

Original Research Article

Milk Production and 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. -Present paper focuses on livestock-milk production and the-its supply chain-of milk which is one of the most important livestock products in Peri urban areas of Jhang district-Jhang, Punjab province. Quantitative and qualitative data obtained through structured interview schedule, focus group discussion and personal observation are analyzed through statistical package for social sciences (SPSS) and content analysis technique. Results revealed that an overwhelming majority of the respondents have no proper place for animals keeping. Results of the milk supply chain??. Fellow farmers are the main source of information for about 32% of the respondents. Cows and buffaloes are major milk producing animals in the study area and milk is mostly sold through Gawalas as a middlemen. Therefore, the government should focus on diseases and marketing aspects of milk production in the peri-urban areas of Jhang district, Pakistan.

Key words: Peri-urban area milk marketing, Livestock-milk production, Milk marketing, in Pakistan, peri-urban.

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

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34 areas can also be defined as a region just around the built up territory of a city, its edge, the
35 'rural-urban fringe' where city and country land uses go beyond (Adell, 1999). Peri-urban
36 boundary has a place that has a large impact on people. Due to the flow of goods, resources,
37 people and capital to Peri urban areas, the sustainability of cities and rural areas is affected. The
38 Peri urban areas are facing the challenge of poverty, hunger, unemployment, pollution and
39 ineffective utilization of natural resources (Mycoo, 2006). The combination of urban and rural
40 activities with negligent regulations, industrial and urban wastes, and intensive agriculture
41 releases of toxic chemicals when combined with poor waste and sanitation management, often
42 makes Peri-urban areas much polluted place (Singh and Kumar, 2006). Douglas 2006 stated that
43 the Peri urban areas are facing significant challenges of access to land, problems related to soil
44 and water quality gradually more polluted by Peri urban waste, urban waste disposal and
45 industrial activities.

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47 Livestock sector is thought to be one of the most important sectors in the economy of Peri-urban
48 areas. Earlier it was a traditional practice but now livestock are mostly reared for commercial
49 purposes. It plays very important role in enhancing the health and food security status in
50 developing country. Livestock holding is considered as an important strategy for poverty
51 reduction in rural communities of Pakistan. The livestock accounts for approximately 55.9
52 %percent of the agriculture value added and 11.5 percent to GDP??? during 2012-13 (Govt. of
53 Pakistan, 2013). Livestock commodities are very important for farmers because it provides
54 independent of land and free ownership of assets. Livestock products and byproducts provide
55 fast cash at the time of need and food. The dairy products like fresh milk, butter, lassi and desi
56 ghee have important role in improving food security condition of the people. (Burki et al.,
57 2005).

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59 Livestock products, especially dairy products, provide protein, vitamin A, carbohydrates, protein
60 and calcium, which can make a significant contribution to human nutrition in developing
61 countries (Ahmed et al., 2003). Milk is very important commodity of rural and Peri urban
62 areas providing food requirements to the dwellers. Milk produced in Peri-urban areas is either

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63 used for food in the household or sold to earn some money. The earned money is used to buy
 64 other commodities including food items for the family. It significantly enables the milk
 65 producers to be prosperous. (MOAMoA, 1998). Sharif *et. al.* (2003) noted that 80% milk is
 66 produced by rural areas, while 20 to 25% produced by Peri-urban areas and cities are the low
 67 producers of milk. The same author also further stated that about 90% of the sold milk comes
 68 from small farmers, whereas the remaining is supplied by commercial farms. The traditional milk
 69 marketing channel involves the collection of milk from farmers in remote areas by the village
 70 *dodhi*. The unprocessed milk reaches the final consumer through a variety of peoples like
 71 through middleman, collection centers, milk shops, sweet shops, and *gawalas*. Transportation
 72 costs for moving milk from small towns or transaction points on main highways, to cities, ranges
 73 between Rs: 10-50 (Rupees) depending on the size of the utensil, mode of transportation and
 74 distance involved.

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

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77 Objective/s of the study is also not indicated?

78

79 **Materials and Methods**

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

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Results and Discussion

Age of the Respondents

Your results should come first followed by citing the result/work of other researchers.

~~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). The data in~~ Table 1 shows 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.

Table 1: Distribution of the respondents according to their age

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

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106 | It is generally believed that with the increase in age, the individual become mentally mature and
107 | takes rational decisions and therefore, age can be one of the important factors affecting the
108 | behavior of the respondents (Amir, 2003).

