

Original Research Article

Livestock Production and Milk Supply Chain in Peri-urban Areas of Jhang Pakistan

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ABSTRACT

The peri-urban areas are facing the challenge of poverty, hunger, unemployment, pollution and ineffective utilization of natural resources (Mycroo, 2006). Livestock sector is thought to be one of the most important sectors in the economy of peri-urban areas of Pakistan. Livestock enterprises are particularly important for the landless and small farmers because they provide an alternative form of asset ownership, independent of land. For these poorer segments of the rural population, livestock ownership acts as insurance in the case of crop failure and emergencies. This Present paper focuses on livestock production and the supply chain of milk which is one of the most important livestock products in peri-urban areas of district Jhang, Punjab province. Quantitative and qualitative data, obtained through structured interview schedule, focus group discussion and personal observation were analyzed through SPSS and content analysis technique. Results revealed that an overwhelming majority of the respondents had no proper place for animals keeping. The Your results which are unique to this study should be indicated?? Results revealed that an overwhelming majority of the respondents had no proper place for animals keeping. Results of the milk supply chain?? Fellow farmers were the source of information for about 32% of the respondents. Cows and buffaloes were major milk producing animals in study area and milk was mostly sold through Gawalasasa middlemen. Conclusion??

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Key words: Livestock production, Peri-urban area, Livestock production, Milk marketing

Introduction

The word 'peri-urban' refers to "the margins of big cities" (Narain and Nischal, 2007). Peri-urban areas are situated within the municipal areas of a country but are often outside the formal urban boundaries where both agricultural and non-agricultural activities exist simultaneously, though the agricultural and rural characteristics are gradually replaced by urban lifestyles. Peri-urban areas can also be defined as a region just around the built up territory of a city, its edge, the

33 'rural-urban fringe' where city and country land uses go beyond(Adell, 1999).Peri-urban
34 boundary has a place that has a large impact on people. Due to the flow of goods, resources,
35 people and capital to peri-urban areas, the sustainability of cities and rural areas is affected
36 (Citation??).--The peri-urban areas are facing the challenge of poverty, hunger, unemployment,
37 pollution and ineffective utilization of natural resources(Mycoo, 2006).The combination of urban
38 and rural activities with negligent regulations, industrial and urban wastes, and intensive
39 agriculture releases toxic chemicals which, when combined with poor waste and sanitation
40 management,often makes peri-urban areasmuch polluted place (Singh and Kumar,
41 2006).Douglas (2006) stated that the peri-urban areas are facing significant challenges of access
42 to land, problems related to soil and water quality gradually more polluted by peri-urban waste,
43 urban waste disposal and industrial activities.Livestock sector is thought to be one of the most
44 important sectors in the economy of peri-urban areas. Earlier it was a traditional practice but now
45 livestock are mostly reared forcommercial purposes. It plays very important role in enhancing
46 the health and food security status in developing country.Livestock holding is considered as an
47 important strategy for poverty reduction in rural communities of Pakistan. The livestock
48 accounts for approximately 55.9 percent of the agriculture value added and 11.5 percent to GDP
49 during 2012-13 (Govt. of Pakistan, 2013).Livestock commodities are very important for
50 tenantsand small farmers because it provides independent of land and free ownership of assets.
51 Livestock products and byproducts provide fast cash at the time of need and food. The livestock
52 products like fresh milk, butter, *lassi* and *desi ghee*have important role in improving food
53 security condition of the people.(Burki,et-al., 2005),
54 Livestock products, especially dairy products,provide vitamin A,carbohydrates, protein and
55 calcium, which can make a significant contribution to human nutrition in developing countries
56 (Ahmed et al., 2003).Milk is very important commodity of rural and peri-urban areas providing
57 food requirements to the dwellers. Milk produced in peri-urban areas is either used for food in
58 the household or sold to earn some money. The earned money is used to buy other commodities
59 including food items for their family. It significantly enables the milk producers to be
60 prosperous(Citation??).It is a good sign for women, children and all the population in the
61 country that on small and large scale dairy farming is increasing to meet the needs of food
62 security (MOA, 1998).(Sharif et al.,(2003) noted that rural areas produced 80% of milk, while
63 15% is produced in peri-urban areas and cities are the low producers. He further stated that about

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64 90% of the sold milk comes from small farmers and the remaining is supplied by commercial
65 farms. The traditional milk marketing channel involves the collection of milk from farmers in
66 remote areas by the village **dodhi**(Citation??).The unprocessed milk reaches the final consumer
67 through a variety of peoples, milk shops, sweetshops, and **gawalas**. Transportation costs for
68 moving milk from small towns or transaction points on main highways, to cities, ranges between
69 Rs???? 10-50 depending on the size of the utensil, mode of transportation and distance involved
70 (Citation??).

