

Socio- Economic Structure of Dairy Farming & Farmers in Peri-Urban Area of Aligarh City.

Dr. Khaled Kord*

Department of Geography, Aligarh Muslim University, Aligarh, Uttar Pradesh, India.

***Corresponding Author:** Dr. Khaled Kord, Department of Geography, Aligarh Muslim University, Aligarh, Uttar Pradesh, India.

Abstract: The demand of milk and milk derived products in developing countries like India, due to improvement in income, urbanization, health consciousness and awareness as well as fall in rural employment especially in crop farming, accelerated dairy farming in the country. A large number of population is engaged, directly or indirectly, in this diversified form of agriculture. Study reveals that the dairy farmers represent a lion share among rural households in various villages of Aligarh district. India is penetrated and enrooted in every sphere of life of people. Politically, three social groups' i.e. high castes, other backward castes and scheduled castes/ tribes are recognized. Livestock husbandry in particular and agriculture in general is also controlled by both female and male members of farmers' households. Education status is one of the important indicators of human development. Economic status of dairy farmers is reflected in their income and size of landholding. Income of the farmers or capital for investment is one of the important determinants of development of dairy farming in the study area. The dairy farming households follow various occupations like agriculture (crop farming), dairy farming, agricultural labour and business with changing priority.

1. INTRODUCTION

Dairy farming is one of the important forms of agriculture which employs millions of population all over the world. The demand of milk and milk derived products in developing countries like India, due to improvement in income, urbanization, health consciousness and awareness as well as fall in rural employment especially in crop farming, accelerated dairy farming in the country. A large number of populations is engaged, directly or indirectly, in this diversified form of agriculture. The dairy farmers in developing countries like India, usually, are from backward groups of the society (Focus 2007, Khan, N. et al 2006, 2010, Khan, N. & Hoda, M.2008).It is considered as an alternative option for landless, marginal and small farmers to elevate them from the unbearable poverty which results in commitment of suicide and rural-urban migration. Dairy farming is also viewed as caste oriented and female dominant occupation in agriculture. The present study will discuss and analyze the social and economic structure of dairy farmers in study area as given below.

2. METHODOLOGY

The study is mainly based on the primary data collection through field surveys and secondary data collection from various sources. Individual observation of the researcher during the field survey was also considered. The secondary data were obtained from the reports of various government and non-government agencies and scientific articles, book, thesis and dissertation. The primary data were obtained with the help of a questionnaire through field survey conducted in selected village in the peri-urban areas of Aligarh city. The peri-urban area is demarcated on the basis of latest Master Plan of Aligarh development authorities. The maximum distance demarcated for the present study is approximately 20 Km from the center of Aligarh city. Four buffer zones are made at an interval 5 km. there by, 3 villages from 3 buffer zones were selected for the detailed field survey on the basis of population size and accessibility. The sampled villages were having the population below 5000. Thus, in total 9 villages. The collected data were processed tabulated and presented well through construction of statistical diagrams. Simple statistical techniques like comparative tables' simple regression is used for analysis of the data.

2.1. Proportion of Dairy Farmers to Total Households

The farmers in the study area are following livestock and cropping integrated farming system since early period. Livestock is one of the important assets of rural India. Study reveals that the dairy farmers represent a lion share among rural households in various villages of Aligarh district. They share almost 65.55 percent of total households surveyed in selected villages of various blocks of the district. The village wise analysis exhibited a regional variation in share of dairy farmers on account of socio economic structure of households, distance from roads and urban centers as well as location of various milk processing and collection centers. It varies between 53.33 percent [Alampur (kath)] and 83.33 percent (Mehrawal) among sampled villages of the district under study. Similarly block wise analysis also exhibited spatial variation in term of proportion of dairy farmers to the total farmers/ households (Table1). The villages very close or immediate adjacent to Aligarh city have relatively high proportion because urban and peri- urban area have agricultural land for urban land use and so the farmers adjacent to urban area come to city for selling their milk to either households or same processing units. The villages with the high concentration of socially and economically backward class like Lodha, Saini, Yadav and Poor Muslims, showed higher share of dairy farmers to total households in the village.

