

Trends of Goat Meat Production in India: An Analysis Based on Data from Different Livestock Censuses

Lipu Senapati

ABSTRACT

Goat rearing requires low initial investment and fewer inputs but provides better economic prospects. In India, the total number of goat population marginally increased from 140.54 million as per the 18th livestock census (2007) to 148.88 million in the 20th livestock census (2019). However, the total goat meat production in India has almost doubled from 4.0 million tonnes to 8.6 million tonnes during the same period. The present study made an effort to examine the trend of goat meat production in India. The reasons behind such anomaly by making an in-depth study of secondary information available through various animal census rounds and other sources. The study found that the increase in goat meat production is primarily because of the commercialisation of the sector, breed development and better management practices.

Keywords: Livestock economics, agricultural economics

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I. INTRODUCTION

Compared to other livestock, goat rearing offers better economic and managerial prospects because of low initial investment and less input requirements, early maturity and high breeding capabilities, and easy availability of market. The goats considerable contribute to the Indian economy as long as provisions and in supplementing the income of the farmers particularly marginal, small and landless goat owners. This activity is associated with communal and cultural fabric of millions of resource poor farmers for whom goat along with other livestock offer varying degree of sustainable farming and economy constancy. The small and marginal farmers who cannot afford to maintain cow or buffalo see goats as the good alternative for milk and extra source of income. This is one of significant reasons pastoral households keep a small number of goats, although milk provide is not the main vital source of income of the household from goats. In distinct cow or buffalo, a number of goats can be maintained more simply and



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can be disposed of at no loss of natural calamities. Goat keeping not only provides income but also provides nutritional precautions to the resource poor farmers through producing nutritional food. Goat plays as a living bank of the goat keeping farmers.

Livestock in developing country like India have a significant role in its rural area population as it provides labour for land cultivation and huge number of people. Presently India possesses 109.85 million buffaloes, 192.49 million cattle, 148.88 million goats, 74.26 million sheep, 9.06 million pigs and 851.81 million poultry (Annual Report 2021-22, 20th Livestock Census). Nationally, total livestock population is 535.78 million, of which goat population stands at 148.88 million (27.8 per cent of the country's total livestock population). India holds first rank in the world population of goat (Annual Report 2020-21). As per "first revised estimates of national income, consumption expenditure and capital formation for 2019-20" the value of output from livestock sector was about Rs. 11, 14,149 crore at current prices during 20120-21 which is about 30.87 per cent of the value of output from agricultural and allied sector (National Statistical Office-2021). At constant prices the value of output from livestock was about Rs. 6, 17,117 crore during 2020-21 with a positive growth of 6.13 per cent over previous financial year.

According to DAHD report 2021-22, the meat production as on 2020-21 stands at 8.8 million tonnes. Goat industry also contributes three per cent of total milk production in India for the period of 2020-21 (DAHD, 2021-22). India shared 18 per cent of world's total goat population.

II. REVIEW OF LITERATURE

Previous works in this context include studies on the meat production trends in India. These are based on both primary and secondary data.

Ali (2007) estimates the performance of Indian meat process industry and its efficiency due to extreme use of factors of production. The study uses Data Envelopment Analysis (DEA) to measure the productivity and efficiency changes in India goat meat industry during 1980-81 to 2002-03. The study also uses Malmquist Total Factor Productivity (TFP) index for the measurement of productivity changes in India meat industry. The study uses one output (gross out) and four inputs such as labour, capital, raw materials and energy. The study found that the industry needs to modernize its production system to progress the capacity use of factor inputs mainly of raw materials, capital and energy.

Srinivas et al. (2014) evaluate the efficiency in marketing of goats and to recognise the factors influencing the choice of market places for goat producers in Baghland and Nangarhar province of Afghanistan. The total sample of 280 goat producers were selected in equal proportions for rain fed and irrigated systems from 28 villages in four districts in Baghland and Nangarhar province. The study uses Shepherd Index of marketing efficiency and binary logit model. The study found that efficiency was higher in Nangarhar than in Baghlan markets due to lower marketing margins. The expectable price per kilogram live weight of goat, breed, age of goats and production system are manipulating goat producer's choice of market location.