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71 Statement of the problem on the research topic, what has been done so far and the research
72 gap is missing??

73 Objective/sof the study is also not indicated?

74 **Materials and Methods**

75 The study was conducted in peri-urban areas of Jhang City. It is situated in Central Punjab. It is
76 the oldest city of the Central Punjab. The sample of population was limited to 120 Peri urban
77 dwellers selected through simple random sampling technique. Three peri urban areas namely
78 Hasnana, Kotsai Singh and PukayWala are under peri-urban distribution. From each peri-urban
79 areas 40 peri-urban dwellers were selected as respondents making sample size of 120. In order to
80 collect the required information, a validated and reliable interview schedule was used for
81 quantitative data. In order to collect qualitative data, focus group discussion and personal
82 observation were used.The quantitative data were statistically analyzed by using computer
83 software Statistical Package for Social Sciences (SPSS)version?? and qualitative data through
84 content analysis technique.

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Results and Discussion

Age of the Respondents

It is generally believed that with the increase in age the individual become mentally mature and takes rational decisions and therefore, age can be one of the important factors affecting the behavior of the respondents (Amir, 2003). Data regarding the age of respondents are given below. This study has shown that about 32.5% of the respondents were up to 40 years of age, 20.8% of the respondents were up to 41-50 years of age. However, 32.5% of the respondents were above the age 50-60 years and 14.2% above 60. Data regarding the age of respondents is given in Table 1.

Table 1: Distribution of the respondents according to their age

Age group	Frequency	Percent
<= 40	39	32.5
41 – 50	25	20.8
51 – 60	39	32.5
61+	17	14.2
Total	120	100.0

The data in Table 1 show that about 32.5% of the respondents were up to 40 years of age, 20.8% of the respondents were up to 41-50 years of age. However, 32.5% of the respondents were above the age 50-60 years and 14.2% above 60. It is generally believed that with the increasing

~~in-age the individuals become mentally matured and takes rational decisions and therefore, age can be one of the important factors affecting the behavior of the respondents (Amir, 2003).~~

Education level of the respondents

~~According to this study, the majority of the respondents in the peri-urban areas were illiterate because they have no better facilities of education. Qualitative data revealed that most of the people in these areas belong to poor families so they are not able to get higher education (Table 2).~~

~~Education can be defined as the process of developing knowledge, wisdom and other desirable qualities of mind, character and general competency, especially by a source of formal instructions.~~

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Table 2: Distribution of the respondents according to their Education

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Education Level	Frequency	Percent
Illiterate	28	23.3
Primary	26	21.7
Middle	41	34.2
Above Matric.	25	20.8
Total	120	100.0

~~The data in Table 2 indicated that the majority of the respondents in the peri urban areas were illiterate because they have no better facilities of education. Qualitative data revealed that most of the people in these areas belong to poor families so they are not able to get higher education.~~

122 | Education can be defined as the process of developing knowledge, wisdom and other desirable
123 qualities of mind, character and general competency, especially by a source of formal
124 instructions (citation???).

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125 | Further discussion is required??

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126 | **Animals Rearing**

127 | Table 3 presents summary of the data on livestock ownership..

128 | **Table 3:Distribution of the respondents according to the No. of Animals**

No. of Animals	Yes (%)	No (%)
Cows	20	80
Buffaloes	25	75
Sheep	12	88
Goat	16	84
Hen	43	57
Donkey	6	94

129

130 | Livestock enterprises are particularly important for the landless and small farmers because
131 | livestock provides an alternative form of asset ownership, independent of land. For these poorer
132 | segments of the rural population, livestock ownership acts as insurance in the case of crop failure
133 | and emergencies. Finally, for subsistence farmers, livestock products like fresh milk and butter
134 | or *desi ghee* provide food security for the family and help to meet nutritional requirements in
135 | terms of calories and protein. Some livestock also used for the transportation purposes in these
136 | areas (Citation??).

