

Original Research Article

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

ABSTRACT

The peri urban areas are facing the challenge of poverty, hunger, unemployment, pollution and ineffective utilization of natural resources (Mycos, 2006). 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 were analyzed through SPSS and content analysis technique.

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.

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 were analyzed through SPSS and content analysis technique. Results revealed that an overwhelming majority of the respondents had no proper place for animals keeping. Fellow farmers were the source of information for about 32% of the respondents. Cows and buffaloes were major milk producing animals in study area. Milk and milk was mostly sold through Gwalas as a middlemen.

Key words: 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 'rural-urban fringe' where city and country land uses go beyond (Adell, 1999). Peri-urban

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30 boundary has a place that has a large impact on people. Due to the flow of goods, resources,
31 people and capital to peri urban areas, the sustainability of cities and rural areas is affected. The

32 peri urban areas are facing the challenge of poverty, hunger, unemployment, pollution and
33 ineffective utilization of natural resources (Mycoo, 2006). The combination of urban and rural
34 activities with negligent regulations, industrial and urban wastes, and intensive agriculture
35 releases toxic chemicals ~~which~~ when combine with poor waste and sanitation management,
36 often makes peri-urban areas much polluted place (Singh and Kumar, 2006). Moreover,
(Douglas, 2006)

37 stated that the peri urban areas are facing significant challenges of access to land, problems
38 related to soil and water quality gradually more polluted by peri urban waste, urban waste
39 disposal and industrial activities. Livestock sector is thought to be one of the most important
40 sectors in the economy of peri-urban areas. Earlier it was a traditional practice but now livestock
41 are mostly reared for commercial purposes. It plays very important role in enhancing the health
42 and food security status in developing country. Livestock holding is considered as an important
43 strategy for poverty reduction in rural communities of Pakistan. The livestock accounts for
44 approximately 55.9 percent of the agriculture value added and 11.5 percent to GDP during 2012-
45 13 (Govt. of Pakistan, 2013). Livestock commodities are very important for tenants and small
46 farmers because it provides independent of land and free ownership of assets. Livestock products
47 and byproducts provide fast cash at the time of need and food. The livestock dairy products like
fresh

48 milk, butter, *lassi* and *desi ghee* have important role in improving food security condition of the
49 people. (Burki, *et.al* 2005).

50 Livestock products, especially dairy products, provide vitamin A, carbohydrates, protein and
51 calcium, which can make a significant contribution to human nutrition in developing countries
52 (Ahmed *et al.*, 2003). Milk is very important commodity of rural and peri urban areas providing
53 food requirements to the dwellers. Milk produced in peri-urban areas is either used for food in
54 the household or sold to earn some money. The earned money is used to buy other commodities
55 including food items for their family. It significantly enables the milk producers to be
56 prosperous. It is a good sign for women, children and all the population in the country that on
57 small and large scale dairy farming is increasing to meet the needs of food security (MOA,
58 1998). (Sharif *et al.*, (2003) noted that rural areas produced 80% of milk, while 15% is produced
59 in peri-urban areas and cities are the low producers. The same authors also He further stated that
about 90% of the sold

60 milk comes from small farmers, whereas ~~and~~ the remaining is supplied by commercial
farms. The

61 traditional milk marketing channel involves the collection of milk from farmers in remote areas
62 by the village *dodhi*. The unprocessed milk reaches the final consumer through a variety of

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63 ~~agents like~~ peoples?, milk shops, sweet shops, and *gawalas*. Transportation costs for moving milk
from small
64 towns or transaction points on main highways, to cities, ranges between ~~Rs?~~ 10-50 depending on
65 the size of the utensil, mode of transportation and distance involved. Therefore, the objective of
this paper was.....

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67 **Materials and Methods**

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

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Comment [A6]: Mostly this types of data collection leads to biasness, for such types of scientific publication, in the body of the paper you try to discuss about milk production capacity of cow, and buffalo; milk utilization (home consumption and sold) etc ... I didn't see any table to supplement the results of respondents are you get information through observation, if so difficult to estimate through observation, please if you have a table add up on it

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85 **Results and Discussion**

86 **Age of the Respondents**

87 It is generally believed that with the increase in age the individual become mentally mature and
88 takes rational decisions and therefore, age can be one of the important factors affecting the
89 behavior of the respondents (Amir, 2003). 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.
Data regarding the age of respondents are given
90 below.

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91 **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

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93 The data in Table 1 show that about 32.5% of the respondents were up to 40 years of age, 20.8%
94 of the respondents were up to 41-50 years of age. However, 32.5% of the respondents were
95 above the age 50-60 years and 14.2% above 60.

96 **Education level of the respondents**

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

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

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101 **Table 2: Distribution of the respondents according to their Education**

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

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107 **Animals 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 also used for the transportation purposes in these areas.

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108 **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

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110 Livestock enterprises are particularly important for the landless and small farmers because
111 livestock provides an alternative form of asset ownership, independent of land. For these poorer
112 segments of the rural population, livestock ownership acts as insurance in the case of crop failure
113 and emergencies. Finally, for subsistence farmers, livestock products like fresh milk and butter
114 or *desi ghee* provide food security for the family and help to meet nutritional requirements in

115 terms of calories and protein. Some livestock also used for the transportation purposes in these
116 areas.

