

## Livestock sector: Growth, production and contribution in the economy of Himachal Pradesh

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### Abstract

Livestock in the hill region forms an integral part of the age-old crop livestock mixed farming system and assume additional significance as the livelihood option are limited in these areas. Livestock Sector plays a multi-faceted role in the socio-economic development of rural household. Livestock act as a storehouse of capital and an insurance against crop production risks. Beside land owning household, livestock are also reared by a large number of other household, most of which belongs to poorer sections of the society. Livestock is an important source of animal protein for farm families through the consumption of milk, dairy product, eggs and meat. The paper attempts to analyse the growth of livestock population, livestock product- milk, eggs, meat and wool and its contribution in State Domestic Product. The study reveals that there is decrease in livestock population with variation among categories of livestock. There is perceptible growth in the production of various livestock product but the share of total livestock output in total gross state domestic product fall. This decline is due to the fall in share of primary sector in total SDP.

**Keywords:** Livestock Growth, Mixed Farming, Share in SDP

### 1. Introduction

The Economy of Himachal Pradesh continues to be predominantly an agricultural economy. As 92 per cent of state population lives in rural areas and is also primarily engaged in agricultural activities. Nature has bestowed upon Himachal Pradesh ideal agro-climatic condition for rearing the best of the livestock. In addition to being source of milk, meat and other products, livestock provides draught power in hills to till the land and performs other agricultural operation such as threshing and transportation. The latter become all the more important as the scope of mechanisation is constrained by the physiographic condition as well as poor economic resource endowment of the hill peasantry. The possession of livestock is the largest productive asset in rural areas. The already small land-holding in the region are fast becoming even smaller because of subdivision in response to the increasing population. In such a situation animal husbandry, which largely depend on common property resources, helps to supplement farm income. The state of Himachal Pradesh is regarded as the model of hill development in not only India but the entire Hindu Kush-Himalayan region. Generally, it is credited with the cultivation of apple and off-season vegetable. But the complementarities of these activities along with livestock rearing are ignored. With this background in mind, the present article has examined (a) Growth and composition of livestock population in the state, (b) estimate livestock product- milk, egg, meat and wool and (c) the contribution of livestock in the SDP of Himachal Pradesh.

### 2. Data and Methodology

The study was based on the secondary data collected from such sources as different issues of Livestock Census, Integrated Sample Surveys for Estimation of animal Product, Annual Season and Crop Reports and various issues of Statistical Outlines of Himachal Pradesh. Simple tabular analysis and

growth rates were used as the tool for studying the objectives of this study. Growth rate ( $r$ ) was worked out as:

$$r = \left\{ \left[ \frac{P_t}{P_0} \right]^{\frac{1}{t}} - 1 \right\} \times 100$$

Where,

$P_t$  is the end point (year) data,  $P_0$  is the starting point (year) data and  $t$  is the number of years.

### 3. Result and Discussion

The livestock population consisting mainly of cattle, buffaloes, sheep and goats, decreased from 51 lacks in 1992 to about 50 lacks in 2002, recording a negative growth rate of 0.13 per cent per annum. Livestock population further declined in the subsequent decade recording a negative growth of 0.40 per cent per annum. Cattle constitute the major form of total livestock population in the state. Cattle population in the state increased from 21.65 lacks to 21.96 lacks during the period 1992-2002, recording a rate of growth of 0.14% per annum. The cattle population declined to 21.49 lacks in the subsequent decade, recording a rate of fall of 0.21% per annum during the period 2002-2012. In the year 1992, 42.31% of total livestock population was cattle; in 2012 the percentage share of this group rose to 44.36%. Buffalo population stood at 7.03 lacks in the year 1992, increased to 7.73 lacks in the year 2002 but marginally declined to 7.16 lacks in the year 2012, recording a growth rate of 0.94% per annum during 1992-2002 and negative growth rate of 0.76% per annum during 2002-2012. In the year 1992, 14.33% of total livestock population was buffalo which increased to 15.32% in the year 2002 and in the year 2012 the percentage share of this group marginally declined to 14.78%.

