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Socioeconomic conditions of rural women and their participation in livestock management activities in Chiniot District of the Punjab, Pakistan

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ABSTRACT

Background: Livestock raising is an essential part of the agro-based rural economy of Chiniot District. The role of women in different activities relating to livestock management is crucial and needs to be recognized properly. Improvements in this sector by proper attention on women's participation can play a vital part in the progress and prosperity of the area.

Objectives: The basic objectives of the study were to assess the socio-economic conditions of rural women of Chiniot district and the extent of their participation in livestock management activities

Methods: The study is primarily based on firsthand data, collected from randomly selected 15 villages, five from each of the three tehsils of the district. In total 600 women, 40 from each village were randomly selected and interviewed. For field survey, a comprehensive questionnaire containing over 30 queries about the women's socioeconomic conditions and participation in 15 livestock management activities was used. The data was processed to draw results using quantitative techniques and computer software's SPSS-25 and ArcGIS-10.7.

Results: Results show that most of the women in the study area are illiterate. Most of them are married, living in joint families having limited income and average socioeconomic conditions. Agriculture and livestock are their main occupations. They spend maximum time in managing livestock and support their families. They play dominating role in milk processing, making and storing of dung-cakes, feeding, watering and bathing animals, caring diseased animals and new born babies, fodder cutting and collection, cleaning animal sheds, collection of manure

Conclusions: The study concluded that socioeconomic conditions of the rural women of Chiniot district are average and their contribution in livestock management activities is incredibly high and crucial. For the improvement of this important sub-sector of the economy and its contributing women, special attention of the concerned departments and stakeholders is direly needed

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1. INTRODUCTION

Pakistan is a developing and fifth biggest country of the world having vast and varied rural sector and basically an agrarian socioeconomic setup. About 63% of its population is inhibited in rural areas engaged predominantly in agricultural activities (Pakistan Economic Survey, 2020). Agriculture sector has been and may remain the mainstay of its economy. The livelihood of the rural population, either directly

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or indirectly, depends upon agriculture and its sub-sector livestock farming (LF) which is a popular activity in rural areas. About 50% of the Pakistan's agricultural GDP comes from livestock. Thus, this sector can play vital role for the progress and prosperity of the country if attention is paid on its proper management. Worth of LF has been recognized widely by the researchers due to its diverse benefits at household, local and regional level (Ahmad & Ma, 2020; Ahmad, 2013; Akram et al., 2019; Jamali, 2009; Javed et al., 2006; Khan & Khan, 2015; Luqman et al., 2014; Naz & Khan, 2018; Oluwatayo & Oluwatayo, 2012) Over the years, LF has emerged an important sub-sector of the agricultural economy of Pakistan. Traditionally, it has been a key source of household cash income for rural inhabitants. It plays a fundamental role in sustaining rural livelihoods of especially poor disadvantaged women and families who have limited land and other economic assets (Gurung et al., 2005). Over 8 million rural families in the country are engaged in livestock production earning 35 to 40% of their income from this sector. It is also a source of foreign exchange earnings contributing about 3.1% in total exports (Pakistan Economic Survey, 2020). With a little focus of the government, this sector can play a significant role for poverty alleviation, economic growth and food security in the country. Presently, the total livestock population in the country is about 207.4 million and its contribution to agricultural value addition is about 60.56% and to National Gross Domestic Production (GDP) is 11.69% (Pakistan Economic Survey, 2020). Contributing almost half of the country's agricultural GDP, this sector is run not only by men, women also play a substantial part in livestock production. They indeed, are a major human resource and play vital role in the development of their households. They are major contributor in livestock management activities (LMA) across the developing countries including Pakistan (Naz & Khan, 2018). Socioeconomic conditions of rural women play an important role as a determinant of their involvement in LMA. In this regard, women age, marital status, literacy rate and level of education, household size and income, size of landholdings etc. play significant role.

Like many other parts of the world, rural women of Chiniot district also play an imperative role in livestock management practices. In most of the rural areas, they are actively involved in the livestock production activities (Amin et al., 2010). They are responsible for livestock management and carry out a number of activities related to animal production like fodder cutting and chopping, feeding, watering ,curing and milking animals, milk processing, cleaning of animal sheds, collection of fuel, making and storing dung-cakes and caring of diseased animals and new born babies of animals (Amin et al., 2009; Arshad et al., 2013; Hashmi, 2009). In some cases, they along with their partners also contribute in making decisions of families and livestock (Arshad et al., 2010). Many of them stay busy from sunrise to sunset to provide food to men in the fields, fetching water, collection of fuel and livestock management. However, in case of the study area, the extent of women participation in LMA and the problems they face have not been aptly addressed. If properly encouraged through various supporting schemes, they can play highly effective role in economic development of the area. Certainly, a close relationship exists between agricultural growth and economic development. The growth of others sectors is based on agricultural growth especially in developing countries like Pakistan (Afzal et al., 2009). Its sub-sector LF can play a vital role in the progress and prosperity of the country if attention is paid on its effective planning and management. Past studies indicate that rural women in Pakistan are intensively engaged in numerous LMA and contributing in the welfare of their families (Hashmi, 2009). They play a major part in poverty alleviation by raising the family income (Hashmi et al., 2007). Their contribution is significant in both crop and livestock farming. A study conducted on the districts of Pothohar plateau asserted that the role of women is most significant in LMA of the region (Taj et al., 2007).

