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CHANGING DIMENSIONS OF LIVESTOCK SECTOR IN TAMIL NAIDU - AN ECONOMIC ANALYSIS

**Prabu M., Selvakumar K.N., Serma Saravana Pandian A.,
G. Senthilkumar and B. Jaya Varathan**

*Department of Animal Husbandry Economics
Madras Veterinary College, Tanuvas, Chennai-7*

**Author for Correspondence*

ABSTRACT

A study was undertaken to assess the contribution of different outputs such as milk, egg, meat, draught power, manure and skin and in the livestock sector including poultry. To meet out the growing demand for livestock products, various technological interventions were introduced in the livestock sector of the Country and the State which resulted in significant improvements in production, productivity and per capita availability of livestock products. Secondary data relevant for the study were collected from the Directorate of Animal Husbandry and Veterinary Services and the Directorate of Economics and Statistics of Government of Tamil Nadu. The value shares of livestock sector was estimated based on the secondary data for 1980-81 to 2003-04, with two sub periods, Period I - 1980-81 to 1991-92 and Period II - 1992-93 to 2003-04. The average value shares of different livestock commodities indicated that the share of milk group which was 37.42% for the period 1980-81 to 1991-92 had increased significantly to 47.94% for the period during 1992-93 to 2003-04 with the average share of 42.68% for the entire period. The share of egg group was 3.84%, 5.97% and 4.90% for the periods 1980-81 to 1991-92, 1992-93 to 2003-04 and 1980-81 to 2003-04 respectively. The share of meat, draught power, hide and skin have shown stable trend and the value share of total manure had decreased.

Key Words: *Livestock Sector, Outputs Share, Milk, Meat, Capital, Hide and Skin, Manure*

INTRODUCTION

India is predominantly an agrarian economy with more than 75% age population living in villages depending on agriculture, animal husbandry and allied activities for their livelihood. Livestock and fisheries sector contributed over 4.07% to the total GDP in the year 2008-09. In 2010-11, this sector contributed 121.84 million tonnes of milk, 63.02 billion eggs, 42.99 million kg wool, and 4.83 million tonnes of meat. The Eighteenth Livestock Census (2007) has placed total livestock population at 529.7 million and total of poultry birds at 648.8 million. Livestock sector employs over 11 million rural poor and women in principal status and eight million in subsidiary status, which is about 5% of total working force in the country (Economic Survey of India, 2011-12). As per the Integrated Sample Survey Report of Tamil Nadu, 2009-10, the milk production in the state stood at 5.78 million tonnes with the per capita availability of 236 g/day. The contribution of cow is 86.8% (5.01 million tonnes) and buffalo is only 13.2% (0.7 million tonnes). The state contributes 5.13% of total milk production of the country and ranked tenth in the country. The total egg production in the state stood at 10847.6 million (second rank) with the per capita availability of 162 eggs/annum. Out of the total egg production of the state, 3.44% are from desi birds and the remaining 96.56% are from improved birds and it contributes 18.13 % of total egg production of the country. The total poultry meat production in the state is 397 million kg and ranks first in the country thereby contributing 19.60 % of total poultry meat production in the country. The total meat production in the state is 461 million kg thereby contributing 11.48 % of total meat production of the country (4016 million Kg). The productivity of the cattle crossbred, cattle indigenous and buffalo are 6.39, 2.78 and 4.25 kg/day.

There has been a paradigm shift in the livestock sector in the country and the state due to the technological interventions introduced after the independence which resulted in significant improvements

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in production, productivity and per capita availability of livestock products. The milk production in Tamil Naidu was perceptibly low till 1980s with the output of 1.73 million tonnes and per capita availability of 99 grams per day, while the egg production was at 834 millions with the per capita availability of 17 eggs per annum during 1980-81. Due to the technological interventions, the milk production has increased to 5.78 million tonnes and egg production to 10847.6 million. With the economic reforms in mid way, it is important to have a look at the contribution of different sub sectors in livestock over the period to frame policies that would sustain the growth. The study would help to allocate rationally scarce public resources to different sub sectors judiciously by formulating suitable farm plans. With the above objectives, the present study was carried out to find out the share of different outputs such as milk, egg, meat, draught power, manure and skin and hide in the livestock sector different decades.

