

Original Research Article

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

Nadeem Abbas Shah^{1*}, Raees Abbas¹, M. Hammad Raza¹, Babar Shahbaz¹, Badar Naseem Siddiqui² and Nowshad Khan³

¹ Institute of Agri. Extension and Rural Development, University of Agriculture, Faisalabad, Pakistan

² Pir Meher Ali Shah Arid Agriuculture PMAS University Rawalpindi

³ Allama Iqbal Open University Islamabad

ABSTRACT

The Peri urban areas are facing the challenge of poverty, hunger, unemployment, pollution and ineffective utilization of natural resources. Present paper focus 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 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. Fellow farmers are the 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.

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

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 'rural-urban fringe' where city and country land uses go beyond (Adell, 1999). Peri-urban boundary has a place that has a large impact on people. Due to the flow of goods, resources, people and capital to Peri urban areas, the sustainability of cities and rural areas is affected. The

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34 Peri urban areas are facing the challenge of poverty, hunger, unemployment, pollution and
35 ineffective utilization of natural resources (Mycoo, 2006). The combination of urban and rural
36 activities with negligent regulations, industrial and urban wastes, and intensive agriculture
37 releases toxic chemicals when combine with poor waste and sanitation management, often makes
38 Peri-urban areas much polluted place (Singh and Kumar, 2006). Douglas 2006 stated that the
39 Peri urban areas are facing significant challenges of access to land, problems related to soil and
40 water quality gradually more polluted by Peri urban waste, urban waste disposal and industrial
41 activities. Livestock sector is thought to be one of the most important sectors in the economy of
42 Peri-urban areas. Earlier it was a traditional practice but now livestock are mostly reared for
43 commercial purposes. It plays very important role in enhancing the health and food security
44 status in developing country. Livestock holding is considered as an important strategy for
45 poverty reduction in rural communities of Pakistan. The livestock accounts for approximately
46 55.9 percent of the agriculture value added and 11.5 percent to GDP during 2012-13 (Govt. of
47 Pakistan, 2013). Livestock commodities are very important for farmers because it provides
48 independent of land and free ownership of assets. Livestock products and byproducts provide
49 fast cash at the time of need and food. The dairy products like fresh milk, butter, lassi and desi
50 ghee have important role in improving food security condition of the people. (Burki,et. al 2005).

51 Livestock products, especially dairy products, provide vitamin A, carbohydrates, protein and
52 calcium, which can make a significant contribution to human nutrition in developing countries
53 (Ahmed et. al, 2003). Milk is very important commodity of rural and Peri urban areas providing
54 food requirements to the dwellers. Milk produced in Peri-urban areas is either used for food in
55 the household or sold to earn some money. The earned money is used to buy other commodities
56 including food items for their family. It significantly enables the milk producers to be
57 prosperous. (MOA, 1998). Sharif et. al. 2003 noted that 80% milk is produced by rural areas,
58 while 20 to 25% produced by Peri-urban areas and cities are the low producers of milk. The
59 same author also further stated that about 90% of the sold milk comes from small farmers
60 whereas the remaining is supplied by commercial farms. The traditional milk marketing channel
61 involves the collection of milk from farmers in remote areas by the village dodhi. The
62 unprocessed milk reaches the final consumer through a variety of peoples like through
63 middleman, collection centers, milk shops, sweet shops, and gawalas. Transportation costs for
64 moving milk from small towns or transaction points on main highways, to cities, ranges between

65 Rs: 10-50 (Rupees) depending on the size of the utensil, mode of transportation and distance
66 involved.

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68 **Materials and Methods**

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

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82 **Results and Discussion**

83 **Age of the Respondents**

84 It is generally believed that with the increase in age, the individual become mentally mature and
85 takes rational decisions and therefore, age can be one of the important factors affecting the
86 behavior of the respondents (Amir, 2003). The data in Table 1 show that about 32.5% of the
87 respondents were up to 40 years of age, 20.8% of the respondents were up to 41-50 years of age.
88 However, 32.5% of the respondents were above the age 50-60 years and 14.2% above 60.

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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

Education Level of the Respondents

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.

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: Distribution of the respondents according to their education

Education Level	Frequency	Percentage
Illiterate	28	23.3
Primary	26	21.7
Middle	41	34.2
Above Metric	25	20.8
Total	120	100.0

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106 Animals Rearing

107 Livestock enterprises are particularly important for the landless and small farmers because
 108 livestock provides an alternative form of asset ownership, independent of land. For these poorer
 109 segments of the rural population, livestock ownership acts as insurance in the case of crop
 110 failure and emergencies. Finally, for subsistence farmers, livestock products like fresh milk
 111 and butter or *desi ghee* provide food security for the family and help to meet nutritional
 112 requirements in terms of calories and protein. Some livestock also used for the transportation
 113 purposes in these areas like donkey, bulls and camels.

