
Livestock-population for the Sustainable Development of Kerala

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Abstract: *Livestock have been an integral component of the agricultural and rural development of Kerala economy. They supply energy for crop production in terms of draught power and organic manure and in turn, derive their own energy requirements from crop by-products and residues. It is a source of food, raw material and by products in the form of hides and skins, blood, bone, fat, etc. The rate of increase in the demand for animal products is increasing globally. The livestock sector is also a major livelihood provider and an important secondary source of income and employment for rural families requires sustained growth. The supply demand gap and projected demand for livestock products necessitates the growth of this sector in a sustainable way in the state.*

Key Words: *Livestock-population; Egg;meat;milk; Sustainable Growth; Kerala.*

Introduction

Livestock is an important source of livelihood for the poor and is an integral part of the agricultural economy of the country. This sector is contributing to the national economy in general and to agricultural economy in particular and is the provider of employment opportunities, supplier of animal protein and creator of social and financial security. In Kerala, small and marginal farmers and landless labourers own majority of the livestock resources contributing 28 percent of the agriculture GDP of the state. Thus an investigation on the livestock sector would lead to more inclusive development and empowerment of women for the sustainable development of the state and is attempted in this paper.

1. Review of Literature

Livestock plays a vital role for the households and used as a source of income in the rural area. It is predicted that by 2020, this sector will produce more than half of the agricultural output (Ahuja and Redmond, 2004). The demand is predicted to arise in developing countries due to high population growth and increasing household income (Karunakaran, 2017). The options for sustainable livestock in developing countries will provide growth in rural income and accelerate the pace of production (Mahapatra, 2012). Under the increasing population growth, shortage of agricultural land and increasing demand for livestock has created a pressure for formulating better agricultural resource management policies (Sasikumar, 2009). Sustainable growth is hard to attain under current economic and environmental policies (Kumar, *et al*, 2008) and livestock policies are carried out for long term agricultural and livestock development (Bardhan, *et al*, 2010). Socio-environmental issues related to sustainable livestock production provide assistance in developing a system which includes socio-economic and cultural dimensions (Kitalyi, *et al*, 2005) and mixed crop-livestock system goes beyond direct food production function (Birtal, *et al*, 2006). Sustainable livestock production systems are needed to feed the larger, more urban, richer and older population (Govt. of India, 2012). Quantitative information about the sustainability performance of existing livestock production systems in Kerala can aid the debate of which actions could be developed and implemented.

2. Methodology and Materials

The study used secondary data obtained from various printed and electronic sources of the Department of Economics and statistics, Thiruvananthapuram, State Planning Board, Thiruvananthapuram, Directorate of Economics and statistics, NSSO reports, Government of India and other reports.

3. Analysis and Discussion

3.1. Major Livestock-products, its Production and Marketing in Kerala

3.1.1 Milk: India is the leading milk producing country in the world. Among the major milk producing states, Uttar Pradesh (252 lakh million tonne), followed by Rajasthan (169 lakh million tonne), Gujarat (117 lakh million tonne) and Madhya Pradesh (108 lakh million tonne) are at the top. Kerala

ranks 14th position in milk production with 27 lakh million tonne. Growth of milk production in the state is far below to the national average and the contribution of Kerala to the annual milk production of the country is only 1.9 percent. The production of major live-stock products, trend and ownership is shown in tables 1, 2 and 3.

Table 1: Production of Major Livestock-products in Kerala

Sl. No.	Year	Kerala			India		
		Milk (in lakh million tonne)	Egg (in crore)	Meat (in lakh million tonne)	Milk (in lakh million tonne)	Egg (in crore)	Meat (in lakh million tonne)
1	2006-07	21.19	119.39	1.98	1026	5066	23
2	2011-12	27.16	170.48	4.26	1279	6645	55
3	2014-15	27.11	250.36	4.46	1463.1	7848.4	67

Source: Govt. of Kerala (2015), *Economic Review*, State Planning Board, Thiruvananthapuram: 57.

