

Trends in Small Ruminant Meat Production, Import and Demand in Jammu and Kashmir State

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ABSTRACT

The total sheep population of in Kashmir division was about 17.37 lakh heads, where as the sheep population in Jammu division was 23.47 lakh heads. Similarly the goat population of Kashmir division was around 21.68 lakh heads and that of the Jammu division was around 39.07 lakh heads. The mutton production in Kashmir province was 130.35 lakh Kg during the year 2008-09, followed by 131.42 lakh Kg in 2009-10 and 133.77 lakh Kg in 2010-11. The mutton production in the Kashmir division shows an increasing trend since 2002-03 with a positive slope of 1.37 lakh Kg per year ($R^2=0.897$). A total of about 147 lakh sheep and goat heads have been imported into the state from the year 2006-07 to year 2016-17. The meat import shows an increasing trend up to year 2012-13 and thereafter shows a decreasing trend from 2012-12 to 2016-17. It was found that since 2006, the imported livestock consisted of about 96 per cent sheep and only 4 per cent goats. There is an increasing trend in the import of sheep and goat from 1973 to 2010. The regression equation gives a positive slope of 0.57 lakh sheep/ goats per year with R^2 value of 0.7952. However, a decreasing trend (slope=-12058 quintals/year, $R^2=0.3706$) for import was found for the years 2010-2015. As per the projected population, production and import of mutton/ chevon in the state, there is a deficit of 710.88 lakh Kg for the whole population. However there is a deficit of 257.57 lakh Kg for the non-vegetarian population of Jammu and Kashmir.

Key words: Chevon, deficit, goat husbandry, mutton, sheep husbandry,

INTRODUCTION

Small ruminants contributed nearly 13407 thousand tonnes to the world meat production, and from this share, the total production of meat from sheep and goats in India was about 890 thousand tonnes in 2011, which has seen an increase of about 2.3 per cent, per annum since 2000. Among the top twenty exported commodities of the world, sheep meat ranks 13th with a value of approximately \$2.5 billion (FAOSTAT, 2014).

Meat consumption is an indicator of the economic status of a country or an individual. The domestic meat demand is postulated to increase with increasing literacy and family income, as the people of higher social or economic status often demand a more significant amount of high-quality meat products (Birthal and Joshi, 2006). The per capita meat consumption in developed countries is much higher compared with the developing countries.

In African and Asian countries least amount of meat is consumed. The ten lowest-ranking countries in meat consumption consume 3 to 5 Kg per person in a year (EARO, 1999). Small ruminants contribute significantly to the livelihood of a large population in low input, smallholder production systems. India has about 15.1 per cent of the world's total sheep and goat (FAOSTAT, 2014). As per the 19th livestock census, the total number of sheep in India was 65.06 million numbers in 2012, which has declined by about 9.07 per cent over census 2007. The goat population has also fallen by 3.82 per cent over the previous census as the total goat in the country was 135.17 million numbers in 2012. Sheep contributes about 12.71 per cent, whereas goats contribute about 26.40 per cent to the total livestock population of India. The corresponding figures as per the 18th Livestock Census were 13.50 per cent and 26.53 per cent respectively (Livestock Census, 2012). In the year 1999-2000, the total meat consumption in India was about 3.1 million tonnes and it has been

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projected to rise to 8.0-9.0 million tonnes by 2020, with the contribution of mutton being substantial (BIRTHAL and TANEJA, 2006). Integrated Sample Survey (2011-12) reports that the total estimated meat production of Jammu and Kashmir state was worked out to be 322.781 lakh Kg consisting of 80.79 per cent of meat from small ruminants (260.762 lakh Kg) and 19.21 per cent of meat from poultry (62.019 lakh Kg). The meat availability was 2.701 Kg per person per year against 2.650 Kg for 2010-11. Meat production has registered growth from 308.986 lakh Kg to 322.781 lakh Kg during the year 2011-12 resulting into 4.47 per cent growth over the previous year. However, due to a mismatch in the demand and supply of mutton, the import of sheep and goats is increasing continuously. During the period 2000 to 2010, there was an increase by over 26 per cent for the import of sheep and goats into the state. During 2013-14, about 13 lakh sheep and goats were imported, and therefore hundreds of crores were spent on import of meat (Economic Survey, 2014). Moreover, there is incidence of diseases in the small ruminant flocks of Jammu and Kashmir, which may also result in low production from sheep and goats (RASHID *et al.*, 2018). Therefore, an effort was made to study the trends in small ruminant meat import, production and demand in Jammu and Kashmir.

