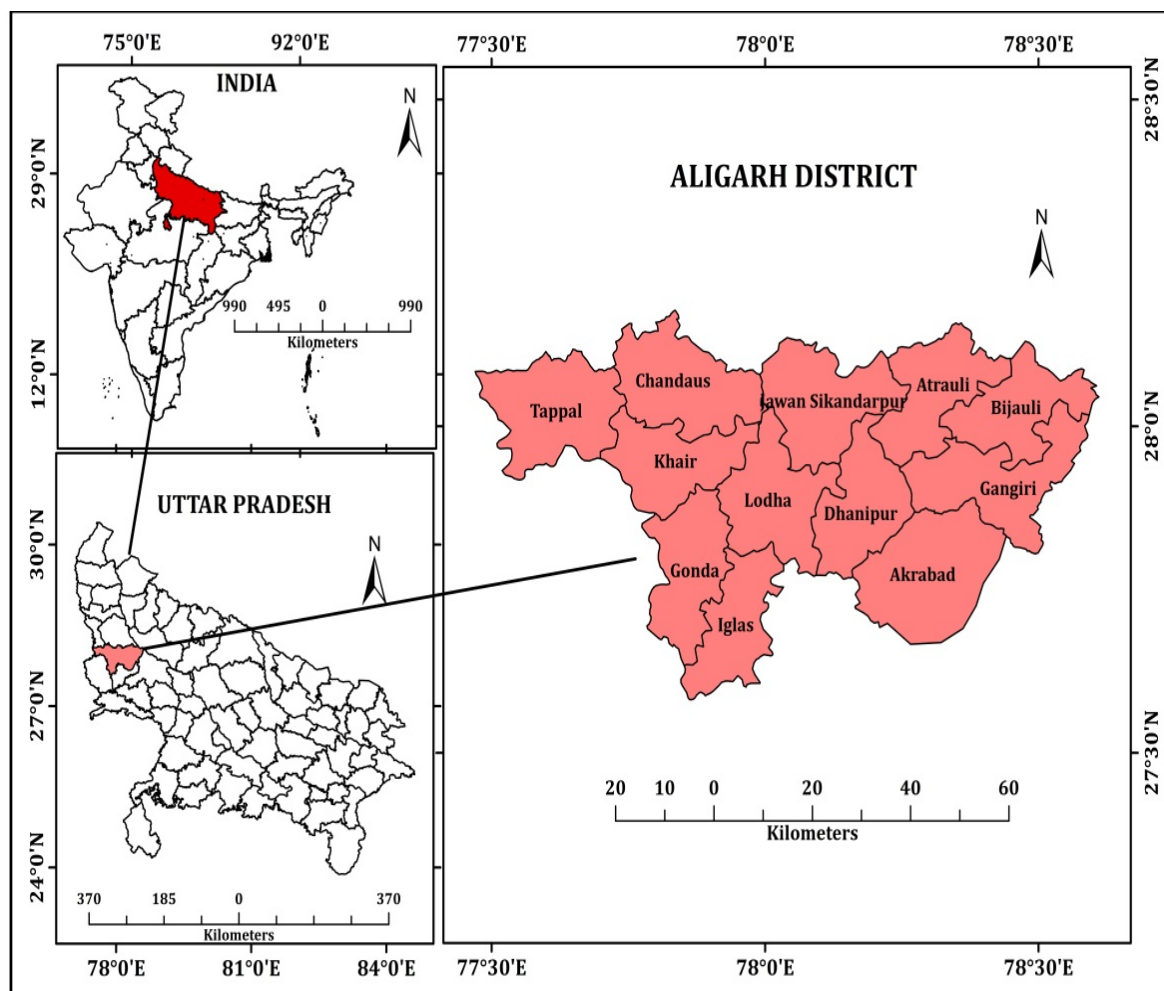


Figure 1. Location map of the study area.