Suthar et al. (2019) studied the recent status, growth trend and contribution to the national economy of the livestock sector in India. The study is based on

secondary data from various Govt. publications such as National Accounts Statistics, published by Central Statistics Organization (CSO), Govt. of India, Annual Report, 2018-19 and Basic Animal Husbandry and Fisheries Statistics, 2018, published by Department of Animal Husbandry, Dairying and Fisheries, Ministry of Agriculture and Farmer's Welfare, Govt. of India and Livestock Production Statistics of India, 2017. The study using descriptive statistical tools like percentage, rank and compound growth rate (CGR) methods. This study found that livestock sector in India has depicted an increasing trend. The study also found that the Milk and milk products have the highest share two-third in the value of livestock products in 2017-18.

Bhardwaj et al. (2018) studied the current status of goat population in India and its changing in the national scenario of goat population. The study is based on secondary data from various sources of government publications. The study found that recent livestock sector in India has increased and also the goat population increased.

Kochewad et al. (2017) estimate the meat production in India. The study is based on secondary data from various sources of govt. publications. The study found that huge potential for meat production in India and dependency of people on this sector. India has a consistent result in achieving high compound growth rate in export volumes.

Senthilikumar and Muralidhar (2016) evaluate the meat consumption behavior among the rural, semi-urban and urban households of Karnataka. The total sample sizes of 90 meat consuming respondents were selected randomly. The study was uses Garrett ranking techniques adopted to measure the rank. The study found that taste and flavor of the meat had a good quality effect on meat consumption with all the places.

Suresh et al. (2012) examine the structure of India's meat export, the commodity and market diversification and the prospects of ushering the meat export. The study is based on secondary data from various govt. publications such as Livestock Census, food and Agricultural Organization (FAO). The study uses time series data and statistical tools like ratios, growth rates and also uses Simpson Index of Diversification to calculate the export diversification. The study found that the Indian meat export has been increasingly getting specialized towards buffalo meat while its export markets are gradually getting diversified.

The objective of this article is to examine the trend of goat meat production in India.

III. DATA AND METHODS

This study used secondary data from various government publications on meat production in India of various years. The data sources were from Livestock Census, Agricultural and Processed Food Products Export Development Authority (APEDA), Annual Report, 2020-21 and Basic Animal Husbandry and fisheries statistics (BAHS-2019) published by Department of Animal Husbandry, Dairying and Fisheries, Ministry of Agriculture and Farmer's Welfare, Govt. of India. The data on livestock population was compiled from reports of livestock census. The year-wise meat and goat meat production were collated from the databases of the BAHS, Annual Report and APEDA.



The study uses Descriptive statistics such as ratio, percentage and growth rate. Growth rates are shown for trend analysis in time series data from 2007-08 to 2019-20.

IV. RESULTS AND DISCUSSION

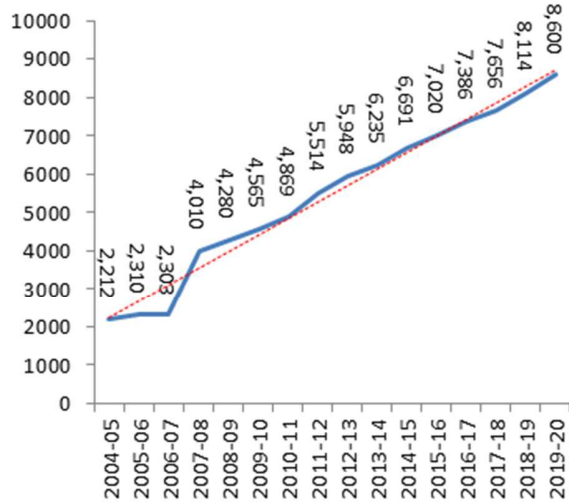
Meat Production in India

Over the last decades, the meat production has been increasing at a rate of six per cent per annum. Rising demand for meat has been the driving force behind it. While the per capita consumption of food grains has almost stagnated during 1990s, consumption of high value commodities like fruits, vegetables, milk, meat, eggs and fish has been rising fast in the recent decade. The increase in meat and meat products demand has been accompanied by increase in production.