METHODOLOGY

To analyse the trends in small ruminant meat production, import and demand in the state, secondary data pertaining to import of small ruminants in the state was obtained from various sources like Sheep Husbandry Department, Animal Husbandry Department, Commercial Taxes Department at Lakanpur check post, Livestock Census reports of India and Jammu and Kashmir state, and Directorate of Economics and Statistics, J&K were used to collect data regarding meat production from sheep and goats in India. The data were classified, quantified and tabulated, using Microsoft Office Excel 2007. The presentation of data was done and calculations were made to give a pertinent, valid and reliable answer to the specific objective.

RESULTS AND DISCUSSION

Estimated small ruminant population of the state, as per the Integrated Sample Survey Report 2011-12, was 57.34 lakh (39.204 lakh sheep and 18.136 lakh goats) (ISS, 2011-12). As per the Directorate of Sheep Husbandry Department, Kashmir, the mutton production in Kashmir province was 130.35 lakh Kg during the year 2008-09, followed by 131.42 lakh Kg in 2009-10 and 133.77 lakh Kg in 2010-11 (Table 1). Moreover, currently the meat production from sheep and goats in whole state

was estimated to be 323.57 lakh Kg (2016-17). The details of the mutton production since 2002-03 are as under:

Table 1: Small ruminant meat production in Jammu and Kashmir state

Year	Meat production in Jammu division (lakh Kg)	Meat production in Kashmir division (lakh Kg)	Meat production (lakh Kg)
2002-03*	-	121.45	-
2003-04*	-	122.65	-
2004-05*	-	127.66	-
2005-06*	-	128.35	-
2006-07*	-	129.22	-
2007-08*	-	129.87	-
2008-09*	-	130.35	-
2009-10*	-	131.42	-
2010-11*	-	133.77	-
2013-14**	209.47	106.35	315.82
2014-15**	211.97	107.03	319.00
2015-16**	214.40	107.56	321.96
2016-17**	214.77	108.80	323.57

*Source: Sheep Husbandry Department, Jammu and Kashmir (2016),

**Source: Economic Survey, 2017, -Not Available

The mutton production in the Kashmir division shows an increasing trend since 2002-03 as per the Directorate of Sheep Husbandry, Kashmir. Figure 4.4 depicts a positive slope of 1.37 lakh Kg per year and $R^2=0.897$ (fig. 1). However, when incorporated with the figures of mutton production, as reported by Economic Survey (2017), there is a decline in meat production from 121.45 lakh Kg during 2002-03 to 108.80 lakh Kg during 2016-17. Moreover, the small ruminant meat production data for the years 2011-12 and 2012-13, and the production figures for Jammu division from year 2002-03 to 2010-11 could not be found.

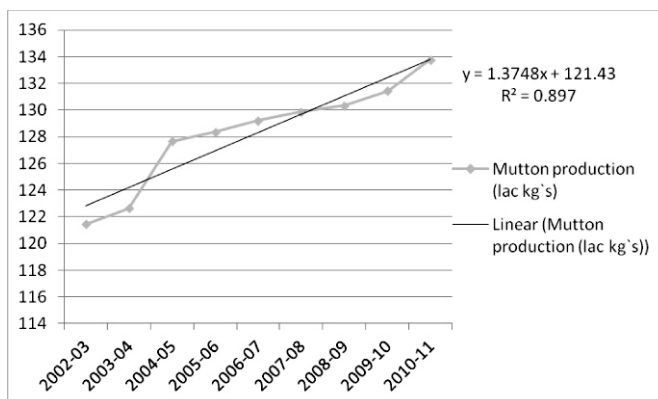


Fig. 1. Mutton production in Kashmir division (lakh Kg)

As far as the import of small ruminants from other states into Jammu and Kashmir is concerned, it was found

that since 2006, the imported livestock consisted of about 96 per cent sheep and only 4 per cent goats (fig. 2). A total of about 147 lakh small ruminants have been imported into the state from the year 2006-07 to year 2016-17. As can be seen from the table 2, the meat import shows an increasing trend up to year 2012-13 and thereafter shows a decreasing trend from 2012-12 to 2016-17.

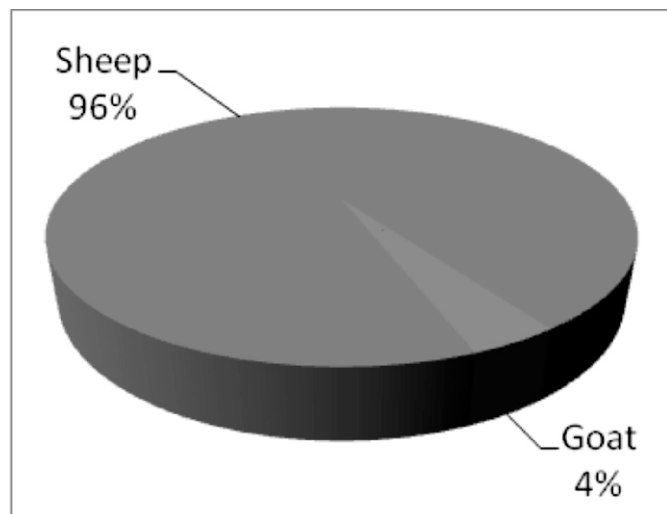


Fig. 2. Import of small ruminants into state (species wise)