110 | **Education Level of the ~~Respondents~~respondents**

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

114 | The majority of the respondents (??%) in the Peri-urban areas were illiterate because they have
115 | no better facilities for education. Qualitative data revealed that most of the people in these areas
116 | belong to poor families so they have no access are not able to get higher education. Table 2????

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

125 | **Table 2: Distribution of the respondents according to their education**

Education Level	Frequency	Percentage
Illiterate	28	23.3
Primary	26	21.7

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Middle	41	34.2
Above ~~Metri~~ <u>metric</u> ???	25	20.8
Total	120	100.0

Animals ~~Rearing~~rearing

Livestock enterprises are particularly important for the landless and small farmers because livestock provides 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. Finally, for subsistence farmers, livestock products like fresh milk and butter or *desi* ghee provide food security for the family and help to meet nutritional requirements in terms of calories and protein. Some livestock like donkey, bulls and camels are also used for the transportation purposes in these areas. ~~like donkey, bulls and camels.~~

Table 3????

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Table 3: Distribution of the respondents according to the ~~number~~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

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With regards ~~ing to~~ to the ~~rearing of different animals,~~ their production and use of livestock products; cows and buffaloes were mostly reared for milk production. In the study area, a single cow ~~produced~~produces about 6-8 liter milk/day while 10-12 liter/day milk was produced by buffaloes. About one third of the total milk produced was used for domestic purpose and remaining amount was ~~sold~~sell out to near ~~by~~by milk shop, *gawalas*, hotels etc. ~~†~~†They also produce

144 milk by-products like “*Dasi-dasi*” ghee and *Butter*” and sell out for earning. Some peoples
145 also have a small *flock* of sheep and goat. Mostly these are reared for meat
146 purpose but some people use goat milk for domestic *use*. *Peri urban* dwellers mostly sell
147 out goat and sheep on “*Eid-ul Azha*” because at this occasion they get much better profit than
148 other days. However, some people also sell out in “*Maveeshi Mandi*” (*Livestock*
149 *livestock Market*) when they are in drastic condition.

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151 *Milk Supply Chain in Peri Urban Areas*

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

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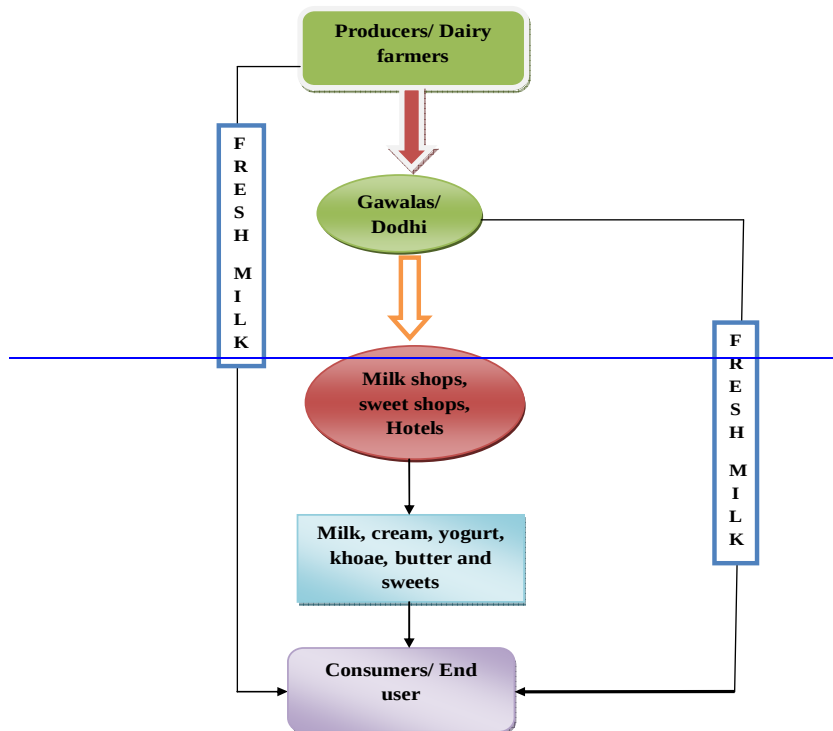


Fig 1. Milk supply chain in the Peri-urban areas

Proper Barn for Animal Keeping

The data from the Table 4 reveals that more than 50% of respondents have no proper barn for animal while they are also rearing animals get money and products from their animals.

