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Livestock Economy of Himachal Pradesh: Need to Strengthen Animal Health and Veterinary Services

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Abstract

Considering the significant contribution of livestock sector to the economy of Himachal Pradesh, the present paper has examined the provisions of animal health and veterinary services, especially with respect to manpower, in the state using the secondary data. The findings have revealed that there has been a perceptible growth in production of various livestock products. The breed improvement programme has yielded good results as one-third of the cattle and one-fifth of the sheep are now crossbred/exotic. There has been infrastructure build-up in terms of veterinary institutions, but the manpower is becoming more acute in the animal husbandry department. These trends will have implications for the delivery of quality animal health and veterinary services in the long-run. The study has suggested that measures should be undertaken to strengthen animal health care and veterinary services for developing a strong livestock economy in the state.

Key words: Livestock economy, veterinary services, animal healthcare, Himachal Pradesh

JEL Classification: Q01, I11

Introduction

In developing economies like India, agriculture influences the overall economic growth. It continues to be the main source of livelihood for majority of people in rural areas. But, to bring improvements in the performance of agriculture is a difficult task because of its nature-dependency and existence of various technological and institutional constraints. These constraints appear more formidable in hilly and mountainous regions such as Himachal Pradesh due to difficult terrains and inaccessibility. As such, the delivery of input services for various agricultural activities including crops, animal husbandry and horticulture requires strenuous efforts in these areas as compared to in the plains. Although horticultural

activities are a natural choice in these areas, livestock-rearing is an integral part of these farming systems. The livestock-rearing is supported by a strong veterinary infrastructure built over the years in the state. However, these activities do not get priority they deserve *vis-a-vis* other agricultural activities, especially horticultural ones. Contrarily, at the national level, improving animal health and veterinary services is the foremost priority in the livestock development agenda (Birthal and Negi, 2012). With this background, the present paper has examined the provisions of veterinary and animal health services, especially with respect to manpower, in the state of Himachal Pradesh.

Data

The study has used secondary data from various state government publications such as Integrated Sample Survey for Estimation of Animal Products –

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Table 1. Gross value added by livestock sector in agriculture in HP: 2004-05 to 2010-11
(at constant prices)

Year	Gross value added (in crore ₹) in	
	Livestock sector	Total agriculture sector
2004-05	1597.02 (27.63)	5780.54
2005-06	1661.73 (28.10)	5913.72
2006-07	1665.61(30.21)	5512.86
2007-08	1674.81 (26.40)	6343.70
2008-09	1692.53 (27.39)	6180.44
2009-10	1646.51(30.73)	5358.02
2010-11	1989.60 (28.90)	6885.41
Compound growth rate (% p.a.)	2.37	1.59

Note: Figures within the parentheses are percentages of total value in agriculture.

Source: Gross State Domestic Product of Himachal Pradesh (2004-05 to 2010-11), Department of Economics and Statistics, Government of Himachal Pradesh.

Milk, Eggs, Wool and Meat, 2010-11, Economic Survey (various issues), Gross State Domestic Product of Himachal Pradesh (2004-05 to 2010-11) and Livestock Census, 2007.

Contribution of Livestock to State Economy

Livestock production which is an integral part of the mixed farming system in the hilly areas that sans

alternative livelihood options, is crucial for the well-being of the hill farmers. The share of agriculture including horticulture and animal husbandry in the gross state domestic product has come down from 26.5 per cent in 1990-91 to 15.81 per cent in 2010-11. A decomposition of the gross value of output in the agricultural sector has revealed that though the contribution of livestock sector has increased from ₹ 1597 crore in 2004-05 to ₹ 1990 crore in 2010-11, its share varied from 26.40 per cent in 2007-08 to 30.73 per cent in 2009-10 (Table 1). Furthermore, the livestock sector has registered a growth rate of 2.37 per cent per annum during the period 2004-05 to 2010-11 as against the growth of 1.59 per cent per annum in the overall agriculture sector.