Table 2: Import of sheep and goat into Jammu and Kashmir (2006-2016) (No.'s)

Year	Sheep	Goat	Total (heads)
2006-07	13,74,530.00	1,09,097.00	14,83,627.00
2007-08	13,45,241.00	94,526.00	14,39,767.00
2008-09	12,96,732.00	96,208.00	13,92,940.00
2009-10	14,86,757.00	64,667.00	15,51,424.00
2010-11	12,45,876.00	49,066.00	12,94,942.00
2011-12	12,50,717.00	43,103.00	12,93,820.00
2012-13	13,51,301.00	29,101.00	13,80,402.00
2013-14	13,24,058.00	46,697.00	13,70,755.00
2014-15	12,69,540.00	17,729.00	12,87,269.00
2015-16	12,00,056.00	10,258.00	12,10,314.00
2016-17	10,13,506.00	11,133.00	10,24,639.00
Total	1,41,58,314.00	5,71,585.00	1,47,29,899.00

*Source: Sheep Husbandry Department, Jammu and Kashmir (2016)

Overall, a general decreasing trend for import of small ruminants in the state can be seen in Figure 3 (slope= -34597 sheep and goats/ year, $R^2=0.6458$), with decrease in sheep import (slope= -24431 sheep/ year, $R^2=0.4616$) as well as goat import (slope= -10166 goats/ year, $R^2=0.916$).

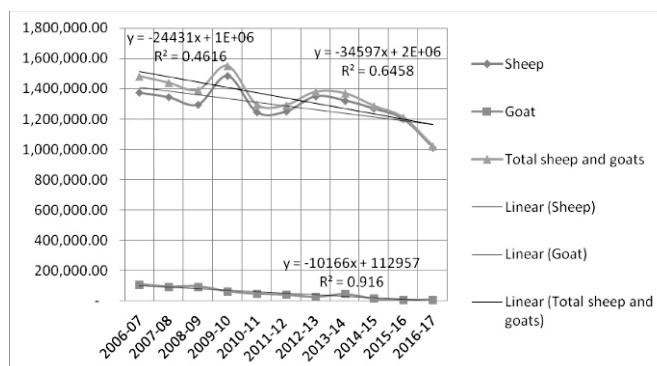


Fig. 3. Import of sheep and goat into Jammu and Kashmir (2006-2016)

The data regarding import of small ruminants since 1973-74 were obtained from the Directorate of Economics and Statistics, Jammu and Kashmir and it shows a general increasing trend of the import of sheep and goats into the state (Table 3). In the year 1973-74, around 5.47 lakh small ruminants were imported into the state as compared to the 14.07 lakh of 2000-01, 15.97 lakh of 2007-08 and 15.86 lakh of 2009-10 (table 4.49). The regression equation gives a positive slope of 0.57 lakh small ruminants per year with R^2 value of 0.7952 (fig. 5).

Table 3: Import of small ruminants in Jammu and Kashmir from 1973-74 to 2009-10 (No.'s)

Year	No. of small ruminants imported (heads)
1973-74	547139
1977-78	675001
1980-81	932772
1985-86	1149855
1990-91	724839
1995-96	929797
1999-00	1242634
2000-01	1407405
2001-02	1274297
2002-03	1374774
2003-04	1352828
2004-05	1361728
2005-06	1466237
2006-07	1428497
2007-08	1597081
2008-09	1422870
2009-10	1586530

source: Digest of Statistics 2014-15 (xxii-trade And Commerce, Table No. 22.00, Goods Imported Into The State), Page 371-373

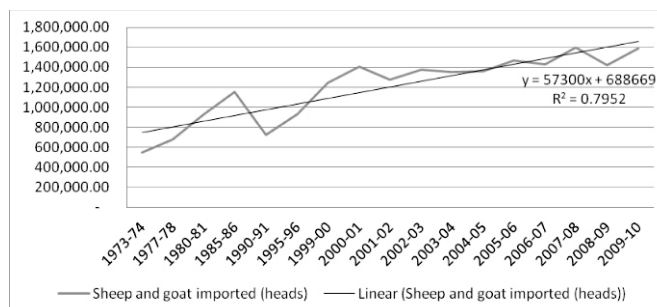


Fig. 5. Import of small ruminants from 1973-74 to 2009-10

Directorate of Economics and Statistics, Jammu and Kashmir had import data since 1974 to 2009 in unit; number of animals imported (heads) and thereafter in units of quintals. Therefore the import data with different units were analyzed separately. Overall, again a decreasing trend was seen for the years 2010-11 to 2014-15 with the import being around 4.85 lakh quintals in the year 2010-11, as opposed to the 4.10 lakh quintals in year 2014-15 (Table 4).