Apart from this, the emerging global market opportunities or Indian meat industry have significantly induced private investment in meat processing through state-of-art technology of integrated plants. These plants are successfully adding value not only by improving the quality of meat, but also by utilizing each and every part of the carcass efficiently which otherwise was being wasted at local slaughter houses.

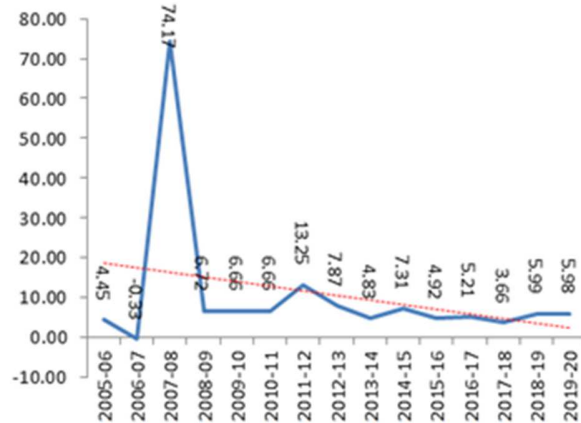
Meat production has shown a great development in India over the years. Share of buffalo meat is highest in export followed by poultry, sheep and goat, processed meat and animal casing. India is the major exporter of buffalo meat and third largest exporter of meat after Brazil and Australia. India started exporting meat since 1969 and exports both fresh and frozen meat to many countries. The total meat production in the country is 8.6 million tonnes in the year 2019-20. The meat production has increased by 6.0 per cent as compared to previous year. The top five meat producing states in India are

Figure-1: Meat Production in India (in 000 tonnes)



Source: Department of Animal Husbandry, Dairying and Fisheries 2019, Annual Report-2020-21 and Agricultural and Processed Food Products Export Development Authority (APEDA)

Figure-2: Growth Rate (%) of Meat Production From 2005-06 to 2019-20



Source: APEDA and BAHS-2019 & Annual Report 2020-21

Uttar Pradesh 15.1 per cent, Maharashtra 12.6 per cent, West Bengal 10.2 per cent, Andhra Pradesh 9.6 per cent and Telengana 9.3 per cent. They together contribute 56.8 per cent of total meat production of the country. The meat production showed a well-brought-up growth rate during the last decade.

Figure-1 shows that the total meat production was 2211.93 thousand tonnes during 2004-05, which was increased to 8600 thousand tones during year 2019-20 (Department of Animal Husbandry, Dairying and Fisheries 2020-21 and APEDA). Because, before 2006-07 commercial poultry farm was not taken into account while considering meat production. After 2007-08 commercial poultry farm was included in meat production. As a result, meat production increases at a tremendous rate. The per capita income of the population has increased in India. The meat consumption of people of the country has increased day by day. The demand for meat production of the country and the rest of the global has increased.

Meat Production and Corresponding Growth Rates

The urbanisation has been causing rise in demand for meat products. As people move to cities, they adopt to get into meat consumption. Changes in socio-economic status, increasing number of women entering in the workforce are fuelling high demand for ready to eat meat and serve type of meat products.

Figure-2 shows annual growth rate of meat production in the country from 2005-06 to 2019-20. Because 2006-2007 commercial poultry farm was not taken into account while considering meat production. After 2007-08 commercial poultry farm was included in meat product. As a result there was a tremendous growth rate of meat production. The annual growth rate of meat production in the year 2019-20 is 5.98 percent.