114 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

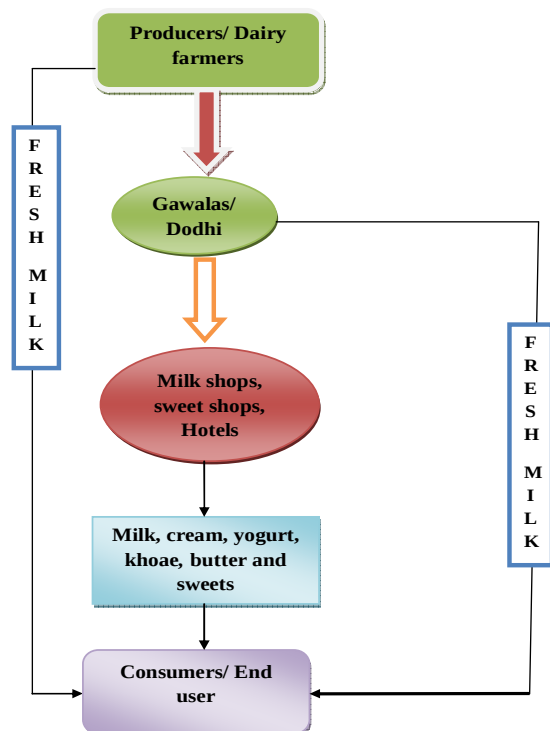
115 With regarding to the rearing of different animals, their production and use of livestock
 116 products; cows and buffaloes were mostly reared for milk production. In the study area, a single
 117 cow produced about 6-8 liter milk/day while 10-12 liter/day milk was produced by buffaloes.

118 About one third of the total milk produced was used for domestic purpose and remaining
119 amount was sell out to nearly milk shop, *gawalas*, hotels etc. they also produce milk by-
120 products like “*Dasi ghee* and Butter” and sell out for earning. Some peoples also have a small
121 population of sheep and goat. Mostly these are reared for meat purpose but some people use
122 goat milk for domestic purpose. Peri urban dwellers mostly sell out goat and sheep on “*Eid-ul*
123 *Azha*” because at this occasion they get much better profit than other days. However, some
124 people also sell out in “*Maveeshi Mandi*” (Livestock Market) when they are in
125 drastic condition.

126 **Milk Supply Chain in Per-Urban Areas**

127 Milk is produced from dairy farmers in variable quantity depending on number of milch
128 (Milking) animals and better management practices. Milk produced in the Per-urban areas is
129 either directly bought by the neighbors or the milk producer sell their produced milk to the
130 *gawalas* (Milk purchaser and seller) after full filling their own requirements. The neighbors
131 directly getting milk from the producers are satisfied with the purity of milk although it costs
132 high than market. Further *gawalas* sell fresh milk to the end users and also to the milk shops,
133 hotels and sweet shops, these milk shops process milk by boiling, chilling, making cream, yogurt
134 butter and khoa. When the milk is transported through *gawalas* milk is not pure because
135 *gawalas* must added water to increase the milk quantity and also use other chemicals for
136 thickness which are very harmful for health. Mostly in the hotels milk is used for tea and *lassi*
137 (Yogurt shake). In the sweet shops milk is either used for making sweets or packed for daily
138 usage. From these shops milk and products by milk are directly supplied to the end users or
139 consumers. Further detail of milk supply chain is given below

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141 Fig 1. Milk supply chain in the Per-urban areas

142 Proper **Barn** for Animal Keeping

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

145 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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147 **Animal Diseases Awareness**

148 Animal's diseases are the major problem in Peri-urban and also in rural areas. Due to these
149 diseases, they are facing challenges for production. As indicated in Table 5. More than 50.8%
150 respondent has awareness regarding animal diseases remaining 49.2 % has no information
151 regarding diseases of animal.
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154 **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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156 **Information Sources**

157 The Peri urban dwellers get their latest information regarding the livestock and agriculture from
158 different sources. Most of the respondents (32.5%) get their information from their neighbor
159 farmers (Table 6). About 20.0% respondents have extension department main source of
160 information regarding the livestock and agriculture, while 11.7, 6.7 and 17.5 respondents
161 have T.V, radio and other sources of information respectively. Newspaper has no role to
162 disseminate agricultural information in the Peri urban
163 areas.
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Table 6: Distribution of respondents according to source of information

Source of information	Frequency (out of 120 respondents)	Percentage
Extension department	24	20.0
Neighbor farmer	39	32.5
Radio	0	6.7
T.V.	14	11.7
Newspaper	0	0.0
Other sources	21	17.5
Not get information	18	15

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Conclusion and Recommendations

172 It is concluded that farmers do not have animal sheds and have little knowledge about credible
 173 information source(s) regarding diseases of animals and marketing of the milk. The role of
 174 middlemen (gawala) was dominant in marketing chain of milk. Livestock have massive share in
 175 every country like Pakistan's economy and it is also a good source of food and cash income.
 176 Therefore government should be focus on diseases and marketing aspects of livestock
 177 production in Peri urban areas of district Jhang, Pakistan.

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