Table 4: Import of small ruminants in Jammu and Kashmir from 2010-11 to 2014-15 (quintals)

Year	Small ruminants imported (quintals)
2010-11	485268
2011-12	406756
2012-13	436982
2013-14	435461
2014-15	410625

source: Digest of Statistics 2014-15 (xxii-trade And Commerce, Table No. 22.00, Goods Imported Into The State), Page 371-373

A decreasing trend for import mutton/chevon (quintals) into the state can be clearly seen in the Figure 6 (slope = -12058 quintals/ year, $R^2=0.3706$).

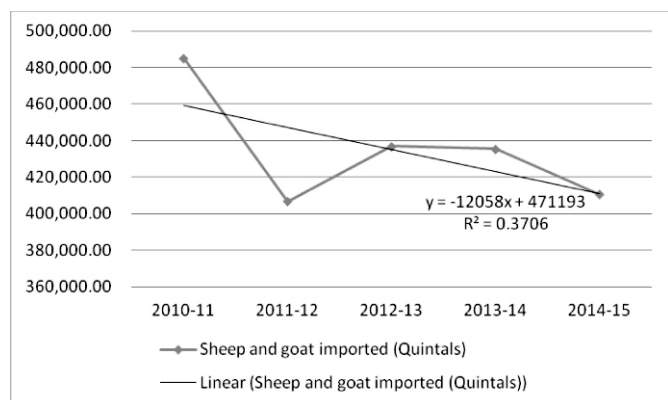


Fig 6. Small ruminant meat imported in Jammu and Kashmir from 2010-11 to 2014-15 (quintals)

The meat deficit in Jammu and Kashmir was calculated on the basis of Indian Council of Medical Research (ICMR) recommendation, i.e. requirement of meat at the rate of 35 grams/ person/ day for 313 days or 10.95 Kg/ capita/ year, for a given human population (Planning commission, 2002). The total population of Jammu and Kashmir was 125.413 lakh in 2011 and projected population estimate of the state for the year 2016-17 was 133.47 lakh in 2013-14 (Census, 2011). Further, the sample registration system reports 69 per cent of the population of Jammu and Kashmir to be non-vegetarian, i.e. 92.09 lakh (Baseline survey, 2014). Therefore, as per the projected population, production and import of mutton/ chevon, a deficit of 710.88 lakh Kg

for the total population and a deficit of 257.57 lakh Kg for the non-vegetarian population (69%) of the Jammu and Kashmir state can be estimated (Table 5).

Table 5: Small ruminant meat deficit in Jammu and Kashmir (2013-14)

Population particulars	Requirement as per ICMR recommendation @35g/person/day (lakh Kg)	Mutton/ chevon availability			Deficit (lakh Kg)
		Local source (lakh Kg)	Imports (lakh Kg)	Total mutton/ chevon availability (lakh Kg)	
Total human population (133.47 lakh)	1462.16	323.57	435.46	751.28	710.88
Non-vegetarian population (92.09 lakh)	1008.85	323.57	435.46	751.28	257.57

The deficit estimated by Sheep Husbandry Department with relevance to previous Census (2001), when the population of the state was 101.98 lakh, was 611.16 lakh Kg for whole population and 416.24 lakh Kg for the non-vegetarian population of Jammu and Kashmir. Therefore, rather than declining, there has been an increase of about 99.72 lakh Kg in the deficit for meat availability for whole population of the state, over a decade. However, the deficit of meat for the non-vegetarian population of the state has shown a decrease of 158.67 lakh Kg. This may be since the department had calculated the non-vegetarian population of the state to be 84 per cent (84.26 lakh), at that time. The average annual meat consumption in Ethiopia is estimated to be 8 Kg/ capita/ yr. Meat consumption in USA is about 124 Kg/ capita/ yr (340g/day) and the global average meat consumption is 38 Kg (104g/day) (EARO, 1999).

CONCLUSION

The mutton production in the Kashmir division shows an increasing trend since 2002-03 with a positive slope of 1.37 lakh Kg per year. The meat import shows an increasing trend up to year 2012-13 and thereafter shows a decreasing trend from 2012-12 to 2016-17. There is an increasing trend in the import of sheep and goat from 1973 to 2010. However, a decreasing trend for import was found for the years 2010-2015.

This may be an indicator to the fact that the state has realised the need of mutton and chevon production as per the current market demand. As per the projected population, production and import of mutton/ chevon in the state, there is a deficit of 710.88 lakh Kg for the whole population. However there is a deficit of 257.57 lakh Kg for the non-vegetarian population of Jammu and Kashmir. There is still a long way to go, in order to increase the meat production in state, to meet the local demand.

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