**Table 1:** Growth and Composition of Livestock in Himachal Pradesh

Particulars	Population			Annual Growth Rate in Percentage	
	1992	2002	2012	1992-02	2002-12
Cattle	2165034 (42.31)	2196538 (43.52)	2149259 (44.36)	0.14	-0.21
Buffalo	703549 (14.33)	773229 (15.32)	716016 (14.78)	0.94	-0.76
Sheep	1078940 (21.08)	906027 (17.95)	804871 (16.61)	-1.73	-1.17
Goat	1118094 (21.85)	1115587 (22.10)	1119491 (23.10)	-0.02	0.03
Equines	45620 (0.89)	52873 (1.04)	50955 (1.05)	1.48	-0.36
Total Livestock	5116933 (100.00)	5046044 (100.00)	4844431 (100.00)	-0.13	-0.40
Poultry	722596	764136	1104476	0.56	3.75

**Source:** Livestock census Reports of Himachal Pradesh of various years, published by Directorate of Animal Husbandry Govt. of H.P.

**Note:** figure in parentheses display the percentage to total

Sheep population declined throughout the study period (1992-2012), recording a rate of fall 1.73% in the 1992-2002 and 1.17% in period 2002-2012. Goat population stood at 11.18% lacks in the year 1992, marginally declined to 11.15 lacks in the 2002 and increased to 11.19 lacks in the year 2012, recording a negative rate of 0.02% per annum during period 1992-2002 and a positive growth rate of 0.03% per annum in the period 2002-2012. The percentage share of goat population in total livestock population increased from 21.85% in the year 1992 to 23.10% in the year 2012.

Equines animals like mule, ponies, donkeys, camels, horses and pigs increased from 45 thousand to 50 thousand during the

period 1992-2012. The share of ‘other’ animal in total livestock remained 1 per cent during the study period. Poultry showed spectacular growth with its stock shooting up to 11.04 lacks in 2012 from 7.22 lacks in 1992. Poultry birds population recording a growth rate of 0.56% per annum during 1992-2002 and 3.75% per annum during 2002-2012.

**Livestock Production**

Livestock products are broadly divided into five categories, namely (a) milk (b) meat (c) poultry (d) dung and (e) wool and hair. The table reveals that the total milk production in

**Table 2:** Growth and Composition of Livestock Product in Himachal Pradesh

Livestock Product		1991-92	2001-02	2011-12	Compound growth Rate
Milk (in '000' tonnes)	Cow	264.747 (44.35)	350.548 (45.95)	679.971 (60.71)	4.82
	Buffalo	311.668 (52.21)	380.294 (49.85)	389.968 (34.82)	1.12
	Goat	20.446 (3.42)	32.022 (4.19)	49.927 (4.45)	4.56
	Total	596.861 (100.00)	762.862 (100.00)	1119.866 (100.00)	3.19
Eggs (in lacks)	Desi	336.434 (58.03)	407.552 (49.55)	404.313 (38.51)	0.92
	Improved	243.185 (41.95)	414.853 (50.44)	645.355 (61.48)	5.00
	Total	579.669 (100.00)	822.405 (100.00)	1049.668 (100.00)	3.01
Meat (in tonnes)	Goat	2677 (60.75)	2311.117 (65.13)	2490.349 (62.79)	-0.36
	Sheep	1492 (33.86)	965.981 (27.22)	822.019 (20.72)	-2.93
	Pigs	237 (5.37)	271.207 (7.64)	151.244 (3.81)	-2.22
	Total	4406 (100.00)	3548.305 (100.00)	3965.775 (100.00)	-0.52
Wool (in tonnes)		1566.600	1586.111	1648.078	0.25

**Source:** Integrated Sample Survey Reports of Animal Products published by Director of Animal Husbandry Govt. of H.P.

**Note:** Figures in the Parentheses display the percentage in Total

Himachal Pradesh stood at 596.861 thousand tonnes in the 1991-92 and increased to 1119.866 thousand tonnes in the year 2011-12, recording a rate of growth of 3.19% per annum. The

table shows that buffalo milk was the major component of overall milk production followed by cow and goat till the year 2001-02, however after 2002 it has been cow milk which is the

highest component of overall milk production. The milk production of cows, buffaloes and goat stood at 264.747, 311.668 and 20.446 thousand tonnes in the years 1991-92 and increased to 679.971, 389.968 and 49.927 thousand in the year 2012, recording a rate of growth of 4.82%, 1.12% and 4.56% per annum respectively.