3.1.2 Egg and Meat: Kerala ranks 9th with 251 crore in egg production. In meat production Kerala's position is 7th with 4.5 lakh million tonne. Egg production in the state increased from 119.39 crore in 2006-07 to 250.36 crore during 2014-15. Meat production also increased from 1.98 lakh million tonnes to 4.46 lakh million tonnes between the year 2006-07 and 2014-15 (Table 1). Growth of egg production is far below the national level and for meat, it is almost same.

Table 2: Trends in Live-stock Population in Kerala During the Last Decade

Sl. No.	Live-stock	Percentage Change
1	Cattle	“18
2	Buffalo	“10.7
3	Goats	42.5
4	Pigs	“22.3
5	Fowls and Ducks	30.6

Source: Govt of Kerala (2015), *Economic Review, State Planning Board, Thiruvananthapuram: 58.*

3.1.3 Milk Marketing: In Kerala around 5569 lakh litres of milk is procured, of which 3535 lakh litres are sent to the dairies and 2034 lakh litres were marketed locally. The procurement of milk by Kerala Co-operative Milk Marketing Federation (KCMMF) increased to 3637 lakh litres against the sale of 4487 lakh litres during 2014-15; showing wide gap between procurement and supply. In the state the milk price offered to farmers is highest compared to other states.

Table 3: Farm Size Category-wise Ownership of Live-stock in Kerala (in percentage)

Sl. No.	Farm Category (in hectare)	Cattle	Buffalo	Goats	Pigs	Poultry
1	Marginal (below 1.0)	87.70	86.57	92.62	57.48	93.54
2	Small (1.0-1.99)	8.41	8.35	4.99	17.63	4.55
3	Semi-medium (2.0-3.99)	3.09	3.95	1.85	10.28	1.54
4	Medium (4.0-9.99)	0.72	1.02	0.47	14.60	0.34
5	Large (10 and above)	0.08	0.11	0.07	0.00	0.03
6	All groups	100.00	100.00	100.00	100.00	100.00

Source: Govt of Kerala (2012), *Kerala Perspective Plan-2030: 238.*

3.1.4 Animal Health Care: Realising the importance of livestock in the state economy, various animal health care programmes were implemented through Animal Husbandry Department, 14 district veterinary centres, 50 veterinary polyclinics, 213 veterinary hospitals and 869 veterinary dispensaries.

3.1.5 Price of Inputs and Products: Average price of important inputs and products recorded increase during the period. In the last few years, except broiler chicken, there was an increase in the price of all categories of meat. The price of chicken increased by 17 percent, mutton by 9 percent, beef by 15 percent and pork by 9 percent; the price of fowl-white egg increased by 0.3 percent, brown egg by 5 percent and duck egg by 0.8 percent (Govt of Kerala, 2015). In the case of input, the price of straw and grass increased by 2 percent, groundnut cake increased by 9 percent, coconut cake by 26 percent and gingery oil cake by 7 percent.

As with the population, live-stock products also experienced a slump in its growth during the last decade demonstrated in table 4. Major livestock products, viz, milk and milk products and meat and meat products exhibited negative growth rates. Only minor products like wool, hair and other miscellaneous products showed positive growth.

Table 4: Trends in the Growth in Value of Output of Live-stock Population and Products in Kerala During the Last Decade

Sl. No.	Live-stock Products and Population	Percentage Change
1	Milk and Milk Products	1.56
2	Meat and Meat Products	-2.14
3	Egg	3.42
4	Wool and Hair	2.87
5	Others	-0.34
6	Total Livestock	1.64

Source: Govt of Kerala (2012), *Kerala Perspective Plan-2030*: 241.

3.2. Demand for Major Livestock-products in Kerala

The percapita consumption and demand for major livestock-products in Kerala is presented in table 5. The total demand consists of both household demand (direct demand) as well as indirect demand. Indirect demand arises mainly from consumption other than from the households; from industrial uses, use on account of seed, feed, wastage, etc. It is found that the demand for milk in Kerala was relatively high at the level of 2794.5 thousand tonnes and that for egg and meat were 2188 million numbers and 456.6 thousand tonnes respectively. It is found that production fell short of demand in all livestock-products in Kerala.

