



## ROLE OF RURAL WOMEN IN LIVESTOCK PRODUCTION IN DISTRICT PAKPATTAN, PAKISTAN

Muhammad Babar Akram <sup>1</sup>, Ashraf Iqbal <sup>2</sup> and Qaisar Khalid Mahmood <sup>\*3</sup>

### ABSTRACT

It is the contingent source of income in rural areas. Rural women engage in rearing and managing of livestock, and its diverse products. They play a significant role in the development of livestock sector in the district Pakpattan. A study was conducted in district Pakpattan in the Punjab province of Pakistan. The sample of 250 respondents was drawn through convenient sampling technique. The study concluded that women actively participated in livestock sector of district Pakpattan. The results of the study showed that lack of education was the major problem of rural women and further a negligible share of income from livestock production was rendered to the rural women. Rural women do not participate in decision making related to livestock matters. Hence there is a need to recognize their contribution in livestock activities this would ultimately boost up the role of women in livestock production in the district Pakpattan and generally in Pakistan.

<sup>1, \*3</sup> Assistant Professor, Department of Sociology, International Islamic University, Islamabad, <sup>2</sup> Assistant Professor, Department of Mass Communication, Government College University, Faisalabad, Pakistan.

\*Corresponding author email: qaisar.khalid@iiu.edu.pk

Article received on: 01/11/2018

KEYWORDS: Rural women; Livestock production; milch animals; decision making; women participation; Pakistan.

### INTRODUCTION

Pakistan's economy largely relies on agriculture sector. At present, agriculture sector contributes 20 percent to the gross domestic product, employing 42.3 percent of labor force and providing raw material for several value-added industries (Pakistan Economic Survey, 2018). During last fiscal year, livestock account 58.33 percent in the agriculture sector. Live stock sector is a major contributor in national economy and a key asset for rural livelihoods (Batool *et al.*, 2014).

In rural areas of Pakistan, women actively participate in economic activities related to agriculture (Ishaq and Memon, 2016). They work very hard and perform a number of tasks from dawn to dusk (Nazir *et al.*, 2013). Livestock farming is an important sub-sector of agricultural economy that offers remarkable options for increasing family earnings through female's contribution (Khan and Khan, 2015). This acts as a source of social, financial and natural capital for them (McLeod and Wilsmore, 2001).

Certain research studies have been conducted to find out participation of Pakistani women in livestock sector. Zafar *et al.* (2009) found out that 57.7% rural women had livestock and these females took part in the livestock care and management activities. Regarding time spending, about two third (75%) of the respondents spent 1-2 hours daily in cleaning of

animal sheds, cleaning/bathing, watering the animals and dung cake making.

Nosheen *et al.* (2011) conducted a study in Potohar Region" and concluded that rural women performed livestock management, animal protection and poultry rearing. Moreover, rural women also took interest to get training about livestock management, protection and animal marketing showing the involvement of rural women in livestock management activities in rural Pakistan. For this purpose, rural women get up early in the morning and they have to perform the livestock related operations; milking, shed cleaning, feeding and transfer of animals from shed. They spent almost eight hours a day in these activities (Saghir *et al.*, 2005; Nosheen *et al.*, 2010). Khan and Khan (2015) also conducted a study in Cholistan region. Their study revealed that Cholistani women efficiently work side by side with the men to earn their livelihood. They are used to go with their herds' of animals for grazing.

### Rationale of Current Study

The present study was conducted

- i. To study the socio-economic status of the respondents
- ii. To know the extent of women's participation in various types of livestock activities in the study areas

- ii. To find out women empowerment in livestock related activities

## MATERIALS AND METHODS

The present study was conducted in district Pakpattan of Punjab Province. The current study aimed to investigate role of women in Livestock sector of district Pakpattan. Pakpattan is one of the oldest and historical cities of Punjab provinces. This district has the reputation for fertile lands and livestock. The researchers were interested to see how women of this district participate in livestock sector. In order to examine the role of rural women in livestock production in district Pakpattan, a study was conducted with the following objectives.

The researcher visited the selected villages before the field work. A list of households with females' involvement in livestock production related activities was prepared with the help of key informants from each village. Multistage sampling technique was used in the study. Finally a sample size of 250 respondents was selected from the selected villages. An interview schedule comprising of structured and unstructured questions was developed, pretested and finally used to collect data from the females involved in livestock production. Thus married females involved in the livestock production were the respondents of the study. The data were analyzed by using software Statistical Package for Social Sciences (SPSS).