In terms of numbers, livestock population in the state increased marginally from 49.89 lakh heads in 1982 to 52.17 lakh heads in 2007 (Table 2). Though these figures appear to suggest a stagnant livestock population in the state, its composition has undergone noticeable changes. While the population of buffaloes and goats increased, a decline was observed in the cattle and sheep population (Kumar *et al.*, 2004). In addition, the number of poultry birds depicted an impressive increase from 4.61 lakh in 1982 to 8.09 lakh in 2007, recording a 75.41 per cent increase. A look at the production of main livestock products, namely, milk, eggs, wool and meat during the past three decades in the state revealed that the total milk production increased from 404 thousand tonnes in 1984-85 to 1102 thousand tonnes in 2010-11, registering a growth of 3.46 per cent per annum (Table 3). Similarly, the egg production increased at an annual rate of 3.56 per cent

Table 2. Livestock population in Himachal Pradesh: 1982-2007

Year	Cattle	Buffaloes	Yak & mithun	Sheep	Goat	Pack animals	Others	Total livestock	Poultry
1982	2173663 (43.57)	616415 (12.36)	-	1090322 (21.86)	1059862 (21.25)	16670 (0.33)	31608 (0.63)	4988540 (100.00)	461285
1992	2165034 (42.31)	703549 (13.75)	5696 (0.11)	1078940 (21.09)	1118094 (21.85)	14055 (0.27)	31565 (0.62)	5116933 (100.00)	721849
2007	2269178 (43.50)	761589 (14.60)	1719 (0.03)	901299 (17.28)	1240836 (23.79)	13155 (0.25)	28910 (0.55)	5216686 (100.00)	809132

Note: The values within the parentheses show percentages of total livestock.

Source: Integrated Sample Survey for Estimation of Animal Products-Milk, Eggs, Wool and Meat, 2010-11, Directorate of Animal Husbandry, Government of Himachal Pradesh, Shimla

Table 3. Production of livestock products in Himachal Pradesh: 1984-85 to 2010-11

Year	Milk (’000 tonnes)	Eggs (lakh No.)	Wool (tonnes)	Meat (tonnes)
1984-85	404	337	1270	3392
1990-91	572	531	1452	4049
2000-01	760	815	1582	3425
2010-11	1102	1020	1642	3610
CGR (% pa)	3.46* (0.2839)	3.56* (0.7009)	0.87* (0.2170)	-0.56 (0.5747)

Note. ‘*’ Denotes significance at 5 per cent probability level.

Source: Integrated Sample Survey for Estimation of Animal Products-Milk, Eggs, Wool and Meat, 2010-11, Directorate of Animal Husbandry, Government of Himachal Pradesh, Shimla.

during this period, from 337 lakh to 1020 lakh. On the other hand, the growth performance in wool production was not so robust, and for meat production, it turned out to be negative and non-significant.

The main objective of any sound livestock development programme is to achieve improvements in the animal productivity. It is sought to be achieved by improving animal breeds and by providing proper animal healthcare and veterinary services. Since milk is the main product, the trends in the average daily milk yield were examined species-wise (Table 4). The average cow milk yield in the state increased from 1.38 kg to 2.54 kg during the past two decades at an annual growth rate of 2.72 per cent. For buffaloes, the growth rate was observed to be negative and non-significant.

Table 4. Trends in the average daily milk yield in HP: 1984-85 to 2010-11

Year	(in kg)		
	Cow	Buffalo	Goat
1984-85	1.38	2.88	0.38
1990-91	1.92	3.70	0.36
2000-01	2.34	3.18	0.42
2010-11	2.54 [§]	3.55	0.49
CGR (% p.a.)	2.72* (0.3522)	-0.28 (0.4993)	0.80 (0.8637)

Note: [§]The figure pertains to 2006-07.

‘*’ Denotes significance at 5 per cent probability level.

Source: Integrated Sample Survey for Estimation of Animal Products-Milk, Eggs, Wool and Meat, 2010-11, Directorate of Animal Husbandry, Government of Himachal Pradesh, Shimla.

Animal Health and Veterinary Services and State Support

The significant achievements in the livestock sector have been possible due to successive proactive policy regimes that have created massive infrastructure, providing necessary services to the livestock sector in the state. The number of all veterinary institutions in the state has recorded more than three-fold increase from 701 in 1984-85 to 2203 in 2010-11 (Table 5). As such, the number of animal equivalent units per veterinary institution has come down from 3853 in 1984-85 to 1358 in 2010-11.