In sum, due to the significance of the subject, a wide range of studies regarding women participation in LMA, hitherto, have been conducted in different parts of the world including Pakistan(Ahmad, 2013; Andaleeb et al., 2017; Ejembi et al., 2006; Jabeen et al., 2020; Luqman et al., 2012; Munawar et al., 2013; Naz et al., 2020; Nosheen et al., 2011; Shafiq, 2008). However, such kinds of studies about Chiniot district are highly sporadic. The study in hand was thus initiated with the purpose to close this gap. Its main

objective was to examine socioeconomic conditions of the women carrying out LMA and to assess the extent of their participation in these activities focusing on to the Chiniot district of the Punjab province of Pakistan.

2. METHODS

2.1 Study design

Employing case study design, this research has used cross-sectional data. The case area for this study is Chiniot district and data used was collected in single point of time.

2.2 Setting

With a geographic area of 2,643 square kilometres and located at an elevation of 593 feet above the mean sea level, Chiniot district extends between 72° 58' to 73° 0' East longitudes and 31° 43' to 31° 44' North latitudes (Pakistan Bureau of Statistics, 2017). From a Tehsil of Jhang district, Chiniot was given the status of separate district in February 2009. It is inhabited by 1,369,740 persons, 51.15% males and 48.85% females. Density of population in the district is 518.25 persons per square kilometre. Just 30.85% population of the district lives in urban areas (Table 1). Chiniot is an important district of Pakistan, especially from the point of view of agriculture and livestock raising. It is a true representative of the agricultural districts of the Punjab as crop farming and livestock rearing are the main economic activities in its rural areas. Presently, the district comprises of three tehsils namely, Lalian, Chiniot and Bhawana. According to 2017 population census of Pakistan, 69.15% population of the district is inhabited in villages (Pakistan Bureau of Statistics, 2017). Over all literacy rate of the district is low and most of its population is engaged in crop farming and livestock rearing and also contributing in the economy of this area. Hot in summer and cold and dry in winter are main features of the climate of Chiniot district. As the region is suitable for livestock raising, most of its rural population is engaged in this activity.

Table 1 Selected population features of Chiniot district

Sr. No.	Title	Overall	Rural	%	Urban	%
1.	Total population	1,369,740	947,202	69.15	422,538	30.85
2.	Male population	700,601	484,076	69.09	216,525	30.91
3.	Female population	669,057	463,093	69.21	205,964	30.79
4.	Trans gender population	82	33	40.24	49	59.76
5.	No. of households	218,607	150,625	68.90	67,982	31.10
6.	Gender ratio	104.71	104.53	- -	105.13	- -
7.	Population growth rate	1.86	1.64	- -	2.37	- -

Source: (Pakistan Bureau of Statistics, 2017)

2.3 Data sources

Though, secondary data has also been used but the study is mainly based on primary data collected through field survey with the help of pre designed questionnaire. Chiniot district comprises of 354 villages out of which 15 villages, 5 from each of the three Tehsils were randomly selected for this study. Then, using multistage random sampling technique, 600 women, 40 from each village were randomly selected from the households involved in livestock raising. The overall population of 15 sample villages was 50,651 persons out of which 26,356 were males and 24,295 were females. The population size of the selected villages varied from 744 inhabitants in Naurangewala to 7240 inhabitants in Wallah Table 2 shows the sample villages along with location tehsils and gender composition of population and Map 1 shows the location of these villages. The sample size for overall population of the selected villages was determined using online sample size calculator with the confidence level 95% and confidence interval 4.

The selected women were interviewed and responses about 14 indicators of socioeconomic conditions (Table 3) and 15 LMA (Table 4) were recorded. The age of respondents was measured in completed years. Three point Likert (1932) scale of always, occasionally and never was applied to determine the extent of women participation in LMA (Jacoby & Matell, 1971; Likert, 1932; Norman, 2010).