Table1. Proportion of Dairy Farmers to Total Households Surveyed in Aligarh District

Name of Village	Block Name	Total Household	No. of Households Surveyed	No. of Household Involved in Dairying	% of Households Involved in Dairying
Mehrawal	Lodha	1500	30	25	83.33
Bonner	Dhanipur	450	30	24	80
Havatpur fagoi	Lodha	70	30	22	73.33
Amrauli	Jawa	1200	30	20	66.66
Madrak	Lodha	550	30	18	60
Karsua	Lodha	800	30	19	63.33
Ahmadpura	Atrauli	300	30	17	56.66
Jaitholi	Eglas	250	30	16	53.33
Alampur(kath)	Akrabad	250	30	16	53.33
Total	9	5370	270	177	65.55

Source: Data collected through field survey 2015

2.2. Social Profile of Dairy Farmers

India is the country of social stratification. It is penetrated and enrooted in every sphere of life of people. Politically, three social groups' i.e. high castes, other backward castes and scheduled castes/ tribes are recognized. Livestock husbandry in general and dairy farming particular controlled by backward classes, as evident from some studies, in India (Khan, N. et.al.2012.). Table 2 shows caste wise proportion of dairy farmers in various sampled villages and blocks of district. Study reveals that out of 270 surveyed dairy farming households, 87 belong to high caste, 109 to other backward castes and 84 to scheduled castes with a share of 32.22, 40.37 and 27.40 percent respectively. The proportion of various social groups of dairy farming households varies from village to village and block to block. The share of farmers of other backward castes ranged from 10 percent in Karsua of Lodha block to 76.66 percent in Amrauli in Jawa block (Table 2). The higher share of OBC dairy farmers is due to the fact that they are usually marginal and small farmers and also their household members are hard workers and engaged in various forms of agricultural activities. In dairy farming they, generally, do not hire labors from outside but women and children do several indoor work related to rearing of livestock. The availability of fodder from straw of crops and feed grains from the same crops encouraged the farmers to have milch animals like buffalo and cattle for commercial purpose.

The high castes group exhibited their share in dairy farming in the study area as 32.22 percent on an average at district level. They rank second next to OBC. Similarly, their share varies from village to village and from block to block. It is ranging between 13.33 percent in Amrauli village and 66.66 percent in Karsua village. The low proportion of high castes as dairy farmers is due to their rather low proportion in social demographic structure as well as their big size of land holdings in which crop farming of various value added market oriented crops prove economically more profitable than dairy

farming. They are socially up graded and their household members little prefer to do work in field or rear livestock thinking them as low grade works. They hire labors on daily wages which make dairy farming costly and non-remunerative for them. Besides, the females, whose share is very high in livestock husbandry, are not allowed to do outdoor works in such groups of high social profile.

Moreover, the share of scheduled castes in dairy farming is at the lowest level of 27.40 percent at district level. Their shares also show the regional variation from village to village. It is ranging between 10 percent in Amrauli in Jawa block and 13.43 percent in Bonner in Dhanipur block (Table 2). The representation of scheduled castes at minimal level in dairy farming is attributed to absence of land holding with them as well as deficiency of capital for purchasing buffalo which requires at least Rs.50, 000.00 for one milch buffalo in the study area. They are working as laborers in the process of rearing, but not in milking and marketing as the people do not prefer to have the milk processed by their hands socially, though much upgradation, both socially and politically, has been made after independence. However, some of them rearing and having dairy farming especially in urban areas, based hired land and purchased inputs of fodder and some other animal food nutrients from external sources.