## RESULTS AND DISCUSSIONS

### Socio-economic status

Age affects the attitude and behaviour of a person at different stages of life. In this study the respondents were enquired about their age in completed years. During analysis of data, the result was tabulated in four

response categories. Table 1 explains that most of the respondents (39.2 percent) were 31-40 years old, 22.8 percent up to 30, moreover 19.6 percent were 41-50 years, & remaining (18.4 percent) had reached their 50 years of age. Sub-category of table under discussion is education which is the most important factor in shaping the behavior of individuals.

The table 2 under discussion further explains that most of the respondents (47.2 percent) got married when they were 21-25 years old, 44 percent married at 16-20 years of age, while some of them (8.8 percent) got married during 26-30 years of their age. Family is the group of intimate people who are emotionally related to each other either by blood, marriage or adoption; live together, responsible for the reproduction and rearing of children (Giddnes, 2006). The data further show that a slight majority of the respondents (53.6 percent) were residing in joint family system, 30.8 percent in nuclear family while others (15.6 percent) were members of extended family system. Hence most of the respondents of the study were married at early age which is a cultural practice of rural families in Pakistan. Further they were living in joint family system, an important feature of rural society that requires maximum participation of females to livestock related activities beside their extensive engagement in family care.

### Family size and number of children

Table 3 narrates that a reasonable percentage (26.8) of the respondents had more than 25 family members, 20 percent had 10, One fifth (20.8) percent were 16-20 family members, eighteen percent had 21-25, while remaining (14.4 percent) had 11-15 members in their family.

**Table1. Percentage distribution of the respondents according to their age and education**

Age (years)		Frequency	Percentage
i.	Up to- 30	57	22.8
ii.	31-40	98	39.2
iii.	41-50	49	19.6
iv.	>50	46	18.4
<b>Total</b>		<b>250</b>	<b>100</b>
Education			
i.	Illiterate	137	54.8
ii.	Primary	30	12.0
iii.	Middle	48	19.2
iv.	Matriculate & above	35	14.0
<b>Total</b>		<b>250</b>	<b>100</b>

The data in the table 1 regarding educational level of the respondents depict that slightly more than half of the respondents (54.8 percent) were illiterate while remaining (45.2 percent) were literate. Further, among literates, 12 percent had primary level of education, 19.2 percent were middle passed and 14 percent were matriculate and above in their educational achievement. Thus majority of the respondents were illiterate and in the middle age group who used to work at livestock

farms to help in raise, rear of livestock animals, birds, processing and managing of dairy production.

#### **Marital Status, age at marriage & family pattern**

Table 2 reflects that a high majority of the respondents (88.4 percent) was married, 9.6 percent widowed, while remaining (11.6 percent) were either widowed or divorced. Focus of this study was on married women who were involved in livestock production; Hence bachelors were not included in the respondents list.

**Table 2. Percentage distributions of the respondents according to their marital status, age at marriage & family pattern**

Marital status		
Category	Frequency	Percentage
i. Married	221	88.4
ii. Widowed	29	11.6
<b>Total</b>	<b>250</b>	<b>100</b>
Age at marriage (years)		
i. 16-20	110	44.0
ii. 21-25	118	47.2
iii. > 25	22	8.8
<b>Total</b>	<b>250</b>	<b>100</b>
Family pattern of the respondents		
i. Nuclear	77	30.8
ii. Joint	134	53.6
iii. Extended	39	15.6
<b>Total</b>	<b>250</b>	<b>100</b>

The table 3 under discussion further elaborates that slightly more than half (51.6 percent) of the respondents had 6-10 children, 36.8 percent had 1-5, 3.6 percent had more than 10 children and remaining (8 percent) women had no children. Thus majority of the respondents had more than 20 family members and further majority of them were residing in joint family system. Similarly majority of the respondents had more than five children which indicate that tradition of large family is still prevailing in rural Pakistan.

Table 4 elaborates that a little majority of the respondents (54.4 percent) used to get up at 5.1-6am, 32.4 percent at 4 am-5 am while remaining (13.2 percent) woke up after 6 am in the morning. The table further explains that a small majority of the respondents (60.4 percent) performed their first activity after getting up was breakfast preparation for the family while remaining (39.6 percent) did milking soon after waking up. Thus a majority of the respondents woke up between 5.1-6 am and their first task after getting up at early morning was to make up breakfast for their families.