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117 ~~Questions were asked to the respondents~~With regarding to the rearing of different animals, their
118 production and use of livestock products. ~~Qualitative data revealed that,~~ cows and buffaloes were
119 mostly reared for milk production. In the study area, a single cow produced about 6-8 liter
120 milk/day while 10-12 liter/day milk was produced by buffaloes. About one third of the total milk
121 produce was used for domestic purpose and remaining amount was sell out to nearly milk shop,
122 *gawalas*, hotels etc. they also produce milk by- products like "*Dasi ghee* and Butter" and sell out
123 for earning. Some peoples also have a small population of sheep and goat. Mostly these are
124 reared for meat purpose but some people use goat milk for domestic purpose. Peri urban dwellers
125 mostly sell out goat and sheep on "*Eid-ul Azha*" because at this occasion they get much better
126 profit than other days. ~~However, but~~ some people also sell out in "*Maveeshi Mandi*" when
127 they are in
drastic condition.

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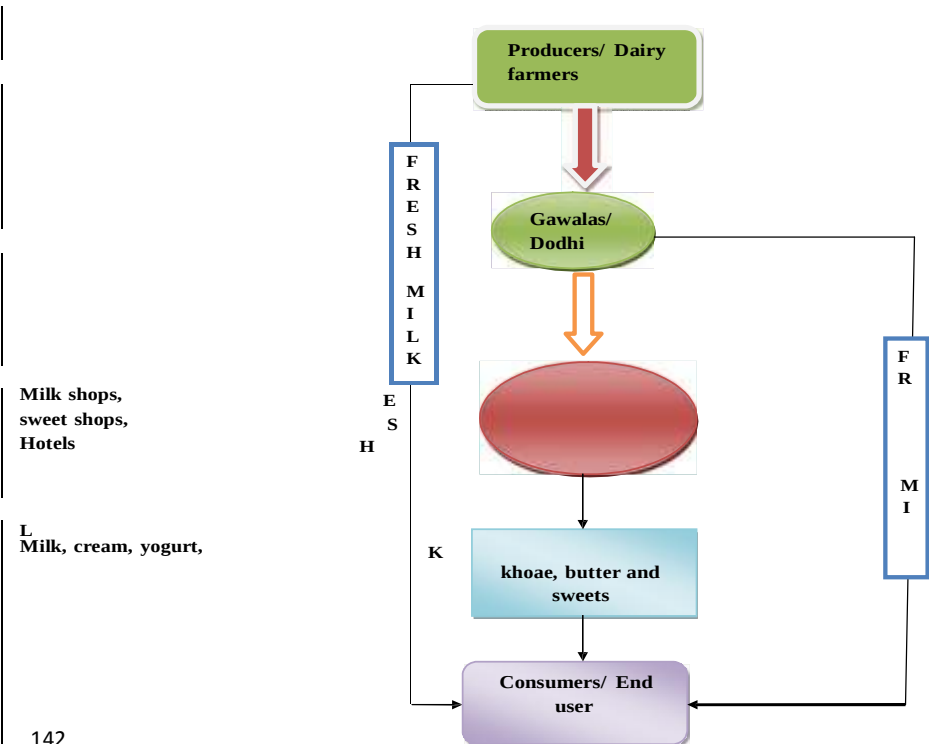
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128 Milk Supply Chain in Per-urban Areas

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

(Fig 1)



142

143 Fig 1. Milk supply chain

Proper place for animal keeping

The data from the table reveals that more than fifty percent of respondents have no proper place for animal while they are also rearing animals get money and products from these.

144 Data regarding the proper place for animal is given below

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

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

146

147 The data from the table reveals that more than fifty percent of respondents have no proper place
148 for animal while they are also rearing animals get money and products from these.

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149 **Animal diseases awareness**

150 Animal's diseases are the major problem in peri-urban and also in rural areas. Due to these
151 diseases they facing challenges for producers losses. The data from the table show that more
than 50.8% respondent has awareness regarding animal diseases remaining 49.2 % has no
information regarding diseases of animal. Data regarding diseases awareness is given below.

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152 **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

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153
154 The data from the table show that more than 50.8% respondent has awareness regarding animal
155 diseases remaining 49.2 % has no information regarding diseases of animal.

156
157 **Information sources**

158 The peri urban dwellers get their latest information regarding the livestock and agriculture from
159 different sources. The data from the table reveals that Most of the respondents (32.5%) get their
information from their neighbor farmers (Table 6). About 20.0% respondents have extension
department main source of information regarding the livestock and agriculture, while 8.3, 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.
Data regarding the proper placing for animal is given below

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Source of information	Frequency (out of 120 respondents)	Percent
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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The data from the table reveals that most of the respondents 32.5% get their information from their neighbor farmers. About 20.0% respondents have extension department main source of information regarding the livestock and agriculture, while 8.3, 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.

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167 Conclusion and Recommendations

168 It is concluded that farmers do not had animal sheds and had little knowledge about credible
169 information source(s) regarding diseases of animals and marketing of milk. The role of
170 middlemen (gawala) was dominant in marketing chain of milk. Livestock have massive share in
171 ~~our~~ economy and it is also a good source of food and cash income by product so, Therefore, It is
172 suggested that government should be focus on diseases and marketing aspects of livestock
173 production in peri urban areas of district
Jhang Pakistan.

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