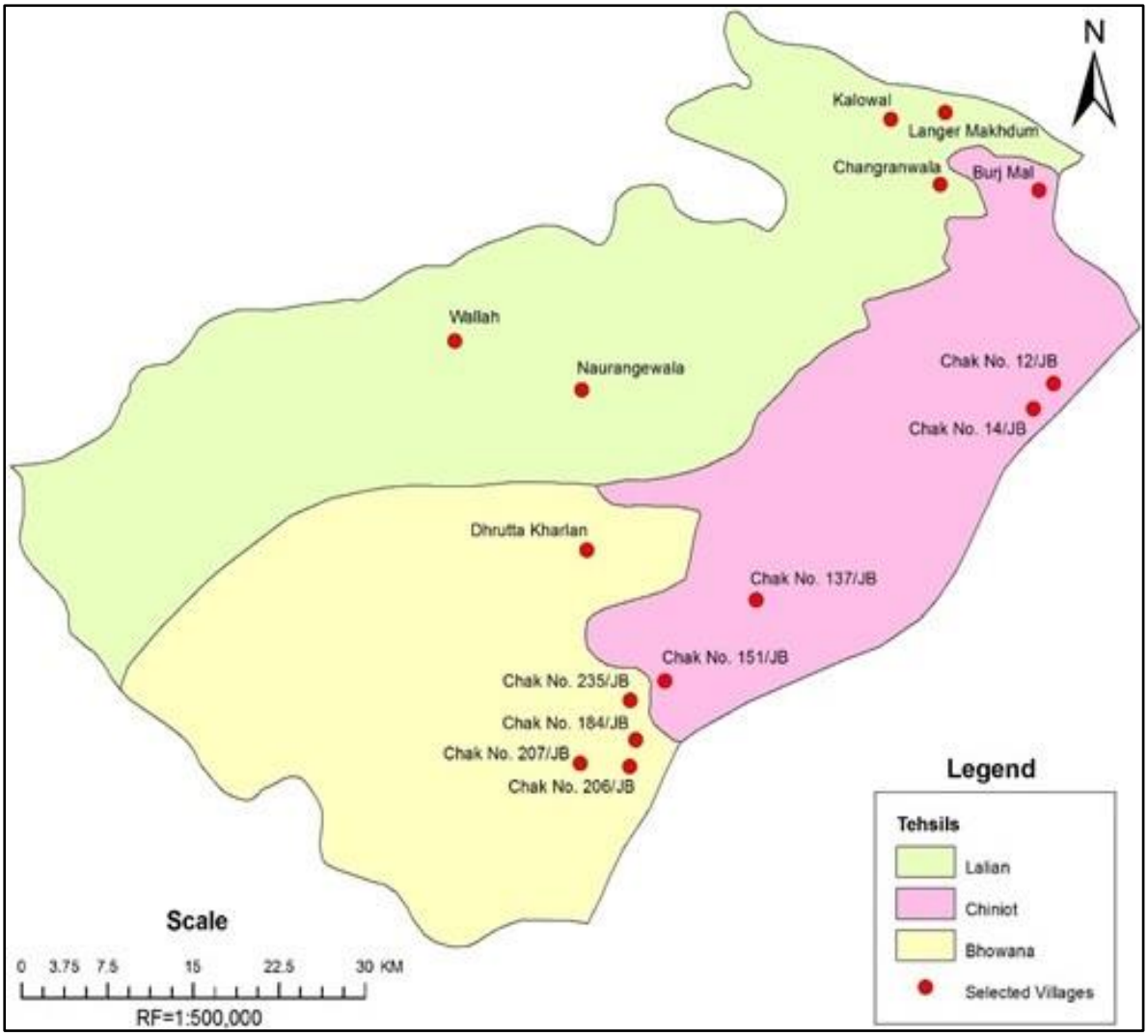

Figure 1 Location of selected villages in Chiniot district
Source: Made by authors

2.4 Sample design

Sampling plan was prepared according to the objectives of the study and cultural traits of the study area. It contained the location and accessibility of sample villages, types, number and method of sample selection, and quality control of the collected data. Overall, 600 women, 40 from each of the selected 15 villages were chosen through random sampling for interview. For field survey, a comprehensive questionnaire containing over 30 queries consisting of open ended and closed ended questions about the women's socioeconomic conditions and participation in LMA was used.

2.5 Data analysis methods

The data was processed using quantitative techniques and computer software's SPSS-25 and ArcGIS-10.7 to draw the results. Descriptive statistics like frequency, mean, standard deviation and rank order were computed to show the results and meet the objectives of the study.

Table 2 Location tehsil, population and gender composition of population in sample villages

Code	Village Name	Location tehsil	Population	Male	%age	Female	%age
1.	Langar Makhdum	Lalian	3394	1731	51.00	1663	49.00
2.	Kalowal	Lalian	3717	1952	52.51	1765	47.49
3.	Changranwala	Lalian	4315	2244	52.00	2071	48.00
4.	Wallah	Lalian	7240	3793	52.39	3447	47.61
5.	Naurangewala	Lalian	744	380	51.07	364	48.93
6.	Burj Mal	Chiniot	989	535	54.09	454	45.91
7.	Chak No. 12 /JB	Chiniot	3357	1719	51.20	1638	48.80
8.	Chak No. 14 / JB	Chiniot	3542	1851	52.26	1691	47.74
9.	Chak No. 137 /JB	Chiniot	1653	885	53.54	768	46.46
10.	Chak No. 151 /JB	Chiniot	4393	2274	51.76	2119	48.24
11.	Dhrutta Kharalan	Bhawana	3347	1714	51.21	1633	48.79
12.	Chak No. 184 /JB (W)	Bhawana	5900	3071	52.05	2829	47.95
13.	Chak No. 235 /JB	Bhawana	2924	1548	52.94	1376	47.06
14.	Chak No. 206 /JB	Bhawana	2282	1176	51.53	1106	48.47
15.	Chak No. 207 /JB	Bhawana	2854	1483	51.96	1371	48.04
Total	15 villages	-	50651	26356	52.03	24295	47.97

Source: Local Government & Community Development Office Chiniot

3. RESULTS

3.1 Socioeconomic conditions of women

Demographic and socioeconomic conditions play an important role in determining the extent of rural women's participation in LMA. Following 14 indicators were considered crucial and investigated (Table 3).

3.1.1 Age composition

Results show that proportion of mature and experienced women was high compared to young and aged women as for as their participation in LMA was concerned. Among all surveyed women, 61.8% belonged to age group 30-44 years, 31.5% belonged to age group 45-49 years and 6.7% belonged to age group of 15-29 years.

3.1.2 Marital status

With regard to marital status, 84.7% of the women engaged in LMA were currently married, 10.5% were widow and 4.8% divorced. Currently married women have a wide range of household responsibilities to support their families as well as they are supported by their husbands in performing LMA.