Database and Methodology

The present research work is based on data collected from both primary and secondary sources. Primary data were generated through a field survey conducted in sampled villages and among selected respondents. Twelve villages, one from each block, were chosen based on their distance from towns, road connectivity, population size, and demographic composition. A total of 590 household from different socio-economic backgrounds were interviewed. The survey covered various aspects, including goat farming practices, stock size, caste, religion, gender, age, and the economic status of goat rearers. Additionally, the study examined the economics of goat farming, employment and income generation, challenges faced by farmers, and their suggestions for improving goat farming in the future.

A perception survey was also conducted to assess the impact of goat husbandry on the socio-economic transformation of goat rearers and keepers, as well as to predict the future prospects of modern goat farming in the study area. Secondary data were collected from sources such as the District Statistical Bulletin, Agricultural and Livestock Census, and published literature. Simple statistical and cartographic techniques were used for data processing, analysis, and interpretation.

Results and Discussion

Present Scenario of Goat Husbandry in Aligarh District

Goat husbandry is a traditional agro-based activity in Aligarh district. It serves as an auxiliary household profession, primarily practiced by marginalized groups and in fragile environments. The district has been an important geographical region for goat rearing due to its sub-humid and dry climatic conditions. In 2019, a total of 136.50 thousand goats were reared, contributing 0.94% to the total goat population of Uttar Pradesh during the same period.

The study, based on secondary data, reveals that regional variation in goat numbers is not uncommon due to differences in agro-climatic conditions, land use patterns, market demand, education levels, and socio-economic transformation in the respective areas (Khan, & Rehman, 2024; Singh et al., 2021; Mohan et al., 2012). Goat populations vary across blocks, as shown in Table 1. Four development blocks—Gangiri (17,393), Jawan Sikanderpur (13,966), Dhanipur (12,874), and Lodha (10,505)—have more than 10,000 goats each, in descending order. These blocks represent the central part of the district, whereas the eastern and western regions have comparatively fewer goats.

The spatial variation in goat population is mainly attributed to land size, socio-economic conditions, market accessibility, and the availability of pasture land. Overall, the study area witnessed a negative growth rate of -2.58% in goat population from 1997 to 2019. However, growth trends vary among the 12 blocks. Jawan Sikanderpur, Khair, Tappal & Chandaus, and Iglas recorded a positive growth rate of over 30% (Table 1). The key factors contributing to this growth include high demand for live goats and mutton in nearby cities such as Agra, Mathura, and Delhi, the availability of free pasture land, and the predominance of backward castes, marginal, and landless farmers in these regions.

Table 1

Spatio-Temporal Pattern of Goat Husbandry in Aligarh District

Blocks	Goat number in 1997	Goat number 2019	% Change	No. of goats per hectare (2019)	No. of goat per thousand population (2019)	No. of goats per hectare of Pasture land (2019)
Tappal	4327	5695	31.61	0.17	29.31	25.65
Chandaus	7612	7923	4.01	0.28	42.43	46.33
Khair	5566	7352	32.08	0.25	38.82	47.43
Jawa Sikanderpur	10371	13966	34.66	0.60	68.89	67.79
Lodha	9783	10505	7.38	0.48	48.33	42.35
Dhanipur	13249	12874	-2.83	0.55	67.13	99.79
Gonda	7227	4529	-37.33	0.17	24.30	53.91
Iglas	7752	9856	27.14	0.44	51.16	88.79
Atrauli	15590	9865	-36.72	0.39	46.80	68.03
Bijauli	14134	9717	-31.25	0.51	52.33	61.11
Gangiri	27136	17393	-35.90	0.59	64.42	102.31
Akrabad	8842	6332	-28.38	0.29	37.01	186.23
Total (Rural)	131594	116007	-11.84	0.33	48.37	63.25
Total Urban	8538	20500	140.10	1.41	16.07	683.33
Total District	140132	136507	-2.58	0.37	37.15	73.23

Source: Statistical bulletin of Aligarh district (1997-2019).