Table 5: Demand and Supply of Major Livestock-products in Kerala

Notes : *Per capita demand of egg expressed in numbers and total demand (household, indirect and total) in million numbers.

Source: Govt of Kerala (2012), *Kerala Perspective Plan-2030*: 243.

3.3. Projected Demand and Supply of Major Livestock-products in Kerala

The projected production and demand for livestock-products during 2020 and 2030 are provided in table 6. The projections suggest that if the current growth trend in the number of in-milk animals and milk yield continues to be the same in the future, total milk production would decline to 1913.7 thousand tonnes by the year 2030 from the present level of 2489 thousand tonnes. In the case of egg, projected supply also indicates an emerging situation of excess demand. The projections revealed a far

lower supply of 688.2 million eggs by the year 2030 (table 6). At present, Kerala meets 73 percent of its meat demand from its own production and the contribution is 333.2 thousand tonnes (table 5). Unlike with milk and eggs, the statistics on meat shows that its production has increased substantially during the last few years. However, projected demand shows gap in this sector also (table 6).

Table 6: Projected Demand and Supply of Major Livestock-products in Kerala.

Demand and Supply	Year	Livestock-products		
		Milk (in '000 tonnes)	Egg (in million numbers)	Meat (in '000 tonnes)
Projected Supply	2020	2159.1	1012.7	311.0
	2030	1913.7	688.2	302.0
Projected demand	2020	3293.0	3008.0	652.2
	2030	3519.5	3381.4	742.5
Projected Supply Demand Gap (in percent)	2020	-11.34	-19.95	-3.41
	2030	-16.06	-26.93	-4.41

Source: Computed from Govt. of Kerala (2012), *Kerala Perspective Plan-2030*: 243-248.

3.4. Sustainability of Livestock-population

The sustainable livestock strategy aims at reducing the environmental footprint of farms, improving milk production, farm profitability, and the well-being of people and animals involved (Govt of Kerala, 2015). The new strategy implemented by Government of Kerala for sustainable livestock-population has five pillars.

3.4.1 Enhance Competitiveness: The key constraints for improving productivity and profitability of milk production are (i) feed availability, (ii) shortage of improved stock, (iii) insufficient knowledge of raising management skills and (iv) access to affordable credit. To address these constraints and facilitate entrepreneurial initiatives, business linkages and know-how ensured competitiveness. For this the following action plans were

suggested: (1) adopt an enterprise-driven approach for the development of livestock sector, (2) paradigm shift in sourcing of animals: local is better, (3) increase fodder production, and (4) promote infrastructure, marketing and finance.

3.4.2 Attract the Best Talent: Dairy farming currently has a low social and economic status. As a result, this activity does not attract talent. So as to increase returns higher than the costs and attract people lot of steps were suggested to make the sector remunerative.

3.4.3 Social Welfare: Programmes suggested in this head includes (i) improvement and maintenances of safety and quality and minimisation of losses, (ii) implementation of livestock production identification programmes, and (iii) encouragement of accreditation and standards.

3.4.4 Animal Welfare: Action plan in this head includes: (i) strengthening of veterinary services and up-keeping of animals, (ii) legal framework, and (iii) mechanised sanitation of animals.

3.4.5 Environment: This pillar highlights the need to preserve the natural heritage of Kerala through proactive environmental stewardship and wise use of natural resources. The major environment related issues are nutrient contamination of soil, groundwater pollution, surface water eutrophication, ammonia emissions and loss of biodiversity. Better management of nutrients, waste, and water may be one of the practical policy options in this direction. This can be achieved through training, research and development, mechanisation and integrated farming systems.

Conclusion

Kerala is home to a range of livestock species. The livestock in the state are raised both in backyards and commercial farms. Cattle, buffaloes, goats, pigs, ducks and fowl, rabbits, etc are the main livestock categories raised for milk, egg and meat. The sustainable livestock strategy aims at reducing the environmental footprint of farms, by improving milk, meat and eggs production, farm profitability, and the well-being of people and animals involved. Integrated farming is the recommended solution for Kerala. Sustainable practises and technological skills will be adopted or adapted along with branding and marketing skills to promote the products of Kerala.

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