3.1.3 Literacy and level of education

The results reveal that vast majority of the respondent women (76%) engaged in LMA were illiterate followed by 19.2%, 2.5% and 2.3% who acquired primary, middle and secondary level education respectively. The basic reason of low literacy rate among women was their cultural customs and restrictions, poverty, lack of awareness about the benefits of education, scarce and inaccessible educational opportunities.

3.1.4 Employment status

Data shows that 85.5% of the respondents engaged in LMA were performing other family duties also as housewives, 11.7% were involved in labor work and just 2.8% were doing government and private jobs.

3.1.5 Health conditions

Results indicate that 56.8% women were in good health conditions and they have not faced any serious health issue during the preceding tow years. About 37.4% were in average health and 5.8% in poor health conditions.

3.1.6 Access to sources of information

About 56.8% of the women had access to TV followed by Radio (16.3%) and other media sources (7.7%) while19.2% had no access to any source of information mainly due to lack of interest and shortage of time. All the literate women and relatively high-income families were using TV as a source of information and their preferred programmes were dramas, news and religious talks. Some religious families were against the use of TV. Most of the aged and illiterate people use radio as a source of information and leisure.

Table 3 Socio-economic characteristics of the surveyed women (N= 600)

Socio-economic characteristics	Categories	f	%
Age composition	15-29	40	06.7
	30-44	371	61.8
	45-59	189	31.5
Marital status	Currently married	508	84.7
	Widow	63	10.5
	Divorced	29	04.8
Literacy and level of education	Illiterate	456	76.0
	Up to primary	115	19.2
	Middle	15	02.5
	Secondary and above	14	02.3
Employment status	Housewives	513	85.5
	Laborers	70	11.7
	Govt. servants	17	02.8
Health conditions	Good	341	56.8
	Average	224	37.4
	Poor	35	05.8
Source of information	TV	341	56.8
	Radio	98	16.3
	Others	46	07.7
	No access	115	19.2
Practice of observing veil	Yes	79	13.2
	No	521	86.8
Gender of household head	Male	518	86.3

	Female	82	13.7
Main occupation of household head	Agriculture	298	49.7
	Livestock	66	11.0
	Business	69	11.5
	Govt. service	86	14.3
	Laborer	81	13.5
Household size	Up to 4	115	19.2
	5-6	274	45.7
	Over 6	211	35.2
Family system	Nuclear	215	35.8
	Joint	322	53.7
	Extended	63	10.5
Household's annual income (PKR)	Less than 100,000	170	28.3
	100,000-150,000	58	09.7
	Over 150,000	372	62.0
Ownership of agricultural land	Landowner	409	68.2
	Tenant	62	10.3
	Landowner cum tenant	82	06.2
	Landless	92	15.3
Size of landholdings	1-6 acres	281	46.8
	7-12 acres	88	14.7
	Above 12 acres	139	23.2
	No land	92	15.3

Source: Field survey, 2019. Note. PKR=Pakistani Rupees

3.1.7 Practice of observing veil

Only 13.2% of the interviewed women observe veil (parda) while going outside the residence. Most of them were literate and belonged to young age group, relatively well-heeled and high caste families. Whatever the LMA they carry out, are usually of indoor nature.

3.1.8 Gender of household head

About 86.3% of the households of respondent women were headed by males and only 13.7% were headed by females. About 85% of the heads were currently married, 68.6% of them belonged to ages 30-44 years and their main responsibility was to support the families. Overall, 9.2% of households are headed by widowers and 5.8% by divorced persons.

3.1.9 Family system

Joint family system was found widely prevalent as 53.7% of the respondents were living in joint families, followed by nuclear and extended family systems with 35.8% and 10.5% shares respectively. Most of the respondents belonging to nuclear families had poor gender relations with their counterparts and they were given no right of making decisions about family matters and livestock. These findings are in line with an earlier study by Hassan et al. (2008) on Punjab province of Pakistan.

3.1.10 Size of household

The study found that 19.2% of the respondent's size of household was up to 4 persons and most of them belonged to nuclear families. Household size of 45.7% respondents was 5-6 persons and most of them belonged to joint families. About 35.2% of respondent's household size was over 6 persons and most of them were illiterate and labourers.

3.1.11 Main occupation of household head

Table 3 shows that main occupation of 49.7% of the household heads was agriculture, 14.3% were government servants, 13.5% were labors, 11% were entirely dependent on livestock farming, and 11.5% were in business. The families completely dependent upon livestock farming as a source of income were raising animals on their own lands. Landless and poor families were dependent upon labour work as a main source of income.

3.1.12 Household income

In the study area, in addition to livestock, families of the respondents have other sources of income too. The sum of income earned from all sources by all earning members of a family during a year is called as household's annual income. Results demonstrate that 28.3% households were earning less than Rs. 100,000 per year, 9.7% were earning from Rs. 100,000 to Rs. 150,000, and 62% were earning more than Rs. 150,000 annually.

3.1.13 Land ownership

According to agricultural land possession, respondent's families were categorized into landowner, tenant, landowner cum tenant, and landless. Results show that 68.2% families were landowner, 10.3% were tenants, 6.2% were landowner cum tenants, and 15.3% were landless families. Most of the respondents of tehsil Lalian had their own lands but on the other hand most of the respondents of tehsil Bhawana were tenants or landowner cum tenant farmers.

3.1.14 Size of landholdings

About 46.8% families of the respondents had small landholdings consisting of 1-6 acres, 14.7% had 7-12 acres of land, and 23.2% had landholdings larger than 12 acres while 15.3% families were landless. The ownership of landholdings was mostly in the hands of household heads.