Table2. Proportion of Various Castes to Total Households Involved in Dairy Farming in Selected Villages of Peri- Urban Area of Aligarh

Village Name	No. of Sampled H. H. Surveyed	High Castes	% to total sampled H.	OBCs	% to Sampled H.H.	SC/ ST	% to Sampled H.H.
Mehrawal	30	18	60	5	16.66	7	23.33
Bonner	30	8	26.66	9	30	13	43.33
Havatpur fagoi	30	7	23.33	18	60	5	16.66
Amrauli	30	4	13.33	23	76.66	3	10
Madrak	30	7	23.33	10	33.33	13	43.33
Karsua	30	20	66.66	3	10	7	23.33
Ahmad pura	30	4	13.33	18	60	8	30
Jaitholi	30	4	13.33	18	60	8	26.66
Alampur(kath)	30	15	50	5	60	10	33.33
Total	270	87	32.22	109	40.37	74	27.40

Source: Data collected through field survey 2015

2.3. Gender Wise Participation of Dairy Farmers

Livestock husbandry in particular and agriculture in general is also controlled by both female and male members of farmers' households. But females' participation and contribution is not well acknowledged as it is not considered as formal work recognized by census department. A larger share of invisible agriculture work is performed by women in rural India. Dairy farming, however, is very much associated with women participation (Jost, C. 2004.). The participation of females in dairy farming in different sampled villages of Aligarh district is given in table 3. Study reveals that about 1/3rd of the total persons involved in dairy farming are from female group which varies from village to village depending upon socio economic profile of households living in a village. Higher the socio-economic status implies lower women participation and vice-versa. It varies between 45.83percent in Bonner and 37.5percent in Havatpur fagoi (Table3).

Table3. Gender Wise Distribution of Persons involved in Dairy Farming Selected Villages of Peri- Urban Area of Aligarh

Name of the Village	No. Households Surveyed	No. of Persons Involved in Dairying	Males	%	Females	%
Mehrawal	30	260	160	61.53	100	38.46
Bonner	30	240	130	54.16	110	45.83
Havatpur fagoi	30	160	100	62.5	60	37.5
Amrauli	30	220	130	59.09	90	40.90
Madrak	30	205	115	56.09	90	43.90
Karsua	30	190	110	57.89	80	42.10

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Ahmad pura	30	150	90	60	60	40
Jaitholi	30	130	80	61.53	50	38.46
Alampur(kath)	30	110	65	59.09	45	40.90
Total	270	1665	980	58.85	685	41.15

Source: Data collected through field survey 2015

2.4. Education Status of Dairy Farmers

Education status is one of the important indicators of human development. It is usually believed that Indian farmers are less educated. But the study, at micro level, of the dairy farmers showed very positive result. 74.77 percent of surveyed dairy farmers, as evident from table4, are literate. Majority of them are educated up to primary level, only fulfill the criteria of literate to read and write. They share 33.93 percent while the farmers having secondary and above secondary level of education share 24.32 and 16.46 percent to total respondents respectively. The status of education at different level varies from village to village in the study area. The proportion of farmers with primary education varies from 23.07 percent in Jaitholi to 41.46 percent in Madrak in Lodha block. While secondary level educated dairy farmers varies between 28.12 percent in Havatpur fagoi in Lodha block and 21.05 percent in Madrak of Lodha block. Secondary plus level educated dairy farmers ranged between 9.75 percent in Madrak (Lodha Block) and 21.15 percent in Mehrawal (Lodha Block) as shown in the (table4). The area under study, however, exhibited educated dairy farmers due to development of educational institutions ,both private and government regulated, after Independence through the literacy and education missions adopted by national and provincial govt. and NGO's particularly in Aligarh district.

Table4. Educational Profile of the Persons Involved in Dairy Farming in Selected Villages of Peri- Urban Area of Aligarh

Name of Village	Number of persons involved in dairying	Primary	%	Secondary	%	Above secondary	%	Total literate	%	Total illiterate	%
Mehrawal	260	90	34.61	70	26.92	55	21.15	215	82.69	45	17.30
Bonner	240	75	31.25	65	27.08	40	16.66	190	79.16	50	20.83
Havatpur fagoi	160	50	31.25	45	28.12	30	18.75	115	71.87	45	28.12
Amrauli	220	80	36.36	50	22.72	40	18.18	170	77.27	50	22.72
Madrak	205	85	41.46	45	21.95	20	9.75	150	73.17	55	26.82
Karsua	190	50	26.31	40	21.05	30	15.78	120	63.16	70	36.84
Ahmad pura	150	60	40	35	23.33	25	16.66	120	80	30	20
Jaitholi	130	30	23.07	30	23.07	20	15.38	90	69.23	50	38.46
Alampur(kath)	110	45	40.90	25	22.72	15	13.63	75	68.19	35	31.81
Total	1665	565	33.93	405	24.32	275	16.51	1245	74.77	430	25.83