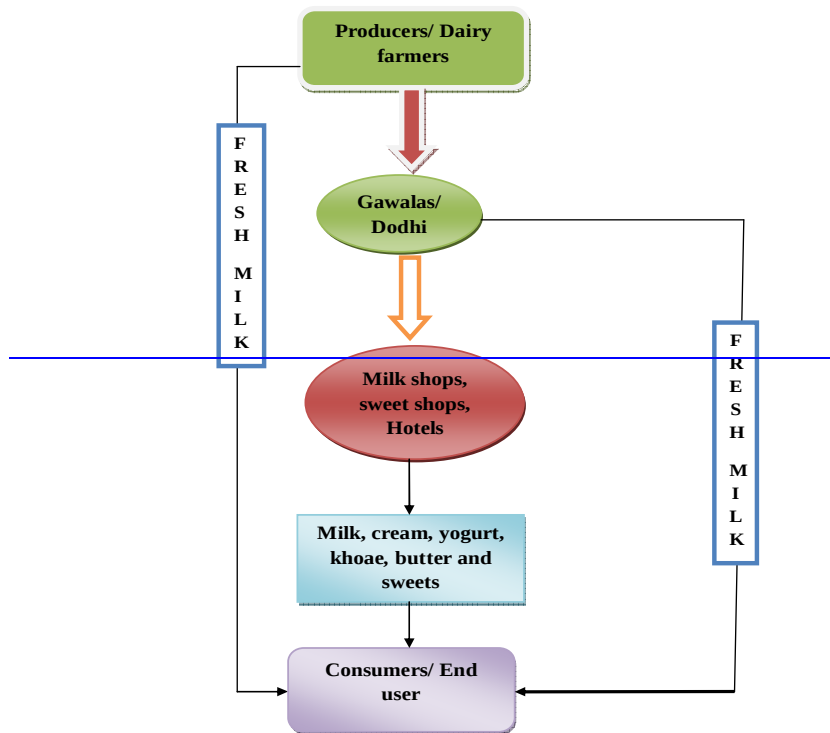
137 | Questions were asked to the respondents regarding the rearing of different animals, their
138 | production and use of livestock products. Qualitative data revealed that cows and buffaloes were
139 | mostly reared for milk production. In the study area, a single cow produced about 6-8 liter
140 | milk/day while 10-12 liter/day milk was produced by buffaloes. About one third of the total milk
141 | produced was used for domestic purpose and the remaining amount was ~~sold out in the~~
142 | ~~nearby~~ milk shops, *gawalas*, hotels etc. they also produce milk by-products like “*Dasi ghee* and
143 | ~~Butter~~ butter” and sell out for earning. Some peoples also have a small population of sheep and

144 goat. Mostly these are reared for meat purpose but some people use goat milk for domestic
145 purpose. Peri-urban dwellers mostly sell out goat and sheep on “Eid-ulAzha” because at this
146 occasion they get much better profit than other days but some people also sell out in
147 “MaveeshiMandi” when they are in drastic condition.

148

149 **Milk Supply Chain in Per-urban Areas**

150 ~~Milk is produced from dairy farmers in variable quantity depending on number of milch~~
151 ~~(Milking) animals and better management practices. Milk produced in the per-urban areas is~~
152 ~~either directly bought by the neighbors or the milk producer sell their produced milk to the~~
153 ~~gawalas after fulfilling their own requirements. The neighbors directly getting milk from the~~
154 ~~producers are satisfied with the purity of milk although it costs high than market. Further~~
155 ~~gawalas sell fresh milk to the end-users and also to the milk shops, hotels and sweet shops, these~~
156 ~~milk shops process milk by boiling, chilling, making cream, yogurt butter and khoa. When the~~
157 ~~milk is transported through gawalas milk is not pure because gawalas must added water to~~
158 ~~increase the milk quantity and also use other chemicals for thickness which are very harmful for~~
159 ~~health. Mostly in the hotels milk is used for tea and lassi. In the sweet shops milk is either used~~
160 ~~for making sweets or packed for daily usage. From these shops milk and milk by products are~~
161 ~~directly supplied to the end-users or consumers. Further detail of milk supply chain is given~~
162 ~~below~~



163

164 Proper place for animal keeping

165 Data regarding the proper place for animal is given below [\(Table 4\)](#)

166 **Table 4: Distribution of respondents according to the proper place of animal**

Proper place for keeping animal	Frequency	Percent
Yes	48	40.0
No	72	60.0
Total	120	100.0

167

168 The data from the table reveals that more than fifty percent of respondents have no proper place
169 for animal while they are also rearing animals get money and products from these. [Discussion is](#)
170 [required??](#)

171 Animal diseases awareness

172 ~~Animal's diseases are the major problem in peri urban and also in rural areas. Due to these~~
173 ~~diseases they face losses.~~ Data regarding diseases awareness is given below [\(Table 5\)](#):-

174 Table 5: Distribution of respondents regarding Animal diseases awareness

Animal diseases awareness	Frequency	Percent
Yes	61	50.8
No	59	49.2
Total	120	100.0

175

176 The data from the table show that more than 50.8% respondent has awareness regarding animal
177 diseases remaining 49.2 % has no information regarding diseases of animal. [Animal's diseases](#)
178 [are the major problem in peri-urban and also in rural areas \(citation\). Due to these diseases they](#)
179 [face losses. Further elaboration is needed??](#)

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181 Information source

182 The peri urban dwellers get their latest information regarding the livestock and agriculture from
183 different sources. Data regarding the proper placing for animal is given below [\(Table 6\)](#).