It may be mentioned that the first and the only veterinary college came up in the state in 1986. These institutions have been rendering crucial animal healthcare and veterinary services to the livestock-rearers in the state. Since breed improvement of the non-descript animals is fundamental to any livestock development programme, serious efforts have been made to usher in the breed improvement in the state. This is amply borne by the artificial inseminations done annually during the past three decades (Table 6). These efforts have improved the breed composition of the livestock in the state, especially of the cows (Table 7). For instance, 34.95 per cent of the total cattle and 22.17 per cent of the total sheep were crossbred/exotic in the state in 2007. However, across the districts wide disparities existed in the proportion of crossbred/exotic cattle: it varied from low at 10.8 per cent in Chamba and 17.3 per cent in Sirmour districts, to high at 59.4 per cent in Hamirpur and 54.9 per cent in Lahaul & Spiti districts. The scene turns out to be more appalling when these proportions are juxtaposed with the

Table 5. Veterinary institutions in Himachal Pradesh: 1984-85 to 2010-11

Year	Various types of veterinary institutions					Total	Animal unit equivalents [#] per institution
	Hospitals/ CVDs	Dispensaries	Outlying dispensaries	Mobile dispensaries	Others		
1984-85	197	395	95	14	-	701	3853
1990-91	230	514	89	14	-	847	-
1995-96	300	756	-	14	-	1070	-
2000-01	302	1460	-	14	-	1776	-
2005-06	328	1721	-	14	70	2133	-
2010-11	360	1761	-	-	82	2203	1358

Note: # Based on FAO used conversion factors.

Source: Integrated Sample Survey for Estimation of Animal Products-Milk, Eggs, Wool and Meat, 2010-11, Directorate of Animal Husbandry, Government of Himachal Pradesh, Shimla.

Table 6. Year-wise artificial inseminations done in Himachal Pradesh, 1985-86 to 2010-11

Year	Cow	Buffalo
1985-86	130076	11320
1990-91	199355	28714
2000-01	356212	48717
2010-11	574358	139886
CGR (% pa)	5.46* (0.5389)	7.47* (1.1777)

Note: '*' Denotes significance at 5 per cent probability level.

Source: Integrated Sample Survey for Estimation of Animal Products-Milk, Eggs, Wool and Meat, 2010-11, Directorate of Animal Husbandry, Government of Himachal Pradesh, Shimla.

respective shares of cattle population. The story is shoddier for the improvement of the sheep breeds. District Chamba which accounted for the largest (35.12 %) share of sheep, had only 2.47 per cent exotic animals. This calls for bridging up of these inter-district disparities to make the breed improvement programme more effective in the state.

Notwithstanding the above-mentioned progress, the district-wise distribution of veterinary institutions has revealed a different picture (Table 8). For instance, the districts of Chamba, Kullu and Sirmaur which possess huge potential for livestock-rearing, have less veterinary facilities as compared to other districts. Resultantly, the animal equivalent units that each veterinary institution has to cater stood at 1837 for Sirmaur, 1757 for Chamba, 1688 for Kullu as against

Table 7. Extent of breed improvement in cattle and sheep in Himachal Pradesh: 2007

District	Cattle		Sheep	
	Share in total cattle population (%)	Crossbred/ exotic (%)	Share in total sheep population (%)	Crossbred/ exotic (%)
Bilaspur	2.34	37.68	0.15	16.83
Chamba	13.98	10.80	35.12	2.47
Hamirpur	1.47	59.42	1.50	11.71
Kangra	16.79	45.40	7.52	25.75
Kinnaur	0.97	50.26	7.80	13.98
Kullu	8.86	44.90	12.75	44.05
Lahaul & Spiti	0.55	54.89	4.11	33.95
Mandi	21.41	41.11	15.63	37.78
Shimla	13.42	39.06	10.47	30.76
Sirmaur	11.56	17.29	4.46	42.51
Solan	6.35	34.58	0.27	8.12
Una	2.29	45.80	0.21	6.09
Himachal Pradesh	100.00	34.95	100.00	22.17

Source: Integrated Sample Survey for Estimation of Animal Products-Milk, Eggs, Wool and Meat, 2010-11, Directorate of Animal Husbandry, Government of Himachal Pradesh, Shimla.

328 for Lahaul & Spiti and 507 for Kinnaur. Thus, there is a need to strengthen the veterinary and animal husbandry services in all the districts of state.

When this performance of the livestock sector was viewed in the light of recent state support in terms of financial allocations, a disturbing trend appeared

Table 8. Distribution of veterinary institutions across districts in Himachal Pradesh: 2010-11

District	Livestock population (Livestock Census, 2007) ('000 No.)	Veterinary institutions (No.)	Animal equivalent units ^s per veterinary institution (No.)
Bilaspur	231	124	1390
Chamba	920	209	1757
Hamirpur	193	143	1114
Kangra	809	414	1316
Kinnaur	126	64	507
Kullu	389	110	1688
Lahaul & Spiti	62	60	328
Mandi	941	318	1663
Shimla	511	312	927
Sirmaur	525	161	1837
Solan	314	159	1481
Una	195	129	1449
Himachal Pradesh	5217	2203	1370

Note:^sIn computing animal equivalent units, poultry, rabbits, ducks, etc. have also been included.