3.2 Women's participation in livestock management activities

The study investigated following 15 livestock management activities carried out on daily basis in the rural areas of Chiniot district (Table 4 & Figure 1).

3.2.1 Fodder cutting

This activity refers to the reaping of fodder crops and grasses from the fields to serve the animals as feed. In the study area, this activity is predominantly performed manually using hand tools like sickles and hand hoes. Out of the 600 surveyed women, 36.3% were engaged permanently on daily basis, 32.2% occasionally and 31.5% were never involved in this activity.

3.2.2 Fodder collection

It refers to the gathering of fodder crops and grasses from the fields and carrying or transporting them to the animal sheds and other feeding places. The collected fodder is then processed for serving animals. Out of the total surveyed women, 34.3% were engaged on daily basis, 36.2% occasionally and 29.5% were never involved in fodder collection activity.

3.2.3 Feed serving

In this activity, animals are served chopped green or dry fodder, or a mixture of both in specific feed containers known as hayracks or specially built fixed structures locally known as Khurli. Out of the total surveyed women, 54.8% women were engaged permanently, 27.7% occasionally and 17.5% were never engaged in this activity.

3.2.4 Watering animals

This activity is concerned with the serving drinking water to animals either in their sheds or taking them out to a nearby water source like water pond, tube-well or canal etc. Out of the total surveyed women, 49.2% were involved permanently, 24.8% occasionally and 26% were never involved in this activity.

3.2.5 Grazing animals

This activity refers to taking out domestic livestock for outdoor intake of wild vegetation in order to convert grasses and other forages into meat, milk, wool and other animal products. Grazing in Chiniot is often carried out on uncultivated lands. Out of the total samples, 5% were engaged in this activity permanently, 11.5% occasionally and 83.5% were never involved in taking out animals for grazing.

3.2.6 Bathing animals

This activity involves washing of animals with water to keep them clean and healthy. Except for baby animals which are usually bathed indoor, livestock bathing is performed in outdoor water sources. Out of the total surveyed women, 33.8% were performing this activity permanently, 41% were performing occasionally and 25.2% were never involved in bathing of the animals.

3.2.7 Shed cleaning

It refers to the removal of animal excreta and other refuse from the sheds to make them clean, healthy and livable places. Shed cleaning in all the sample areas is done manually using hand implements or rarely hand driven trolleys. Out of the total surveyed women, 30% were engaged permanently, 35.5% occasionally and 34.5% were never involved in this activity.

3.2.8 Making and storing dung-cakes

In this activity animal muck (locally known as gober) is processed to make dung cakes used as a fuel for cooking. Dung-cakes are made, dried in sunshine and stored in safer places to protect from humidity predominantly by women. Out of the total surveyed women, 65% were engaged in this activity regularly, 11.5% were performing the activity occasionally and 23.5% were never involved in making of dung-cakes.

3.2.9 Collection of manure

In this activity animal muck and other waste is collected from the sheds and often heaped up at some specified nearby places to prepare manure for further use as organic fertilizer in the fields to reduce the farm expenditures. At the time of need, manure is transported to the fields using different means like animal driven carts and trolleys where it is mixed into the soil to increase land fertility. Out of the total surveyed women, just 16.3% were engaged in this activity permanently, 23% were performing the activity occasionally and 60.7% were never involved in this activity.

3.2.10 Taking animals in and out of sheds

During the winter season which is severe enough in the study area, animals are kept in closed sheds at nights and taken out on sun rise. Contrary to that, in summers, the animals are kept on open places at nights and taken into the sheds during day times to protect them from the severity of sunshine. About 28.8% respondents were engaged permanently, 29% occasionally and 42.2% were never involved in this activity.

3.2.11 Caring sick animals

Animals can get sick like humans and need extra attention to become normal. Sometimes, medicines and specific feed is also required for the ill animals that cause extra economic pressure on the owner. About 52.5% of the surveyed women were engaged in this activity permanently, 31.3% occasionally and 16.2% were never involved in caring of sick animals.

3.2.12 Caring new born babies and young animals

This activity refers to the taking care of feeding, health and living place of calves, lambs and baby goats etc. at household level. About 40.8% women were found to be involved permanently, 28.2% occasionally and 31% were never engaged in this activity.

3.2.13 Marketing of livestock and animals' products

In this activity, animals and their products like wool, milk, butter oil etc. are sold out for cash income. Although, women also participate in this activity, animals are mostly soled by men due to outdoor involvement of dealing mostly with strange people. Just 5.5% of the total surveyed women were engaged in this activity permanently, 9.7% occasionally and 84.8% were never involved in it.

3.2.14 Milking animals

This activity refers to the extraction of milk from buffalos, cows, goats and sheep. In the study area, it is performed manually. Out of the total surveyed women, 31.5% were engaged in milking permanently, 13.7% occasionally and 54.8% were never involved in it.

3.2.15 Milk processing

This activity involves milk treatment and preparation of milk products. In the study area, it is predominantly performed by the women. Surplus milk is converted into yogurt, butter, cheese, butter oil etc. Out of the total surveyed women, 69.3% were engaged permanently, 16.7% occasionally and 14% were never involved in this activity.