#### **Wake up time and first activity**

Table 4 elaborates that a little majority of the respondents

(54.4 percent) used to get up at 5.1-6am, 32.4 percent at 4 am-5 am while remaining (13.2 percent) woke up after 6 am in the morning. The table further explains that a small majority of the respondents (60.4 percent) performed their first activity after getting up was breakfast preparation for the family while remaining (39.6 percent) did milking soon after waking up. Thus a majority of the respondents woke up between 5.1-6 am and their first task after getting up at early morning was to make up breakfast for their families.

Table 5 indicates that a small majority of the respondents (63.2 %) possessed up to 3 buffaloes, while 36.8 percent possessed 4 and above buffaloes in the family. The table further explains that a majority of the respondents (65.2 %) had 4-6 numbers of sheep, 26.4 percent possessed up to 3 and the remaining (8.4%) had more than 6 sheep. The table under discussion also tells that a little more than half of the respondents (51.6 %) had 4-6 number of goats, 37.2 percent possessed up to three while remaining (11.2%) had more than six goats.

**Table 3. Percentage distribution of the respondents according to their family size and number of children**

Family size			
	Category	Frequency	Percentage
i.	Up to 10	50	20.0
ii.	11-15	36	14.4
iii.	16-20	52	20.8
iv.	21-25	45	18.0
v.	>25	67	26.8
<b>Total</b>		<b>250</b>	<b>100</b>
Number of children of the respondents			
i.	None	20	8.0
ii.	1-5	92	36.8
iii.	6-10	129	51.6
iv.	>10	9	3.6
<b>Total</b>		<b>250</b>	<b>100</b>

**Table 4. Percentage distribution of the respondents according to their wake up time and first activity**

Wake up time			
	Time	Frequency	Percentage
i.	Up to 5am	81	32.4
ii.	5.1am-6am	136	54.4
iii.	>6am	33	13.2
<b>Total</b>		<b>250</b>	<b>100</b>
First activity after getting up			
i.	Breakfast preparation	151	60.4
ii.	Milking	99	39.6
<b>Total</b>		<b>250</b>	<b>100</b>

**Table 5. Percentage distribution of the respondents according to the number of livestock in the family**

No of livestock per family	Category of livestock					
	Goats % (Freq.)	Buffaloes % (Freq.)	Cows % (Freq.)	Sheep % (Freq.)	Bulls % (Freq.)	Donkeys % (Freq.)
Up to 3	37.2 (93)	63.2 (158)	68.0 (170)	26.4 (66)	82.8 (207)	94.0 (235)
4 &>4	62.8 (157)	36.8 (92)	32.0 (80)	73.6 (184)	17.2 (43)	6.0 (15)
<b>Total</b>	<b>100 (250)</b>	<b>100 (250)</b>	<b>100 (250)</b>	<b>100 (250)</b>	<b>100 (250)</b>	<b>100 (250)</b>

The Table 5 further describes that a considerable majority of the respondents (68%) had up to 3 cows, moreover 26.8 percent possessed 4-6, and the remaining (5.2 percent) owned more than 6 cows. The data further depicts that a high majority of the respondents (82.8 %) had up to 3 young bulls, more than one sixth (17.2 %) had 4 and above number of young bulls. The above table also illustrates that a high majority of the respondents (94 %) had up to 3 numbers of donkeys while 6 percent had 4-6 donkeys. Donkeys in rural areas are the main source of transportation of fodder for animals. Hence mostly respondents' families

owned buffaloes, cows, sheep, goat, and donkeys which are part of domestic livestock in rural Pakistan where women play a major role in rearing these animals.

#### Place for keeping the livestock

Table 6 explains that most of the respondents (40.8 %) kept their milch animals on farm & courtyard, 37.2 percent reared their animals on courtyard and 22 percent kept their milch animals on farm. The table further shows that most of the respondents (46.8 %) kept their draft animals on farm & courtyard, 35.2 percent managed on courtyard while remaining (18 %)

used to keep draft animals on farm. The table 6 also indicates that most of the respondents (43.2 %) raised their meat animals on farm & courtyard, 37.6 percent in courtyard and remaining (19.2 percent) were keeping their meat animals on farm. It is inferred from the above

table that most of the respondents were keeping their milch, meat, and draft animals on courtyard and farm showing that livestock presence is near home as it becomes convenient for rural females to manage and care them as their private sphere activity.