Buffalo milk constituted 52.21% of total milk production in the year 1991-92 but declined to 34.82% in the year 2011-12. On the contrary, the share of cow milk in total milk product increased from 44.35% in the year 1991 to 60.71% in the year 2012. This is on account of cattle cross-breeding in the cases of cow on a large scale and on account of launching of various dairy development programmes leading to increased production of the cow's milk in the state. The share of goat milk in total milk production rose from 3.42% in 1991 to 4.45% in the year 2012.

Table further reveals that the production of eggs in the state has increased significantly. The production of total eggs in the state stood at 579.669 lacks in the year 1991-92 and increased 1049.668 lacks in 2011-12, recording a rate of growth of 3.01% per annum. The table reveals that desi eggs constituted 58.03% of total egg production in the year 1991-92 but declined to 38.51% in the year 2011-2012. On the contrary, the share of improved egg in total egg production increased from 41.95%

in the year 1991-92 to 61.48% in the year 2011-2012. This shows that tendency towards the production of improved varieties of eggs has tended to catch up in the state over the period of time. It appears that the poultry farming business has tended to emerge as an important employment and income generating source of livelihood in Himachal Pradesh and help in economic upliftment of the breeders.

The other important component of livestock product is meat. Goat, sheep and pigs are the important source of meat. Total meat production in Himachal Pradesh stood at 4406 tonnes in the year 1991-92 and declined to 3965.775 tonnes in the year 2011-2012, recording a rate of fall of 0.52% per annum. The table reveals that goat meat is the major component of overall meat production followed by sheep and pigs. The meat production of goat, sheep and pigs stood at 2677, 1492 and 237 tonnes in the year 1991-92 and fell to 2490.349, 822.019 and 151.244 tonnes in the year 2012, recording a rate of fall of 0.36%, 2.93% and 2.22% per annum respectively.

Wool is the other important livestock product. Total wool production in Himachal Pradesh stood at 1566.60 tonnes in the year 1991-92 and increased to 1648.078 tonnes in 2011-12, recording a rate of growth of 0.25% per annum. This is mainly on account of increased population of Goat and better management in this regard over the years.

**Contribution of Livestock Product in Gross State Domestic Product at Current Prices in Himachal Pradesh**

**Table 3:** Contribution of Livestock Product in Gross State Domestic Product at Current Prices (Rs. Lacks)

Years	Total GSDP	Total Livestock	Milk	Meat	Eggs	Wool and Hair	Dung
1980-81	79172 (100.00)	9377 (11.84)	6974 (8.80)	560 (0.70)	65 (0.08)	388 (0.49)	946 (1.19)
1988-89	97609 (100.00)	25660 (12.98)	19612 (9.92)	1450 (0.72)	263 (0.13)	741 (0.36)	2374 (1.20)
2004-05	2407658 (100.00)	159702 (6.63)	141426 (5.87)	6068 (0.25)	1409 (0.06)	2598 (0.12)	6713 (0.28)
2005-06	2712736 (100.00)	167694 (6.63)	147814 (5.44)	6164 (0.23)	1307 (0.05)	2367 (0.08)	8401 (0.30)
2006-07	3027426 (100.00)	176622 (5.83)	156019 (5.15)	6667 (0.22)	1399 (0.05)	2378 (0.08)	8496 (0.28)
2007-08	3396254 (100.00)	185334 (5.45)	163399 (4.81)	6995 (0.20)	1527 (0.04)	2974 (0.09)	8619 (0.25)
2008-09	4148310 (100.00)	210613 (5.07)	185627 (4.47)	8032 (0.19)	1997 (0.05)	3348 (0.08)	9581 (0.23)
2009-10	4696914 (100.00)	216666 (4.61)	189797 (4.04)	8422 (0.17)	2718 (0.06)	3377 (0.07)	10659 (0.22)
2010-11	5469521 (100.00)	284309 (5.19)	256570 (4.69)	8463 (0.15)	2982 (0.05)	3642 (0.06)	10960 (0.20)
2011-12	6495745 (100.00)	321676 (4.95)	287480 (4.42)	-	3396 (0.05)	3736 (0.05)	11299 (0.17)

**Source:** Data collected from Department of Economics and Statistics, Govt. of H.P.

**Note:** Figures in the Parentheses display the percentage in Total

The contribution of livestock product in gross state domestic product at current prices is shown. The percentage share of total livestock output in total gross state domestic product stood at 11.84% in the year 1980-81 but declined to 4.95% in the year 2011-12. This is on account of growing share of secondary and tertiary sector and due to falling contribution of primary sector in total state domestic product. The table reveals further that percentage share of milk, meat, eggs, wool and hair and dung in total state domestic product declined from 8.80%, 0.70%, 0.08%, 0.49% and 1.19% in the year 1980-81 to 4.42%, 0.15%, 0.05%, 0.05% and 0.17% in the year 2011-12

respectively.