Source: Integrated Sample Survey for Estimation of Animal Products-Milk, Eggs, Wool and Meat, 2010-11, Directorate of Animal Husbandry, Government of Himachal Pradesh, Shimla.

(Kumar, 2011). The plan allocation to animal husbandry and dairying has been witnessing a continuous decline in the state (Table 9). The share of animal husbandry in the total plan allocation for agriculture (including irrigation and command area development) came down from 8.86 per cent in 2003-04 to 3.89 in 2008-09 with a small recovery to 4.98 per cent in 2011-12. The plan allocation to dairy development has reduced drastically from 0.55 per cent in 2003-04 to 0.09 per cent in 2011-12. This is in sharp contrast to the fact that the total agricultural outlay as per cent of total plan outlay has gone up from 9.70 per cent to 17.19 per cent during this period. Thus, there is a need to have a relook at these trends and provide more wherewithals to this sector which is so important from the viewpoint of sustainability and equity considerations (BIRTHAL and NEGI, 2012).

Apart from adequate infrastructure in terms of veterinary institutions, another issue that is crucial for augmenting the livestock production in the state is the availability of manpower to manage these institutions. A look at Table 10 reveals the shortage of manpower in veterinary services in the state. The percentage of vacant staff positions of total sanctioned strength in the animal husbandry department in the state has gone up from 9.97 per cent in 2007-08 to 17.28 per cent in 2011-12. This has led to an increase in the animal equivalent units per veterinarian from 8501 to 9315 during the Eleventh Five-Year Plan (2007-12) in the state. This will have serious ramifications affecting the delivery of quality services to the livestock-rearers in the state in coming years.

Table 9. Per cent share of animal husbandry and dairy development in plan outlays in HP agriculture: 2003-04 to 2011-12

Particulars	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
Animal husbandry	8.86	7.24	7.40	5.19	4.90	3.89	4.31	4.58	4.98
Dairy development	0.55	0.40	0.34	0.32	0.24	0.12	0.12	0.12	0.09
Agricultural plan outlay* (in crore ₹)	129.56	161.66	193.12	261.59	358.50	414.85	407.95	428.91	567.13
Agriculture outlay (% of total plan outlay)	9.70	11.54	12.07	14.53	17.07	17.29	15.11	14.30	17.19
Total plan outlay (in crore ₹)	1335	1400	1600	1800	2100	2400	2700	3000	3300

Note: *Includes plan outlays for irrigation (both major and minor) and the command area development.

Source: Economic Survey (various issues), Department of Economics & Statistics, Government of Himachal Pradesh, Shimla.

Table 10. Staff strength in the department of animal husbandry, Himachal Pradesh: 2007-2012

Year	Staff strength			Animal equivalent units per veterinarian (existing)
	Sanctioned	Existing	Vacant	
2007-08	6382	5696	636 (9.97)	8501
2008-09	6389	5658	731 (11.44)	-
2009-10	6361	5523	838 (13.17)	-
2010-11	6374	5408	966 (15.16)	-
2011-12	6367	5267	1100 (17.28)	9315

Note: The figures within the parentheses are percentages.

Source: Directorate of Animal Husbandry, Government of Himachal Pradesh, Shimla.

Conclusions

The livestock sector in the state of Himachal Pradesh contributes around 28-30 per cent of the total value of agricultural produce. The sector has registered a higher growth in the gross value contribution as compared to the overall agriculture sector. The livestock population, though almost static, has witnessed increase in the population of buffaloes and goats over time. The breed improvement programme has yielded perceptible results, especially in the case of cows, as at the state level 35 per cent of the total cattle and 22 per cent of the total sheep were crossbred/exotic in 2007. However, the inter-district disparities still persist. To meet the infrastructural requirements of the sector, there has been an impressive increase in the number of veterinary institutions in the state. However, of late, fiscal stringency appears to have been stifling the plan allocations to the department of animal husbandry. As a result, the manpower shortage,

especially of the veterinary officers and pharmacists at the field level, is growing affecting livestock care in the state. Appropriate remedial measure should be undertaken to strengthen animal health and veterinary services in the state for developing a strong livestock economy in Himachal Pradesh.

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