Meat production species-wise

Table-1: Meat Production during 2008-09 to 2018-19 species-wise (In 000 tonnes)

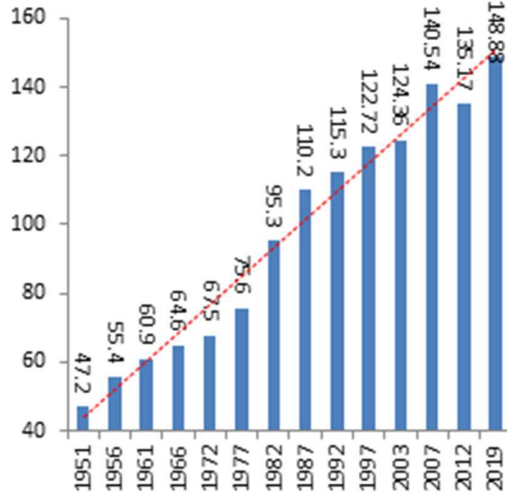
Years	Cattle	Buffalo	Sheep	Goat	Pig	Poultry
2008-09	249.9	623.0	311.5	785.8	425.1	1884.4
2009-10	222.9	670.0	340.5	813.7	432.6	2087.4
2010-11	211.5	805.1	369.1	846.0	444.2	2193.1
2011-12	285.9	974.8	396.4	908.4	458.8	2483.1
2012-13	327.0	1103.9	441.1	941.2	453.1	2681.6
2013-14	333.2	1164.3	431.9	970.4	486.0	1916.6
2014-15	NA	NA	NA	NA	NA	NA
2015-16	329.3	1611.0	485.5	942.9	387.6	3263.8
2016-17	337.9	1451.0	556.4	1041.1	468.8	3463.7
2017-18	350.2	1430.4	602.8	1042.9	396.0	3766.9
2018-19	326.5	1545.8	678.0	1097.9	404.5	4061.8

Source: Basic Animal Husbandry Statistics-2014, 2015, 2017, 2019



Table-1 shows that species-wise meat production in the year 2018-19. Poultry contributed 4061.79 thousand tonnes, followed by buffalo 1545.83 thousand

Figure 3: Population of goat from 1951-2019 in India in million numbers



Source: Livestock Census

tones, goat 1097.91 thousand tones, and sheep 677.99 thousand tones, 404.46 thousand tones and cattle 326.48 million tones.

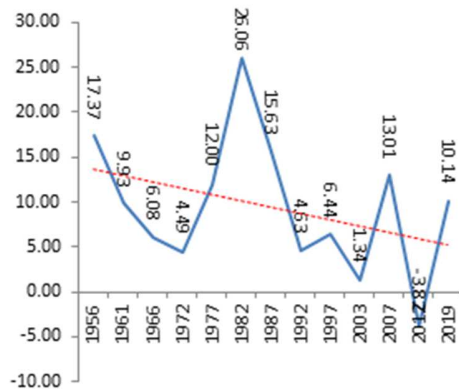
Livestock Census wise Goat population in India

In 1951, goat population in India was 47.2 million constituting 16.12 per cent of total livestock population, later increased to 115.28 million in 1992 and constituted 24.52 per cent to the livestock population. In 20th livestock census, goat population in the country was 148.88 Million that constituting 27.8 per cent of the total livestock population. In India goat population has increased by 10.14 per cent over the previous Census (2012).

Growth rate of goat population in India

India has second highest goat population in the world. India's has seventh position in goat meat exporting country in the world. The share of goat meat exporting contribute is 1.34 percent in the world (APEDA-2019). The country over the last one decade the goat meat sector has transformed significantly from being a backyard activity to being one of the major agriculture based industries.

Figure 4: Growth rate of goat population in India



Source: Livestock Census (Various Rounds)

This sector provides both the food (meat) and employment opportunities to a considerable proportion of the population. Goat farming has the potential to provide additional income to the farming community and unemployed masses in rural areas through creation of self-employment opportunities. Goat production is a popular activity among rural women at domestic level which helps in poverty alleviation. Goat production has been identified as a means of ensuring sustainable family income for both rural and urban (slum) dwellers as it needs low capital investment yet assures quick returns.