184 Table 6: Distribution of respondents according to source of information

Source of information	Frequency (out of 120 respondents)	Percent
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Extension department	24	20.0
Neighbor farmer	39	32.5
Radio	0	0.0
T.V	14	11.7
Newspaper	0	0.0
Other sources	21	17.5
Not get information	18	15

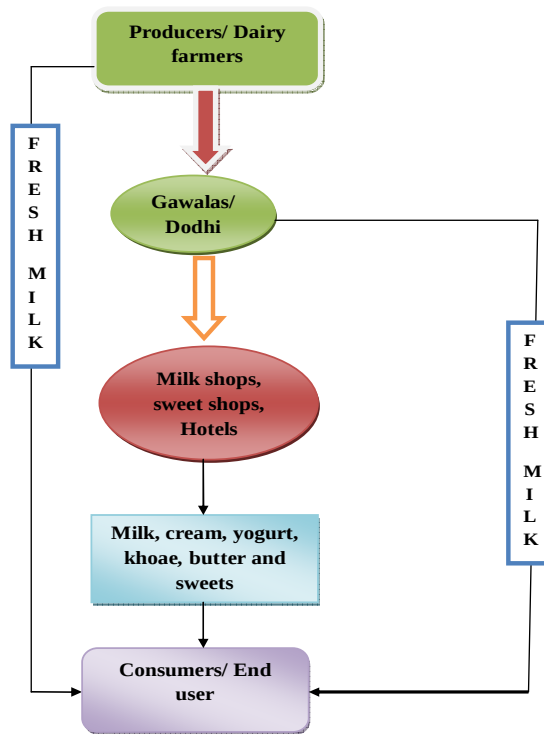
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186 The data from the table reveals that most of the respondents 32.5% get their information from
 187 their neighbor farmers. About 20.0% respondents have extension department main source of
 188 information regarding the livestock and agriculture, while 8.3, 6.7 and 17.5 respondents have
 189 T.V, radio and other sources of information respectively. Newspaper has no role to disseminate
 190 agricultural information in the peri urban areas.[Discussion???](#)

191 **Milk Supply Chain in Per-urban Areas**

192 [Milk is produced from dairy farmers in variable quantity depending on number of milch](#)
 193 [\(milking\) animals and better management practices. Milk produced in the per-urban areas is](#)
 194 [either directly bought by the neighbors or the milk producer sell their produced milk to the](#)
 195 [gawalas after fullfilling their own requirements. The neighbors directly getting milk from the](#)
 196 [producers are satisfied with the quality of the milk although its costs are higher than market.](#)
 197 [Further gawalassell fresh milk to the end users and also to the milk shops, hotels and sweet](#)
 198 [shops, these milk shops process milk by boiling, chilling, making cream, yogurt butter and](#)
 199 [khoae. When the milk is transported through gawalasmilk is not pure because gawalas must](#)
 200 [added water to increase the milk quantity and also use other chemicals for thickness which are](#)
 201 [very harmful for health. Mostly in the hotels milk is used for tea and lassi. In the sweet shops](#)
 202 [milk is either used for making sweets or packed for daily usage. From these shops milk and milk](#)

203 [by products are directly supplied to the end users or consumers. Further detail of milk supply](#)
204 [chain is given below \(Figure 1\).](#)



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206 [Caption for this figure???](#)
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208 Conclusion and Recommendations

209 Livestock have massive share in the economy of Pakistan and it is also a good source of
210 byproducts. It is ~~concluded-noted~~ that farmers ~~did note-not had-~~ have animal sheds and had little
211 knowledge about credible information source(s) regarding diseases of animals and marketing of
212 products such as milk. The role of middlemen (gawala) was dominant in milk marketing chain.
213 ~~of milk. Livestock have massive share in our economy and it is also a good source of byproduct~~
214 ~~so, It-~~ It is suggested that government should focus on diseases and marketing aspects of livestock
215 production in peri-urban areas of district Jhang Pakistan.

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