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

Proper Barn for keeping animal	Frequency	Percentage
Yes	48	40.0
No	72	60.0

Total	120	100.0
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Animal Diseases diseases a Awareness

Animal's diseases are the major problem in Peri-urban and also in rural areas. Due to these diseases, they are facing challenges for production. As indicated in Table 5 m-More than 50.8% respondent has awareness regarding animal diseases whereas the remaining 49.2-% has no information regarding diseases of animal.

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Table 5: Distribution of respondents regarding animal diseases awareness

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

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Information Sources sources

The Peri urban dwellers get their latest information regarding the livestock and agriculture from different sources. Most of the respondents (32.5%) get their information from their neighbor farmers (Table 6). About 20.0% of the respondents have extension department as main source of information regarding the livestock and agriculture, while 11.7, 6.7 and 17.5 respondents have T.V, radio and other sources of information, respectively. Newspaper has no role to disseminate agricultural information in the Peri urban areas. What are and about other sources indicated in Table 6???

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Table 6: Distribution of respondents according to source of information

Source of information	Frequency (out of 120 respondents)	Percentage
Neighbor farmer	39	32.5
Extension department	24	20.0
Extension department	24	20.0
Neighbor farmer	24	20.0
Other sources	21	17.5
Radio	21	17.5
Not get information	18	15.0
T.V.	18	15.0
TV	14	11.7
Newspaper	14	11.7
Radio	6	5.0
Other sources	6	5.0
Newspaper	0	0.0
Not get information	0	0.0

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Milk supply chain in per-urban areas of ????

Milk is produced from dairy farmers in variable quantity depending on number of milch (milking) animals and better management practices. Milk produced in the Per-urban areas is either directly bought by the neighbors or the milk producer sell their produced milk to the *gawalas* (milk purchaser and further seller or called as middle man) after full filling their own

requirements. The neighbors directly getting milk from the producers are satisfied with the purity of milk although it cost is higher than market price. Further *gawalas* sell fresh milk to the end users and also to the milk shops, hotels and sweet shops, these milk shops process milk by boiling, chilling, making cream, yogurt butter and *khoa*. When the milk is transported through *gawalas* milk is not pure because *gawalas* might add water to increase the milk quantity and also use other chemicals for thickness??? which are very harmful for health. Mostly in the hotels milk is used for tea and *lassi* (yogurt shake). In the sweet shops milk is either used for making sweets or packed for daily usage. From these shops milk and milk by products are directly supplied to the end users or consumers. Details of milk supply chain is given in Figure 1.

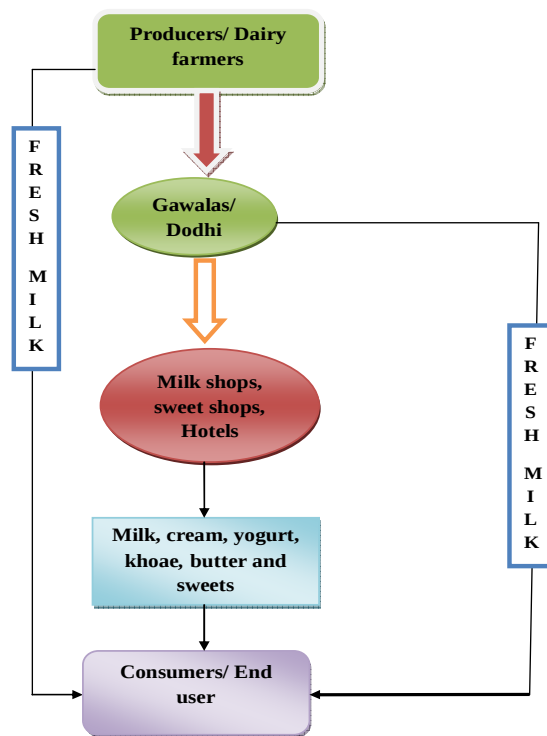


Figure 1. Milk supply chain in the peri-urban areas of ???

Conclusion and Recommendations

216 It is concluded that Livestock have massive share in every country like Pakistan's economy and
217 it is also a good source of food and cash income. However, farmers do not have animal sheds
218 and have little knowledge about credible information source(s) regarding diseases of animals
219 and marketing of the milk. The role of middlemen (gawala) was dominant in milk marketing
220 chain. of milk. ~~Livestock have massive share in every country like Pakistan's economy and it is~~
221 ~~also a good source of food and cash income.~~ Therefore government should ~~be~~ focus on diseases
222 and marketing aspects of milk ~~livestock~~ production in Peri urban areas of Jhang district.
223 Jhang Pakistan.
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226

227 We have the pearls of our eyes to admire countless blessings of Allah Almighty because the
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