Conversely, some blocks recorded a decline in goat numbers during the same period due to feed shortages, space constraints for keeping goats, limited pasture land for grazing, lack of extension services, absence of veterinary hospitals, and poor market accessibility. However, unemployed youth, women, poor farmers, and marginalized groups are increasingly showing interest in goat farming, provided they receive financial support, veterinary services, marketing facilities, and credit assistance.

Similarly, the goat-area and goat population index vary from one block to another. The highest index, i.e., 0.60 goats per hectare of land, is found in Jawan Sikanderpur block, while Tappal has the lowest index at 0.17. The number of goats per thousand people is highest in Dhanipur block at 67.13, whereas Tappal has the lowest at 29.31 goats per thousand people. These indexes reflect the intensity of goat farming in a particular area.

Social Behavior of Goat Farming

Goat husbandry reflects the social structure and fabric of goat rearers in India (Khadda et al., 2022). The caste system is deeply rooted in economic activities, particularly in the agricultural sector (Goghari, & Kusi, 2023). Every aspect of goat husbandry, from keeping and rearing to marketing, is influenced by the social profile of rearers, consumers, and the respective regions. Table 2 and Figure 2 illustrate the social structure of goat rearers in the sampled villages of the study area. Analysis of the data reveals that 86% of households keep goats, with stock sizes ranging from 2 to 50 heads. This profession is closely linked to caste, gender, and the operational size of agricultural land. Other Backward Castes (OBC), such as Baghel, Lodha Rajput, Yadav and backward class Muslims are also predominantly involved in goat rearing, often alongside cows and buffaloes. In the district, two-thirds of goat keepers belong to OBCs, with their share varying between 70% and 80% across the sampled villages. These groups are highly skilled and professional in goat rearing, both in India generally and in Aligarh district specifically.

Table 2

Social Structure of Goat Rearers / Keepers in Sampled Villages of Aligarh District 2023-2024

Sampled villages	Blocks	Number of house hold interviewed	Percentage (%) of goat keeping households	Social structure (%)		
				HC	OBC	SC/ST
Usarah Rasool Pur	Tappal	50	60	10	70	20
Ram Nagar	Chandaus	45	67	12	73	15
Sumera Dariapur	Jawan S.	50	62	15	70	15
Sujanpur	Khair	55	55	10	74	16
Razawal	Gonda	40	45	15	75	10
Wajidpur Nada	Lodha	50	70	13	75	12
Burhasi	Dhanipur	50	40	12	73	15
Chandpur Mirza	Akrabad	55	55	20	72	08
Dhansari	Gangiri	50	65	10	80	10
Bijauli	Bijauli	50	67	15	75	10
Jamal Garhi	Atrauli	45	60	12	80	08
Karthala	Iglas	50	70	10	80	10
Total / Average		590	60.84	12.83	74.75	13.25

Source: Field survey, 2023-2024.

Most of the work related to rearing small ruminants like goats is carried out by women and children, who are readily available and engaged in these activities, particularly among socially backward and marginalized communities. The Scheduled Castes (SC), the most deprived social group, account for 13.25 of total goat keepers

in Aligarh district. Higher castes also participate in goat rearing, but they represent only 12.83 of the totals. The lowest share belongs to upper-caste groups such as Rajputs, Thakurs, Brahmins, and Banias (Traders), who generally do not prefer goat rearing due to their higher social status. They are typically medium- to large-scale farmers, businessmen, or government employees.