**Table 6. Percentage distribution of the respondents according to place for keeping the livestock.**

Categories	Frequency	Percentage
<b>Milch animals</b>		
i. On farm	55	22.0
ii. In courtyard	93	37.2
iii. On farm & courtyard	102	40.8
<b>Total</b>	<b>250</b>	<b>100</b>
<b>Draft animals</b>		
i. On farm	45	18.0
ii. In courtyard	88	35.2
iii. On farm & courtyard	117	46.8
<b>Total</b>	<b>250</b>	<b>100</b>
<b>Meat animals</b>		
i. On farm	48	19.2
ii. In courtyard	94	37.6
iii. On farm & courtyard	108	43.2
<b>Total</b>	<b>250</b>	<b>100</b>

### Females' share in livestock income and their involvement in livestock activities

Table 7 tells that a little more than half of the respondents (52 %) had family income from livestock up to Rs. 5000

per month, 37.2 percent earned Rs.5001-10000 from livestock. There maining (10.8 %)had family income of more than Rs 10000 per month from the livestock.

**Table 7. Percentage distribution of the respondents according to their monthly income from livestock & number of females involved in livestock activities.**

<b>Monthly income from the livestock</b>			
Categories	Categories –(Rs./month)	Frequency	Percentage
i.	Up to 5000	124	49.6
ii.	5001-10000	99	39.6
iii.	10001-& above	23	10.8
		250	100
<b>Females involved in livestock activities in the family</b>			
	No. of Females	Frequency	Percentage
i.	Up to 5	193	77.2
ii.	6-10	57	22.8
	<b>Total</b>	<b>250</b>	<b>100</b>

The table 7 further shows that a majority of the respondents (77.2 percent) had up to 5 females who took part in livestock caring and management in the family, while 22.8 percent had 6-10 females who were actively engaged in these activities. Hence majority of the respondents had monthly income up to Rs. 5000 which shows less frequent selling of livestock. Further a majority of the respondents' families had up to five females who usually participated in livestock raising, dairy farming, managing, and processing of livestock products. Khushk (2006) found out that, in Pakistan, an average Rs. 32, 639 per annum is added to the income

of a household from the sale of animals, along with some support from the sale of milk, milk products and poultry. Women contribute to decision-making to keep sheep and goats, and poultry birds. Female skills and knowledge in poultry production and the processing of milk proves significant in livestock rising in Pakistan.

### Daily involvement of the respondents in the livestock care and management

Table 8 narrates that a majority of the respondents (72 %) had 1-2 hours involvement in cleaning of animals and their sheds and 28 percent spent more than 2

hours on this activity, while remaining (16 %) had no participation in cleaning of animals and their sheds. The table further explains that a little more than half of the respondents (58.4 %) had 1-2 hours involvement in feed preparation for domestic animals and (10.8 percent) between 3-4 hours, while remaining (30.8 percent) had no participation in this activity. The table

show that a good majority of the respondents (75.2 percent) didn't take part in grazing of ruminants in the field while remaining (24.8 percent) took part in this activity. The table 8 further show that 18 percent of the respondents had 1-2 hours involvement in grazing, while 6.8 percent spent 3-4 hours to graze domestic animals.

**Table 8. Percentage distribution of the respondents according to their daily involvement in livestock care and management**

No hours women involved/day	Category of livestock care and management			
	Cleaning of animals and sheds % (Freq.)	Feed preparation % (Freq.)	Grazing % (Freq.)	Watering % (Freq.)
None	20.0 (50)	30.8 (77)	75.2 (188)	38.0 (95)
1-2	72.0 (140)	58.4 (146)	18.0 (45)	53.2 (133)
More than 2	28.0 (60)	10.8 (27)	6.8 (17)	8.8 (22)
<b>Total</b>	<b>100 (250)</b>	<b>100 (250)</b>	<b>100 (250)</b>	<b>100 (250)</b>

The above table depicts that a small majority of the respondents (62 percent) were involved in watering the family owned animals, while remaining (38 percent) didn't take part in this activity. The table further explains that a little more than half (53.2 percent) of the respondents spent 1-2 hours in watering of animals and 8.8 percent had more than 2 hours participation in this activity. The above table shows that mostly rural women were actively involved in cleaning of animals and their sheds, feed preparation, and watering, while grazing requires out of home activity hence majority of rural women didn't graze animals on the vegetation which is away from home.