**Per Capita Availability of Milk and Eggs in Himachal Pradesh**

In table 4, per capita availability of milk and eggs in India and in Himachal is shown. Per capita availability of milk in India in the year 1986-87 was 166 gram per day which far below the minimum nutritional standard of 280 gram per day as recommended by the Indian Council of Medical Research (ICMR). As against, in Himachal Pradesh per Capita

**Table 4:** Per Capita Availability of Milk and Eggs in India and Himachal Pradesh

Years	Per Capita Availability of Milk (Gram / Day)		Per Capita Availability of Eggs (Per Annum No.)	
	India	Himachal Pradesh	India	Himachal Pradesh
1986-87	166	293	24	9
1991-92	178	315	26	11
1996-97	202	369	29	13
2001-02	225	343	38	13
2006-07	245	393	42	12
2007-08	252	393	43	13.87
2008-09	258	398.5	44	16
2009-2010	263	377	45	16.5
Annual Rate of Growth (in %)	1.93	1.05	2.65	2.55

**Source:** Integrated Sample Survey Reports of Animal Products published by Director of Animal Husbandry Govt. of H.P.

Availability of milk was 293 gram per day in the same year. It shows that in Himachal Pradesh per capita availability of milk is more than that of desired minimum nutritional requirement. In the year 2009-10, per capita availability of milk in India increased to 263 gram per day, recording a rate of growth of 1.93%. However, it is still below the world average of 285 gram per day and the minimum nutritional requirements of 280 gram per day. In 2009- 10 the per capita availability of milk in Himachal Pradesh increased to 377 gram per day, recording rate of growth of 1.05% per annum. The table shows that per capita availability of milk in Himachal Pradesh is more as compared to India but growth in per capita availability of milk in the state is less than at the all India level.

The Table reveals further that per capita availability of eggs at the all India level was 24 per annum in the year 1986-87, as against it, in Himachal Pradesh the corresponding figure was only 9 per annum. In the year 2009-10 the per capita availability of eggs per annum in India and Himachal Pradesh increased to 45 and 16.5, recording a rate of growth of 2.65% and 2.55% per annum respectively. Thus the per capita availability of eggs in Himachal Pradesh has continued to be less than at the all India level. The growth rate of per capita availability of eggs is also very small in the state.

#### 4. Conclusions

The findings of the study revealed that livestock population has declined during the last two decades. Cattle constitute the major form of total livestock. The population of sheep has declined whereas goat population has increased during the study period. The share of other animal in total livestock remained 1 per cent. The production of milk has increased, recording a rate of growth of 3.19% per annum during the study period. The share of cow milk in total milk production has increased. This is on account of cattle cross-breeding in the cases of cows on a large scale and on account of launching of various dairy development programmes leading to increased production of the cows in the state. Tendency towards the production of improved varieties of eggs has tended to increased over the period of time. It appears that the poultry farming business has tended to emerge as an important employment and income generating source of livelihood in Himachal Pradesh. The contribution of livestock product in gross state domestic product declined. This is on account of growing share of secondary and tertiary sector and due to falling contribution of primary sector in total state domestic product. As per capita availability of milk in Himachal Pradesh is more as compared to India but growth in per capita

availability of milk in the state is less than at the all India level. In Himachal Pradesh per Capita availability of milk was 293 gram per day. It shows that in Himachal Pradesh per capita availability of milk is more than that of desired minimum nutritional requirement of 280 gram per day as recommended by the Indian Council of Medical Research (ICMR). The per capita availability of eggs in Himachal Pradesh has continued to be less than at the all India level. The growth rate of per capita availability of eggs is also very small in the state.

#### 5. Acknowledgement

The author Kumari Anupam would like to thanks ICSSR, Govt of India, for providing financial support to carry out this work.

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