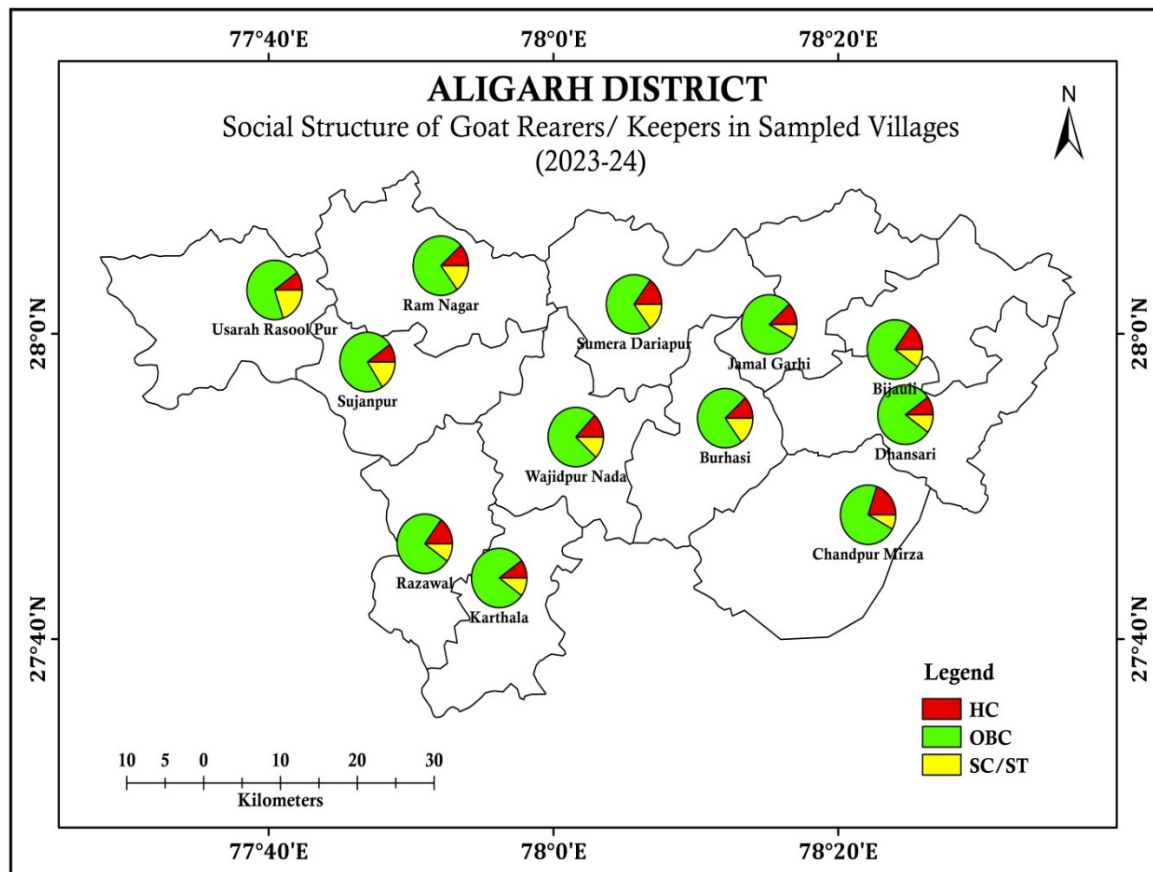


Figure 2. Social structure of goat rearers / keepers in sampled villages of Aligarh district, 2023-2024.

Economic Behavior of Goat Rearers

Goat husbandry in the study area is generally practiced on a very traditional and small scale by poor, landless, and marginal farmers, as well as resource-poor and underprivileged groups of the population. It is often referred to as the “poor man’s ATM”, “mini bank”, or “Laxmi of women”, particularly benefiting girls. Table 3 and Figure 3 illustrate the economic status of goat keepers / rearers based on landholding size in the area under discussion. Approximately 45% of goat-keeping households belong to either landless or marginal farmers who own less than one hectare of land. This group is highly active in goat rearing due to the availability of household labour, particularly female members. Small and medium farmers (owning 2.5 to 10 acres of land) account for 52.41 % of total goat keepers. They have better opportunities to rear goats on a relatively larger scale, maintaining stock sizes of 5-10 goats, as they can obtain feed and fodder from their cropping systems. This reduces the extra input cost of purchasing feed and fodder from external sources. Like marginal farmers, they also rely on household labour, but to some extent, they hire workers for goat care and grazing. Large farmers, owning more than 15 acres of land, constitute a minimal share of only 10.75 %. They are primarily engaged in market-oriented and commercial agriculture, often raising large ruminants such as buffalo and goats for milk production.