MATERIALS AND METHODS

The value shares in livestock production was estimated based on the secondary data for 1980-81 to 2003-04, with two sub periods, Period I - 1980-81 to 1991-92 and Period II - 1992-93 to 2003-04. Secondary data relevant for the study were collected from the Directorate of Animal Husbandry and Veterinary Services and the Directorate of Economics and Statistics of Government of Tamil Naidu. The data relating to agriculture viz., labourer population, livestock population, milk production, number of veterinary institutions, land utilization pattern, total cropped area, area under permanent pasture, cropping pattern, production particulars of various crops were gathered from various secondary sources like, Statistical Information, Animal Husbandry Department, Annual Statistical Abstracts of Tamil Naidu, Tamil Naidu – An Economic Appraisal, Report on Input Survey – Tamil Naidu, Reports on Integrated Sample Survey for Estimation of Production of Milk, Egg and Meat, Hand Book of Economics and Statistics, and various other publications of Government of Tamil Naidu.

Output Data

The data on milk production (cows and buffaloes) and egg production were gathered from Statistical Information 2004, Animal Husbandry Department, Tamil Naidu and various issues of Integrated Sample Survey Report for Estimation of Major Livestock Products: Milk, Eggs, and Meat. The meat data included sheep meat (mutton), goat meat (chevon), chicken, pork and beef. The estimates for meat were made by having discussions with the experts in the Department of Meat Science and Technology, Madras Veterinary College and based on the assumptions made by Elumalai and Pandey, (2004) and the assumptions are given in Table 1. The milk price was collected from Tamil Naidu Co-operative Milk Producers Federation (TCMPF) – Aavin and meat prices were collected from various issues of Agricultural Situation in India and Annual Statistical Abstracts of Tamil Naidu. Egg prices were collected from National Egg Co-ordination Committee (NECC). The draught power from livestock was estimated in terms of horse power (HP) per animal. Based on Pandey *et al.*, (1983), to estimate draught power, 0.5 HP per animal of bullocks and he-buffaloes was used.

The dung (dry matter) estimates had been made as per assumptions (Maynard *et al.*, 1981) given in Table 2. The value of draught power and manure were compiled from Agricultural Situation in India, Annual Statistical Abstracts of Tamil Naidu, Statistical Information 2004, Animal Husbandry Department, Tamil Naidu. To generate the estimates for hides and skin production, the average skin weight of cattle and buffaloes, sheep and goats were assumed to be 8, 9, 9 and 8.5% (Gracey and Collins, 1992) of the average body weight respectively. The price for the skin and hides were collected and generated from various issues of Statistical Information, Animal Husbandry Department, Tamil Naidu. The deflation factor for respective heads were calculated by using price indices of respective years and the same was used for estimation purposes of various years.

The data collected were tabulated and analysed with a view to achieve the objectives of the study. Average and %age analyses, were used to analyse the data.

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RESULTS AND DISCUSSION

Value Shares Of Livestock Sector

The average value shares of different livestock commodities are presented in Table 3. The output index for livestock sector was constructed by adding values of milk, egg, meat, draught power, manure and skin and hide. The share of milk group was estimated to be 42.68% for the entire period. The share of milk group which was 37.42% for the period 1980-81 to 1991-92 had increased significantly to 47.94% for the period between 1992-93 to 2003-04. The introduction of cross breeding technology had increased the productivity of indigenous cows and buffaloes. Along with this, the number of cross bred animals and graded buffaloes had increased and they replaced the low productive indigenous cows and buffaloes. The crossbred cow and graded buffalo population in the state had increased from 4.9 lakhs and 3.3 lakhs in 1982 to 7.80 lakhs and 4.13 lakhs in 1989, 1.31 millions and 3.88 lakhs in 1994, 1.61 millions and 4.68 lakhs in 1997 and 4.1 millions and 3.58 lakhs in 2004, respectively, whereas the number of indigenous cows and buffaloes during the same period had shown decreasing trend. While the indigenous cow population was 3.88 million in 1982, had decreased to 2.11 million and that of indigenous female buffaloes had decreased to 9.3 lakhs in 2004 from 2.16 million in 1982. Further, the change in the feeding pattern with higher level of concentrates in the feed had resulted in the spurt in milk production, which had increased from 1.73 million tonnes in 1980-81 to 4.82 million tonnes in 2003-04. This might be the possible reason for the increase in the share of milk group.

The share of egg group was 3.84%, 5.97% and 4.90% for the periods 1980-81 to 1991-92, 1992-93 to 2003-04 and 1980-81 to 2003-04 respectively. Though the egg production has increased by several folds when compared with that of milk, it's share had not increased significantly because of the relatively stable prices of egg when compared to the prices of other livestock commodities. The share of meat has shown stable trend with the overall average share of 20.57%. The value of hide and skin has remained stable during the different periods. The value share of total manure had decreased to 17.51% in 1992-93 to 2003-04 from 23.35% in 1980-81 to 1991-92 with the average of 20.43% for the entire period and the possible reason might be attributed to the overall decrease in the animal population over the entire period. The value of draught power has been declining continuously due to the decline in the draught animal population. The year wise share also revealed the same pattern. The value of milk and egg had doubled between the period 1980-81 to 2003-04 due to the increase in the production of milk and eggs in the state.