Table 4 Women participation in livestock management activities (LMA)

Sr. No.	Livestock management activities	Always		Occasionally		Never		Total	
		3		2		1			
		f	%	f	%	f	%	f	%
1	Fodder cutting	218	36.3	193	32.2	189	31.5	600	100
2	Fodder collection	206	34.3	217	36.2	177	29.5	600	100
3	Feed serving	329	54.8	166	27.7	105	17.5	600	100
4	Water serving	295	49.2	149	24.8	156	26.0	600	100
5	Grazing animal	30	5.0	69	11.5	501	83.5	600	100
6	Bathing animals	203	33.8	246	41.0	151	25.2	600	100
7	Cleaning animal sheds	180	30.0	213	35.5	207	34.5	600	100
8	Making and storing dung-cakes	390	65.0	69	11.5	141	23.5	600	100
9	Collection of manure	98	16.3	138	23.0	364	60.7	600	100
10	Taking animals in and out of sheds	173	28.8	174	29.0	253	42.2	600	100
11	Caring sick animals	315	52.5	188	31.3	97	16.2	600	100
12	Caring new born babies of animals	245	40.8	169	28.2	186	31.0	600	100
13	Marketing of livestock and animal products	33	5.5	58	9.7	509	84.8	600	100
14	Milking animals	189	31.5	82	13.7	329	54.8	600	100
15	Milk processing	416	69.3	100	16.7	84	14.0	600	100

Source: Field survey, 2019. Note. Scale: 3= Always, 2= Occasionally, 1= Never

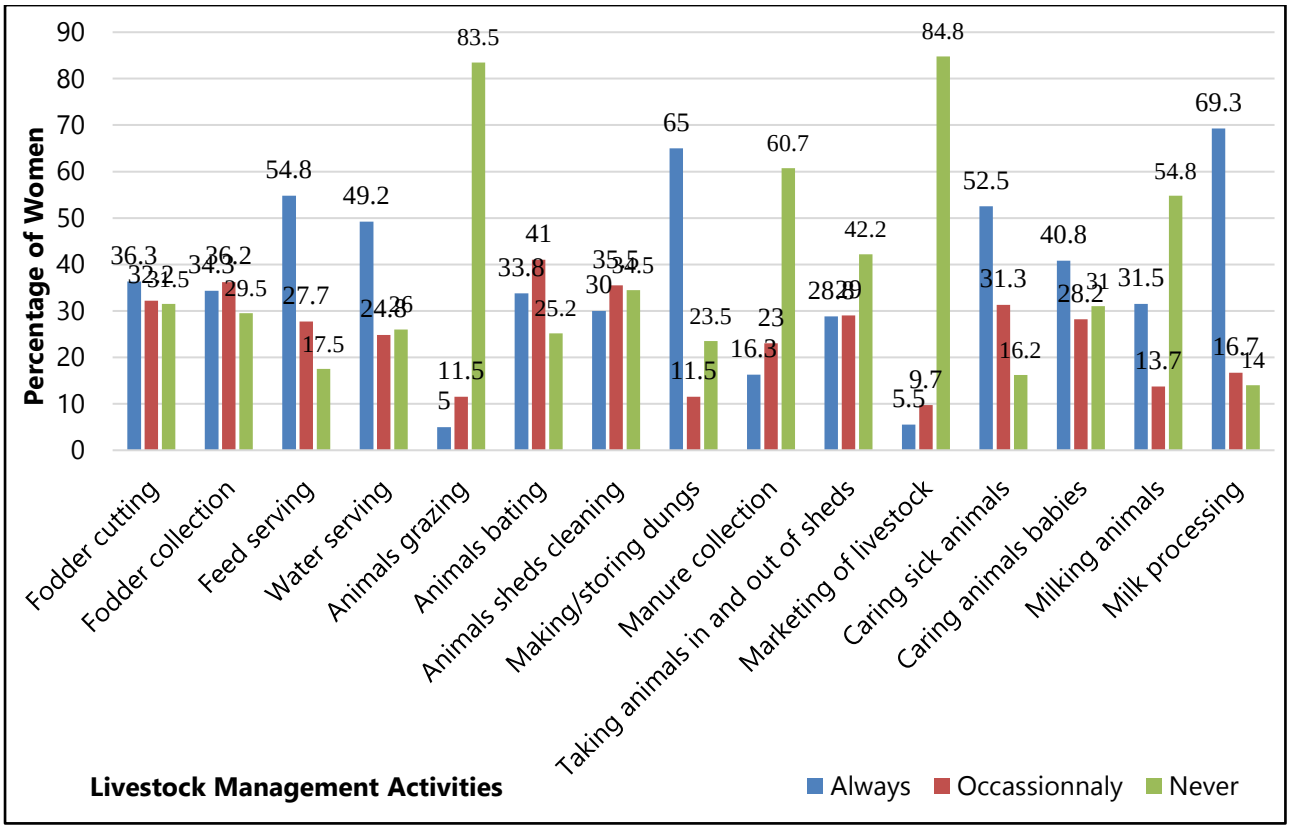

Figure 1 Women participation in livestock management activities

3.3 Extent of women participation in livestock management activities (LMA)

In order to determine the extent of women participation, weighted mean and standard deviation of LMA were calculated and rank orders were assigned according to the mean values. Results show that milk processing activity ranks top in the ordering with mean value of 2.55 followed by making and storing of dung-cakes, feeding animals, caring sick animals etc. (Table 5). According to the scale used to express women participation in LMA, the activities with mean value 2.0 and above show high and those having mean value below 2.0 show low rate of women participation. Their participation in marketing and grazing of livestock animals was lowest. Probably due to cultural restrictions and hard nature of work, these activities are predominantly done by men.