Table 3

Economic Structure of Goat Keepers in Sampled Villages of Aligarh District (2023-2024) N = 590

Sampled villages	Blocks	Number of house hold surveyed	Number and percentage of goat rearers household	Percentage of goat rearers according to size of land holdings				
				Land less	Marginal < 2.50 Acres	Small 2.50 to 5.00 acres	Medium 5 to 15 acres	Big < 15 acres
Usarah Rasool Pur	Tappal	50	60 (30)	20	35	20	15	10
Ram Nagar	Chandaus	45	67 (34)	30	35	15	13	7
Sumera Dariapur	Jawan Sikandarpur	50	62 (31)	25	30	15	20	10
Sujanpur	Khair	55	55 (27)	30	25	20	15	10
Razawal	Gonda	40	45 (23)	20	25	30	13	12
Wajidpur Nada	Lodha	50	70 (35)	25	30	20	23	12
Burhasi	Dhanipur	50	40 (20)	25	28	22	15	10
Chandpur Mirza	Akrabad	55	55 (28)	30	25	15	15	15
Dhansari	Gangiri	50	65 (32)	20	24	30	13	13
Bijauli	Bijauli	50	67 (39)	20	27	25	15	13
Jamal Garhi	Atrauli	45	50 (25)	25	30	30	10	5
Karthala	Iglas	50	70 (35)	20	25	25	18	12
Total / Average		590	60.84 (359)	24.16	28.25	22.25	15.41	10.75

Note: *Bracket indicates number of goats rearers house hold from total house hold surveyed.

Source: Field survey, 2023-2024.