Source: Data collected through field survey 2015

2.5. Economic Profile of Dairy Farmers

Economic status of dairy farmers is reflected in their income and size of landholding. Several studies have shown that livestock husbandry is practiced by mainly poor and poor farmers in developing countries. Size of stock is small on an average 1-2head of livestock. The present study of Aligarh district exhibits almost same pattern with slight improvement. About 48.51 percent of respondent involved in dairy farming belong to marginal and small farmers with less than one hectare and one to three hectares of land respectively. Medium and big farmers contributed to 33.33 and 3.33 percent of total dairy farming workers. Respectively these four groups of dairy farmers on the basis of size of land holding show spatial variation from village to village. The proportion of marginal and land less dairy farmers varies between 30 percent in Jaitholi village of Iglas block and 63.33 percent in Mehrawal of Lodha block. Medium farmers varies from 3.33 percent in Bonner (Dhanipur block) to 33.33 percent in Havatpur fagoi (Lodha block) while the small dairy farmers ranges between 6.66 percent in Havatpur fagoi and 50 percent in Jaitholi village from Lodha and Eglas block respectively. Similarly, big farmers

also vary between 33.33 percent in Karsua and 10 percent in Alampur(kath) from Lodha and Akraabad block (Table5). Analysis of data and observations from field survey reveal that the dairy farmers and other allied workers are from economically poor and unprivileged groups of population. It is because that their small size of land holding is not economically viable only with crop farming and even the household's members have no full work for days and remain unemployed or under-employed. The dairy farming is an alternate option of employment and improve the economic viability of farming through dairy- cropping integrated farming system in which crops' by products like straw, feed grains etc. are used for feeding animals and in return animal by-products manures used in crop farming. It reduces the input costs through mutual adjustment of basic requirements for both farming systems. An unemployed member also gets opportunity for jobs in dairy farming and also reduces the labour input costs, consequently rather high profit. Contrary to it , farmers of big size of land holdings show rather lower share in dairy farming in the study area due to the reason that their big size of farms are suitable for cultivation of remunerative mono crop like potato, sugarcane, oilseeds, high variety of rice and wheat which are done fully mechanically and not much labor is required. But in dairy farming, such farmers have to hire labours for rearing, cleaning, milking and even marketing, which reduce the benefit comparatively.

Income of the farmers or capital for investment is one of the important determinants of development of dairy farming in the study area. The cost of milch big ruminants like buffalo and cows are rather high on an average Rs.40, 000.00 in the study area. The study of dairy farmers according to their annual saving income as evident from table 6 shows the domination of lowest income slab of farmers with 42.22 percent of total respondents of dairy farming. Increasing income slab is inversely related with proportion of dairy workers in the study area of Aligarh district. 2/3rd of total dairy households in the area have annual income less than 2 lakh rupees. Such income group of household could manage only 1-3 milch livestock along with their small size of land holding. The meager capital is not sufficient for any other business. Dairy occupation gives daily income as well as food (milk) to the farmers along with dung cakes for domestic fuels. While the households of higher income level more than 2lakh rupees showed little interest in dairy sector as they invested their capital for other economic activities like business, trade and real estate. They usually have big dairy farms with more than 5 heads of livestock, if practice, in area under study. Scaling up of dairy farming has taken place but at slow rate, due to intensification and commercialization of livestock husbandry in recent decades.