Table 5 Weighted mean, standard deviation, and rank orders of women participation in LMA

Livestock management activities	Mean	Std. deviation	Rank order
Milk processing	2.55	.727	1th
Making and storing dung-cakes	2.42	.845	2nd
Feed serving	2.37	.765	3rd
Caring sick animals	2.36	.745	4th
Water serving	2.23	.836	5th
Caring new born babies of animals	2.10	.843	6th
Bathing animals	2.09	.764	7th
Fodder cutting	2.06	.823	8th
Fodder collection	2.05	.798	9th
Taking animals in and out of sheds	1.95	.803	10th

Shed cleaning	1.87	.833	11th
Milking animals	1.77	.900	12th
Manure collection	1.56	.758	13th
Animal grazing	1.23	.519	14th
Marketing of livestock and animal products	1.21	.524	15th

Source: Field survey, 2019.

Table 6 shows the results of women responses about the extent of their participation in LMA. About 7.5% of the surveyed women work less than 5 hours, 26% work 5-6 hours, 36.3% work 7-8 hours, 19.8% work 9-10 hours, and 10.3% spend over 10 hours per day in LMA. Only 18.7% of the respondents were fully satisfied and favoured women participation in all kinds of LMA whilst 81.3% were not in favour of the women involvement in all kinds of LMA. They opined that women should be just a helping hand in the indoor work and these activities should be performed mainly by men.

Table 6 Women responses about the extent of their participation in LMA

Women responses	Hours	f	%
Hours spend by women in LMA per day	Below 5	45	07.5
	5-6	156	26.0
	7-8	218	36.3
	9-10	119	19.8
	Over 10	62	10.3
Are you satisfied with this occupation and in favour of women participation in all LMA?	Yes	112	18.7
	No	488	81.3
	Total	600	100

Source: Field survey, 2019.

4. DISCUSSION

Traditionally the domestication of animals has been an essential part of rural life in Pakistan. Rural society of the Punjab remained highly dependent upon animals for food production, clothing, ploughing fields, pulling and carrying loads etc. LF is still an essential activity in our rural areas and is almost impossible to carry out without women participation. A strong alliance exists between socioeconomic conditions of women and their participation in LMA. Indicators investigated revealed that age, marital status, level of education and health conditions of respondents, family income, household size, landholding size etc. matter a lot in determining the extent of women's participation in LMA. Participation of unmarried young and aged women in LMA was low. About 61.8% of the respondents belonged to age 30-44 years and 84.7% of them were currently married. This may be attributed to the fact that women of this age group have good health and capability to perform assigned tasks. Women of age group 15-29 years are considered less responsible and due to cultural restrictions, their involvement in such activities is comparatively low. On the other side women of age group 45-59 years are respected more by their families and they usually perform other soft-nature domestic duties. These findings about the women participation in LMA according to their age and marital status are in line with the earlier studies of Pakistan: Qureshi (1996), Sadaf et al. (2005) on Faisalabad, Saghir et al. (2005) on Fateh Jung tehsil, and Amin et al. (2009) on Faisalabad tehsil.

Furthermore, majority of the respondent women (76%) were illiterate and they spend maximum of their time in LMA. Among 24% literate women, maximum level of education attained by only 2.3% was

matriculation. These findings are in line with studies conducted by Rasheed (2004) on Gojra tehsil and by Naveed et al. (2009) on Bahawalpur district. Employment status data indicates that only 2.8% of the respondents were employed in some sort of government or private jobs and vast majority of them were housewives and labourers. This may be attributed to typical rural culture and low literacy rate due to which, the women had no option to work other than LMA and as housewives

Unexpectedly, the health conditions of 56.8% respondents were good and they have not faced any serious health issue during the preceding two years. Most of the women with average and poor health conditions belonged to the age group 30-44 years. Most of them were illiterate, belonged to low-income families and got married at early age compared to those women whose health conditions were good. Repeated pregnancies with short intervals also harmed their health. Some widows and divorced women were also found with poor health conditions attributed mainly to the lack of male supervision. However, the level of participation of these women in LMA was relatively high. The government health facilities were available only in two of the sample villages namely, Kalowal and Chak No. 151/JB and about 42% of the ill women were treated by Hakims (Physicians using traditional methods of treatment). Except for 19.2% of the respondents, all were using TV and radio as source of information. Just 13.2% of them, who belonged to religious or relatively well-off families, were observing veil. Joint family system is widely prevalent and most of the families were headed by men. Family size was highly variable (Table 3). During the survey, it was specifically noted that in Lalian tehsil, the size of households was relatively small, most of the families had their own agricultural land and literacy rate was also relatively high. Family size in fact, determines the extent of women participation, their responsibilities and time allocation for LMA. A large size of family increases the women responsibilities related to other family matters and affects the level of their participation by limiting the allocation of number of hours to LMA. On the other hand, in large families, children and in laws also participate with couples in performing LMA. Main occupation of majority of the heads was agriculture and only 14.3% of them were government servants. Most of the families (68.2%) were landowners practicing crop and livestock faming using their own lands only. Landless families were small in number (15.3%) and remaining were tenants and landowner cum tenant farmers. The two extremes were Lalian tehsil where most of the respondent's families were landowners and Bhawana tehsil where most of the respondent's families were tenants or landowner cum tenant farmers. The size of landholdings also varied greatly from one acre to well above 12 acres. Annual income of households varied from blow 100,000 to over 150,000. Majority of them (62%) were earning over 150,000 per annum (Table 3). This means, most of the families were financially not too weak. These findings are aligned with the study by Narmatha et al. (2009). Although both poor and well-off families were found, the overall socioeconomic conditions of women in research area are not too satisfactory and can be labelled as average. Traditional rural setup along with such kind of socioeconomic conditions pushes the household members, including women, to carryout feasible activities permitted by the physical and cultural environment to support their families. Thus, most the women of study area are involved in LMA.