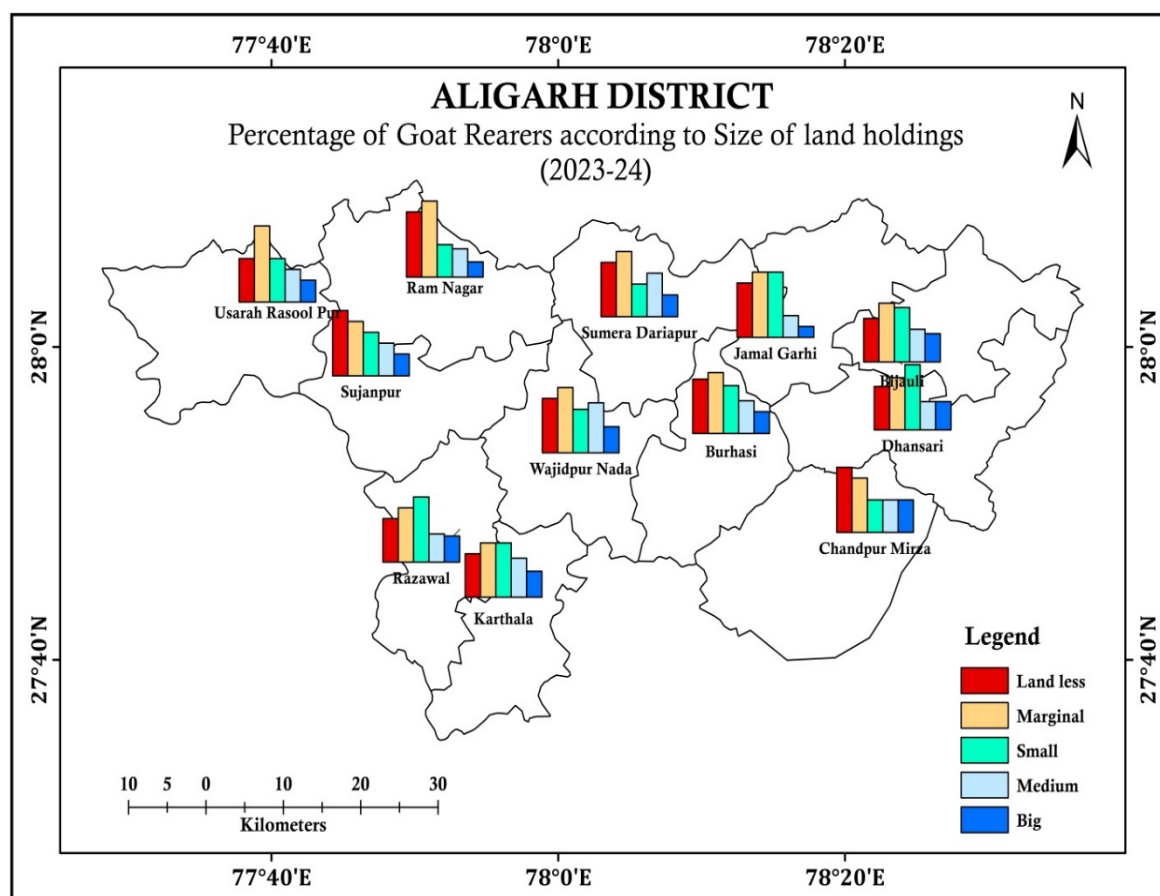


Figure 3. Percentage of Goat rearers according to size of land holdings in sampled villages of Aligarh district, 2023-2024.

Most large farmers belong to higher castes, where women traditionally do not participate in agricultural work to maintain social status. The economically active members of these households are typically employed in private or public sector jobs or involved in businesses of varying scales. Field survey observations reveal that young, educated, unemployed individuals from large farming families are increasingly interested in establishing modern goat farms to generate income and sustain livelihoods in rural areas (Khan, & Parashari, 2022).

Employment Through Goat Farming

Goat husbandry in the study area has been practiced in small stock size ranging between 2 to 50 heads of goats. Full time employment is rather low, in some cases especially in big stock two or three persons permanently involved in different operations of goat husbandry. Data regarding level of employment generated through field survey on the basis of number of hours spent by rearers for various operation of goat husbandry from feeding to marketing. It is evident from Table 4, that 22.83 hours are spent by one household per day for goat husbandry in the district. It refers that approximately 2.86 persons are employed every day in this sector. The nature and quantum of labors or workers involved in goat husbandry vary with size of goat stock size and the level of commercialization and modernization of the farming. It also varies from village to village. It ranges between 21 hrs. (Jamal garhi) and 27.16 Hrs. (Sumera Dariapur).

Table 4

Hours Spent by One Goat Rearing Household Per Day in Sampled Villages of Aligarh District

Sampled villages	Goat rearing households	No. of hours spent by one goat rearing household in different stock size							Persons employed
		1-5	6-10	11-20	21-30	31-40	<40	Average per GR	
Usarah Rasool Pur	30	10	16	25	30	35	40	26.00	26/8= 3.25 persons
Ram Nagar	34	12	14	28	28	32	35	24.83	3.10
Sumera Dariapur	31	13	15	30	32	35	38	27.16	3.39
Suzanpur	27	10	13	25	30	35	35	24.66	3.08
Razawal	23	11	13	28	30	32	34	24.66	3.08
Wajidpur Nada	35	12	15	20	28	33	33	23.50	2.93
Burhasi	20	13	15	23	30	30	32	23.83	2.97
Chandpur Mirza	28	12	13	22	25	28	30	21.66	2.70
Dhansari	32	13	14	29	30	33	35	25.66	3.20
Bijauli	39	10	13	25	25	30	32	22.50	2.81
Jamal Garhi	25	13	14	20	23	26	30	21.00	2.62
Karthala	35	10	12	22	25	28	30	21.16	2.64
Total / Average	359	11	14	25	28	31	28	22.83	2.86

Note: 08 hours works is equal to one-person full employment.