Similarly these results have been supported by the past studies which were conducted in Pakistan these studies narrated that majority of rural women in Pakistan have a major role in the livestock production and its management process. These women mostly take care of livestock, collect fodder for animals, clean sheds and process animal products (Sharma et al. 2007, UN, 2001, Nazli and Hamid, 2007).

### The managing and processing of livestock products

Table 9 illustrates that a majority of the respondents (83.2

%) took part in milking of milch animals while remaining (16.8 %) were not involved in milking. The table further shows that a good majority of the respondents (71.2 %) remained reserve between up to 1 hour per day for milking; and remaining (12%) consumed one and more than 1 hours in this task. The table under discussion further explains that a little more than half of the respondents (55.2 %) were involved in feeding, while remaining (44.8 %) had no participation in feeding of domestic animals. The table further narrates that a little less than half of the respondents (48.8 %) had up to 1 hour per day involvement in feeding which is the main domain of rural women in Pakistan, while few of them (6.4 %) spent more than 1 hour in providing feed to the animals. The table moreover facilitates that a high majority of the respondents (95.6 %) were involved in milk processing while remaining few of them (4.4 %) had no involvement in this activity. The table further explains that a very good majority of the respondents (81.2 %) had up to one hour involvement in milk processing; remaining (14.4 %) spent more than 1 hour in this activity. The data infers that milk processing mainly fell under the domain of rural women indicates their significant role in dairy development in rural Pakistan.

**Table 9. Percentage distribution of the respondents according to their involvement in managing and processing the livestock products**

No of hours involved / day	Managing and processing activities				
	Milking of milch animals % (Freq.)	Feeding of animals % (Freq.)	Milk processing % (Freq.)	Selling of dairy products % (Freq.)	Dung cake making % (Freq.)
None	16.8 (42)	44.8 (112)	4.4 (11)	19.2 (48)	10.8 (27)
Up to 1	71.2 (178)	48.8 (122)	81.2 (203)	70.0 (175)	76.4 (191)
More than 1	12.0 (30)	6.4 (16)	14.4 (36)	10.8 (27)	12.8 (32)
<b>Total</b>	<b>100 (250)</b>	<b>100 (250)</b>	<b>100 (250)</b>	<b>100 (250)</b>	<b>100 (250)</b>

The data further tell that a high majority of the respondents (80.8 %) were involved in selling of livestock/poultry products, while remaining (19.2 %) were not empowered to sell livestock by products. The data show that a good majority of the respondents (70 %) had up to one hour involvement in selling of livestock / poultry products, and few of them (10.8 percent) fixed one and more than 1 hours for this task. The table further elaborates that a very good majority of the respondents (89.2%) were involved in dung cake making whereas remaining (10.8 %) didn't do this task. The table further indicates that good majority of the respondents (76.4 percent) spent up to one hour in dung cake making; moreover 12.8 percent had one and more than 1 hours involvement in this work.

It is concluded from the above discussion that women had a significant role in livestock in managing and processing of livestock products in Pakistan. Domestic dairy development activities are mainly performed by rural females. This ranges from milking, milk processing and selling of dairy products. The management of domestic animals and birds is also done by rural women on whom they spend a major chunk of their daily time in Pakistan. The data indicate that livestock development activities are impossible without the participation of rural women in managing and processing the livestock and its products (Nosheen *et al.*, 2008). In Pakistan for instance, it is woman who makes the feed, collects fodder, clean animals and their sheds, make dung cakes, collect manure for organic fertilizers, pumps milk, processes animal products and markets them. Women also play important role in rural poultry farming where they apply their own methods of rearing birds. Therefore, extensionists, researchers and trainers in the field of livestock focus more on rural women to get full potential from livestock sector production (FAO, 1989; Hassan, 2008).

### CONCLUSION AND RECOMMENDATIONS

The results of the study in hand concluded that women are the main contributor at household level in livestock management and production related activities. Their role varies from feeding to cleaning the animals. They spend a substantial part of their daily time in livestock management activities. The extensively take part in livestock management but there are certain social and cultural factors due to which the society does not recognize their sacrifices and still we consider them inferior and second citizen of the country. They don't have right to spent income upon them which they earn after selling milk and milk by products because they have to hand over that income to the male members. Livestock as a part of agriculture is very important for Pakistan and women's role in this sector is also crucial

and inevitable because without the participation of women in livestock this sector cannot be flourished. We will have to recognize the efforts of half of country's human resource first and create equal opportunities and streamline them into the national development process.