In line with numerous previous studies (e.g. (Ahmad & Ma, 2020; Akram et al., 2019; Naz & Khan, 2018) the results of the current study revealed that the rural women in Chiniot district of Pakistan perform a wide range of LMA and contribute significantly in the economy of their families. Results show that woman participation rate in some of the LMA was much higher than their male counterparts. Most of LMA activities were performed by women whilst some were performed by both genders. Several women of poor families work in the outdoor activities because they do not have any alternate source of income. On the other hand, the families having large landholdings do not feel any need to send their women to work in outdoor fields. However, more or less, in one way or the other, every woman participated in LMA in the study area. Results shown in Table 4 indicate that women participation is found in all of the 15 enlisted LMA. Table 5 reveals that women participation was high in a sequence, in milk processing, making and storing of dung-cakes, feed serving to animals, caring sick animals, watering

animals, caring new born babies of animals, fodder cutting and fodder collection. Whilst their participation was low in bathing of animals, cleaning of animals' sheds, taking animals in and out of sheds, milking of animals, collection of manure, grazing, and marketing of livestock and animal products (Figure 1). Their participation was highest in indoor and soft nature activities and lowest in outdoor and hard nature activities, specifically those which involve interaction with outsider males. Family and livestock related decisions are usually made by men. Milk processing and its conversion into different products is a popular female activity in the study area. Though, milk products are mostly consumed at homes but surplus is sold by some families to earn cash income for the welfare of household members. Making and storing of dung-cakes was also a female activity. As a matter of routine and need, dung-cakes are stored in summer season and used in winters. Some women sell dung-cakes to non-farm families and earn cash income. They also use a mixture of animal muck and mud for coating courtyards and house walls.

To sum up, women contribution in the research area was high in LMA compared to crop production activities which are mostly done by men. Relatively hard nature and outdoor work is often done by men and soft nature indoor work is usually done by women. However, the women have to face many cultural constraints and they are bound to their cultural norms, usually ignored and pushed away by policy makers. They have little or no right to enhance their skills to perform LMA and other tasks effectively. More often, their contribution in this sector is largely ignored and undocumented (Ali et al., 2006). Most of the rural women in Pakistan are landless small farmers (Sadaf et al., 2006). However, despite all such discouraging factors they carryon supporting and caring their families which must be acknowledged and appreciated.

5. CONCLUSION

It is evident from the results that majority of the women in study area are actively engaged in LMA and supporting their household economy. They get themselves involved in almost all livestock related activities. Study concludes that women role in LMA in rural areas of Chiniot district is crucial and it is almost impossible to carryout livestock farming at household level without women participation. Although, animal raising is an essential activity of rural communities in the study area, weak socioeconomic conditions are a compelling factor that pushes the women to do something in financial support of their families. On the other hand, they have no option except for working in fields for crop production or LF. Thus, majority of the women participate in LMA which are easier for them as compared to working in fields for crop production. Majority of them practice livestock farming for their own domestic purpose. They contribute in LMA in addition to their routine family duties. Evidently, they spend a lot of time in different LMA by providing significant labour inputs in the areas especially milk processing, making and storing of dung-cakes, feed serving to animals, caring of sick animals, watering animals, caring new born babies of animals, fodder cutting, fodder collection. Their participation was medium in animal bathing, cleaning of animal sheds, taking animals in and out of sheds, milking of animals and manure collection. Some of them do most hard tasks also like grazing and marketing of animals. More importantly, while performing their work they come across several constraints and hindrances as well which need to be addressed properly by the concerned stakeholders. The study may also provide some baseline help to planners and policy makers in preparing plans for the economic development and prosperity of the area based on exploring and utilizing its veiled potential for livestock production.

5.1 Policy implications

Following suggestions are made on the basis the research and respondent's opinions;

1. Government should commence need assessment-based awareness and training programmes to acquaint the rural women latest information and techniques about LMA. Comprehensive programs for the betterment of women engaged in LMA should also be launched in study area.
2. Poverty alleviation programs allied with soft credit facilities should be initiated specifically for the families engaged in livestock rearing in rural areas. Government and non-government agencies should encourage the women involved in this sector.
3. Household head should take interest in the health, education, diet and other needs of women and the females engaged in LMA should be encouraged by the society rather than discouraging them so that their productive potential can be enhanced.
4. Women access to savings, credit and investment schemes should be increased through resource mobilization programmes so that they may equip themselves with capital, knowledge and techniques required to enhance the productive capability.
5. Above all, the access of rural women to latest information and modern technology should be made certain so that they can be proficient to share the burden of work with their male counterparts for social and economic activities not only at household level but at national level as well. They should be equipped with newest knowledge concerning livestock management and care which is seriously lacking in rural women of the study area

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