Goat Meat Production in India

Figure-5 shows that the total goat meat production was 769.6 thousand tones during 2007-08, which was increased to 1097.91 thousand tones during year 2018-19. The production of goat meat increased up to 2013-14 and then in two years it has slightly decreased from 2014-15 to 2015-16. The production of goat meat has tremendously increased in the year 2016-17.

Goat meat production in India: Annual growth rate

The demand for increasingly urbanized population with higher incomes and changing food habits, India's goat meat production has been rising at an annual average of about 4 percent in recent years.

The above figure shows that annual growth rate of goat meat production during the period 2007-08 to 2018-19. During 2016-17 the growth rate of goat meat production was reached at highest level. In Comparison to the 2017-18, growth rate, the current growth rate of 2018-19 has shown a significant improvement in the goat meat production with the growth registered as 5.28.

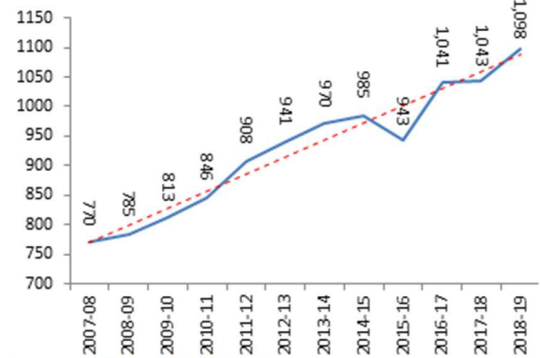
Comparison between growth rate of total meat production and goat meat production in India

Figure-7 shows that the highest growth rate of total meat production in the year 2011-12 and the lowest growth rate total meat in the year 2017-18. On the other hand, highest growth rate of goat meat production in the year 2016-17 and the lowest growth rate of goat meat in the year 2015-16.

V. CONCLUSION

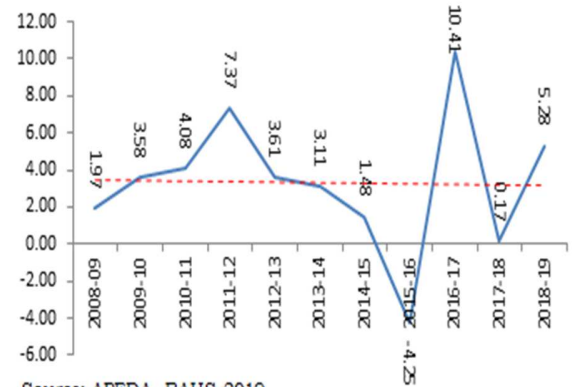
The study found that the increase in goat meat production in Odisha is primarily because of the commercialisation of the sector, breed development and better management practices.

Figure-5: Goat Meat Production in India (In 000 tonnes)



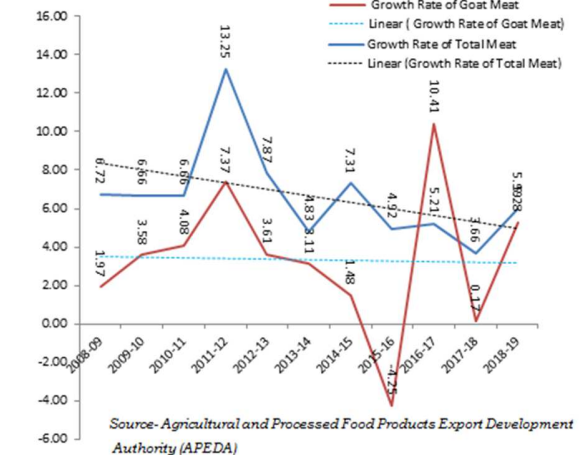
Source: APEDA, BAHS-2019

Figure-6: Annual growth rate of goat meat in India (in %)



Source: APEDA, BAHS-2019

Figure-7: Growth rate of total meat production and goat meat production



Source: Agricultural and Processed Food Products Export Development Authority (APEDA)



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