Table5. Size of Landholdings Owned by Persons Involved in Dairy Farming in Selected Villages of Peri- Urban Area of Aligarh

Name of Village	Total Households surveyed	Landless/marginal	%	Small	%	Medium	%	Large	%
Mehrawal	30	19	63.33	5	16.66	4	13.33	2	6.66
Bonner	30	16	53.33	12	40	1	3.33	1	3.33
Havatpur fagoi	30	17	56.66	2	6.66	10	33.33	1	3.33
Amrauli	30	18	60	9	30	2	6.66	1	3.33
Madrak	30	15	50	12	40	1	3.33	2	6.66
Karsua	30	12	40	13	43.33	4	13.33	1	3.33
Ahmad pura	30	14	46.66	8	26.66	6	20	2	6.66
Jaitholi	30	9	30	15	50	4	13.33	2	6.66
Alampur(kath)	30	11	36.66	9	30	7	23.33	3	10
Total	270	131	48.51	85	21.48	39	14.44	15	5.55

Source: Data collected through field survey 201

2.6. Proportion of Dairy Farmers on The Basis of Their Primary Occupation

The dairy farming households follow various occupations like agriculture (crop farming), dairy farming, agricultural labour and business with changing priority. The households with cropping as primary occupation share 19.25 percent in the district as a whole. It varies from 33.33 percent to 6.66 percent in Jaitholi and Bonner (Iglas and Danipur Block). Dairy farming as a primary occupation, 65.55 percent sampled households are found where as 7.03 percent and 4.81 percent of respondents are following agriculture labour and business as their primary occupation respectively when working in dairy farming . Their shares also vary from village to village in the study area (Table7.). It is evident from the analysis that dairy farming in the study area is practiced as a part time occupation along with

cropping agriculture or with some other non-agricultural activities. Majority of the households follow livestock-cropping integrated farming system which is highly sustainable and economically viable and socially acceptable to backward group of the society.

Table6. Level of Household Income in Selected Villages of Peri- Urban Area of Aligarh

Name of the Village	Total Households Surveyed	UP to 50000	% of total income	1-2lakh	% of total income	2-3lakh	% of total income	More than 3 lakh	% of total income
Mehrawal	30	13	43.33	8	26.66	6	20	3	10
Bonner	30	11	36.66	9	30	5	16.66	5	16.66
Havatpur fagoi	30	15	50	10	33.33	3	10	2	6.66
Amrauli	30	9	30	12	40	7	23.33	2	6.66
Madrak	30	12	40	8	26.66	4	13.33	6	20
Karsua	30	10	33.33	10	33.33	9	30	1	3.33
Ahmad pura	30	11	36.66	12	40	6	20	1	3.33
Jaitholi	30	16	53.33	8	26.66	4	13.33	2	6.66
Alampur(kath)	30	17	56.66	8	26.66	3	10	2	6.66
Total	270	114	42.22	85	31.48	47	17.40	24	8.88

Source: Data collected through field survey 2015

Table7. Occupational profile of Households in Selected Villages of Peri- Urban Area of Aligarh

Village	Households Surveyed	Agriculture	% of Total H.H	Dairy farming	% of Total H.H	Agricultural labourer	% of Total H.H	Business	% of Total H.H	Other	% of Total H.H
Mehrawal	30	3	10	25	83.33	1	3.33	1	3.33	0	0
Bonner	30	2	6.66	24	80	2	6.66	1	3.33	1	3.33
Havatpur fagoi	30	4	13.33	22	73.33	2	6.66	1	3.33	1	3.33
Amrauli	30	5	16.66	20	66.66	2	6.66	2	6.66	1	3.33
Madrak	30	5	16.66	18	60	3	10	2	6.66	2	6.66
Karsua	30	6	20	19	63.33	2	6.66	1	3.33	2	6.66
Ahmad pura	30	8	26.66	17	56.66	2	6.66	1	3.33	2	6.66
Jaitholi	30	10	33.33	16	53.33	2	6.66	2	6.66	2	6.66
Alampur(kath)	30	9	30	16	53.33	3	10	2	6.66	2	6.66
Total	270	52	19.25	177	65.55	19	7.03	13	4.81	13	4.81

Source: Data collected through field survey 2015

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