We should recognize women as first citizen of the country and also their efforts in every field of life, then provide knowledge and skills to them in livestock production and the processing of dairy products. They should be imparted suitable technological training in livestock management, it can be helpful in rearing and caring of livestock and also give them right of decision making at least at household level. The cultural taboos of selling livestock and dairy products by women in Pakistan should be discouraged to enable them to do marketing of domestic livestock by-products.

### REFERENCE

- Batool Z., H.M.Warriach, M. Ishqa, S. Latif, M. A. Rashid, Bhatti A. ,N. Murtaza S.Arif ,and P.C. Wynn. 2014. Participation of women in dairy form practices under smallholder production system in Punjab, Pakistan. *Journal of animal and plant sciences*. Vol. 24(4), pp. 1263-1265
- FAO. 1989. Access to Extension and Training: Improving Extension Work with Women: An Instructional package. Research, Extension and Training Division, Extension, Education and Communication Service FAO, Rome, Italy
- Hassan, M.Z.Y. 2008. Analysis of the Obstacles to Gender mainstreaming in Agricultural Extension in Punjab: A Case Study of District Muzaffargarh, Ph.D. Thesis, Dept. of Agri. Ext., Uni. of Agri., Faisalabad, Pakistan.
- Ishaq,W. and S. Q. Memon 2016. Roles of women in agriculture: A case study of rural Lahore. *Journal of rural development and agriculture*. Vol. 1(1), pp. 1-11.
- Khan, A. A and K. Khan 2015. Women's role in livestock economy of cholistan desert, Pakistan. *Global journal of human-social science: E economics*. Vol. (153) pp. 28-39.
- Nazir, S., I.A. Khan, B. Shabaz, F. Anjum 2013. Rural women's participation and constraints in agricultural activities: A case study of district Nankana Sahib, Punjab. *Pakistan journal of agricultural sciences*. Vol. 50(2). Pp. 317-322.
- Nazli, H. and S. Hamid 2007. Concerns of Food Security, Role of Gender and Intra household Dynamics in Pakistan.
- Nosheen, F., M. Ahmad and M. Ishaque. 2010. Identification and Analysis of the Problems of gender mainstreaming involvement in agricultural decision making and extension work: A Case

Study of District Chakwal, The J. Anim. Plant Sci., 20(4): 293-296.

Nosheen, F., T. Ali. M. Ahmad and H. Nawaz. 2008. Exploring the gender involvement in agricultural decision making: A case study of District Chakwal. Pak. J. Agric. Sci. 45(3): 101-106.

Nosheen F., T. Ali., H. N. Anwar and M. Ahmad. 2011. An Assessment of Participation of Rural Women in Livestock Management and Their Training Needs in Potohar Region. Pak. Vet. J. 31(1): 40-44

Pakistan Economic Survey, 2018. Population, labor force and employment. Ministry of Finance, Govt. of Pakistan.

Saghir A., T. Ali., M. Ahmad and M. Z. Y. Hassan 2005. Gender Participation in Livestock Production activities and their consumption trend of Portentous diet in Tehsil Fateh Jung, Pakistan J. of Agric., Sci. 42(3-4), 89-92.

Sharma, S., S. Nagar and G. Chopra 2007. Household responsibilities of adolescent girls in Kangra and Kullu Districts of Himachal Pradesh. Kamla-Raj 2007. Anthropologist 9(3): 199-201.

UN. 2001. Gender pilot study report Bhutan, Royal Government of Bhutan. Planning Commission and Central Statistical Office and UN agencies, 2001.

Zafar, M. I., S. S. Abbasi and Z. Batool. 2009. Socio-Economic and Health Implications of Female Unpaid Work in Agriculture and Livestock Sector: A Study of Three Cropping Zones of Punjab, Pakistan. Agricultural Linkages Program (ALP) PARC.

**CONTRIBUTION OF AUTHORS**

S. No.	Author name	Contribution	Signature
1.	Muhammad Babar Akram	Write up and data collection	
2.	Ashraf Iqbal	Review and editing	
3.	Qaisar Khalid Mahmood	Literature review and	