Source: Field survey 2024

The study reflects that goat farming has good potential and opportunities for generating employment and livelihood in the study area. On average, 773 persons per village are fully employed in the goat farming sector. Thus, **926827** people in 1199 villages of the district are involved in goat husbandry in many ways. This sector not only provides direct employment but also supports various allied activities such as fodder supply, veterinary services, and market-related occupations. Goat farming serves as a crucial source of income for small and marginal farmers, landless laborers, and women, contributing to their economic empowerment. With proper

training, financial assistance, and improved market access, the sector can further expand, enhancing rural livelihoods and fostering economic resilience in the district.

Future Prospects of Goat husbandry

Goat husbandry is one of the most profitable agro-enterprises, requiring relatively low capital and land resources (Hermes et al., 2022). It is a blessing for the poor, landless, and marginal farmers. The sector is moving toward modernization and commercialization, with larger goat stocks exceeding 40 heads. The future of this active and dynamic sector appears promising, with significant growth potential. A perception survey of 324 goat-rearing households highlighted the remarkable and significant role played by goat husbandry in the study area. About 78.75% of respondents reported an increase in income. Additionally, 74.25% acknowledged its contribution to employment generation, while 62.91% recognized its impact on poverty alleviation (Table 5). This farming system is transitioning from traditional small-scale practices to commercialization, modernization, and industrialization. Furthermore, 62.16% of respondents expressed their willingness to scale up and modernize goat-rearing farms. Goat husbandry also enhances sustainability by contributing organic fertilizers, supplying capital for crop cultivation, and improving health through better nutrition from milk and meat. Approximately 59% of respondents acknowledged these benefits. In dry regions affected by extreme weather conditions such as drought and heat stress, goat rearing has emerged as a suitable adaptation strategy to climate change. Moreover, its expansion into humid and sub-humid areas has been widely accepted, with more than 50% of respondents confirming this trend.

Table 5

Estimated Number of Persons Employed in Goat Farming in Sampled Villages of Aligarh District (2024)

Sampled villages	Blocks	Total goat rearing households in sampled villages	Average number of persons employed per goat rearing household	Total number of persons employed in goat farming
Usarah Rasool Pur	Tappal	274	3.25	890
Ram Nagar	Chandaus	119	3.10	369
Sumera Dariapur	Jawan Sikandarpur	318	3.39	1078
Sujanpur	Khair	270	3.08	831
Razawal	Gonda	300	3.08	924
Wajidpur Nada	Lodha	210	2.93	615
Burhasi	Dhanipur	330	2.97	980
Chandpur Mirza	Akrabad	336	2.70	997
Dhansari	Gangiri	360	3.20	1152
Bijauli	Bijauli	270	2.81	758
Jamal Garhi	Atrauli	80	2.62	209
Karthala	Iglas	180	2.64	475
Total / Average		3047/253	2.86	9278/773

Note: *Estimated employed persons in goat farming in Aligarh district is $1199 * 773 = 926827$.

Source: Field survey, 2023-2024 / census of India 2011.

Conclusion and Suggestion

The Aligarh district is one of the important areas for goat husbandry, especially in Uttar Pradesh and, more generally, in India. There is regional variation in the number and growth of this ruminant species due to differences in agro-climatic conditions, land use patterns, market demand, education levels, and the degree of socio-economic

transformation in the concerned areas. Some parts of the study area have recorded negative growth due to a lack of rearing shed space, public pasture land, extension services regarding government-provided facilities, and poor linkages with national and regional markets. Goat husbandry is closely linked to social and economic stratification. Two-thirds of goat farmers belong to the Other Backward Class (OBC) and own less than five hectares of land. This sector may provide full-time employment to approximately 9.26 lakh persons, accounting for 25.22 percent of the total population in Aligarh district. It serves as a source of livelihood, income generation, improved nutrition, and better health while also contributing to ecological stability and a climate-resilient farming system. The area requires a special drive to strengthen extension services, raise awareness about financial facilities, promote technological innovations, and improve market accessibility.

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