The value of milk in the total livestock production in 1980-81 was mere 25.74% which had increased to 43.77% in 1992-93 and 53.97% in 2003-04 which could be attributed to the increase in the milk production induced by the technological change. Likewise, the value of egg in 1980-81 was 2.46% and had increased to 5.70% in 1992-93 and 5.51% in 2003-04 because of the change in technology. The share value of meat and hide and skin had shown stable trend, while the share value of manure during this period had shown decreasing trend due to the decrease in the animal population along with the increase in milk and egg production. The share of draught power had significantly reduced from 19.93% in 1980-81 to 10.99% in 1992-93 and to 4.08% in 2003-04 because of the increased mechanization and drastic reduction in the number of draught animal population. The draught animal population in the state had decreased from 4.98 million in 1977 to 1.09 million in 2004.

CONCLUSION

The average value shares of different livestock commodities indicated that the share of milk group which was 37.42% for the period 1980-81 to 1991-92 had increased significantly to 47.94% for the period during 1992-93 to 2003-04 with the average share of 42.68% for the entire period. The share of egg group was 3.84%, 5.97% and 4.90% for the periods 1980-81 to 1991-92, 1992-93 to 2003-04 and 1980-81 to 2003-04 respectively. The share of meat has shown stable trend with the overall average share of 20.57%. The value of draught power, hide and skin has remained stable during the different periods. The value share of total manure had decreased to 17.51% in 1992-93-2003-04 from 23.35% in 1980-81 to 1991-92

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with the average of 20.43% for the entire period. The individual year wise share also revealed the same pattern. The value of milk and egg had doubled between the period 1980 – 81 to 2003 – 04 due to the increase in the production of milk and eggs in the state. The share value of meat and hide and skin had shown stable trend, while the share value of manure during this period had shown decreasing trend. The share of draught power had significantly reduced from 19.93% in 1980 – 81 to 10.99% in 1992 - 93 and to 4.08% in 2003 - 04.

Table 1: Assumptions for estimation of meat output in Tamil Naidu

Particulars	Slaughtering% to Live Animals	Average Body Weight	Dressing %
Sheep	40	20	45
Goat	45	20	40
Poultry	70	1.5	65
Pig	70	80	70
Cattle	15	250	40
Buffalo	25	300	50

Table 2: Assumptions for estimation of manure in Tamil Naidu

Particulars	Cattle	Buffalo	Sheep	Goat	Poultry
Average body weight	300	400	15	15	0.5
Feed intake	10	12	0.5	0.5	0.06
Digestibility (per cent)	50	50	80	80	80
Faeces (Dry matter) (per day in kg)	5	6	0.1	0.1	0.012

Table 3: Value Shares in Livestock Production (%)

Period	Milk Value	Egg Value	Meat	Hide and Skin	Manure	Draught Power	Total
1980-81 to 2003-04	42.68	4.90	20.57	0.64	20.43	10.78	100.00
Period - I (1980-81 to 1991-92)	37.42	3.84	20.27	0.59	23.35	14.53	100.00
Period - II (1992-93 to 2003-04)	47.94	5.97	20.87	0.68	17.51	7.03	100.00
1980-81	25.74	2.46	21.93	0.66	29.28	19.93	100.00
1992-93	43.77	5.70	19.30	0.56	19.68	10.99	100.00
2003-04	53.97	5.51	19.58	0.51	16.35	4.08	100.00

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REFERENCES

Economic Survey (2011-12). Government of India **192**.

Elumalai K and UK Pandey (2004). Technological change in Livestock Sector of Haryana. *Indian Journal of Agricultural Economics* **59**(2) 249-257.

GraceyJF and DS Collins (1992). Meat Hygiene, 9th edition. ELBS with Bailliere Tindall.

Maynard Lonard, John K Loosle, Harold F Hintz and Richard G Warner (1981). *Animal Nutrition* Seventh Edition, Tata McGraw - (Hill Publishing Company Ltd. New Delhi).

Pandey UK, RK Patel and KS Suhag (1983). The comparative economics of various sources of farm energy in Haryana's Agriculture. *Urja Indian Journal of Energy* **13**(1) 27-32.