

## **Disparities in Livestock Development in India<sup>1</sup>**

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1. Livestock development programmes in India are in progress since more than fifty years. Quantitative assessment of these programmes would indicate their effectiveness. The impact of development is not observed to the desired level in all States. The disparity in the development in different states in the country are discussed.
  - 1.1. One-fifth of bovines and one-tenth of ovines in the world are in India. According to 1992 Quinquennial Livestock Census, India possessed 471 million livestock which was 11.4 per cent of world's population. The livestock population increased to 485 million in 1997 although cattle population decreased marginally. The number of poultry birds in India was 307 million in 1992 and 357 million in 1997.
  - 1.2. The estimate of milk production in 1992 according to Integrated Livestock Surveys was 58 million tonnes accounting for 11 per cent of world production. Milk production increased to 70.8 million tonnes in 1997 which was 12.9 per cent of world production. Wool production increased from 38.8 million kg. in 1992 to 44.6 million kg. in 1997. Egg production was estimated to be 22929 million in 1992 and 28567 million in 1997. Utilizing conversion factor, FAO provided the estimates of egg production as 1.3 million tonnes and 1.6 million tonnes in these two years. The estimates of meat production as per FAO was 3.8 million tonnes in 1992 and 4.4 million tonnes in 1997.
2. A methodology was suggested by Raut and Khatri [11] to rank major 17 States based on the magnitude of difference between the proportion of milch animals in each State and percentage of milk production. Following

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the same procedure, states were ranked for wool, meat and egg production (Table 1). The States were formed into three groups viz. (A) High (>1), (B) Medium (between -1 and +1) and (C) Low (<-1) according to the magnitude of difference. All the four products were taken together to rank the States and to measure the order of development. This was worked out both for 1992 and 1997.

**Table 1.** Order of difference and ranks - 1992

States	Milk		Wool		Egg		Meat	
	Diff. (a)	Rank	Diff. (b)	Rank	Diff. (c)	Rank	Diff. (d)	Rank
A.P.	-1.62	13	-10.79	15	4.99	01	0.81	05
Assam	-1.89	14	-	-	-1.56	15	0.19	07
Bihar	-2.07	15	-0.38	09	-2.27	16	-1.77	15
Gujarat	1.47	06	0.31	06	0.09	08	0.56	06
Haryana	3.74	02	2.30	03	0.45	04	1.02	04
H.P.	-0.06	08	1.77	05	0.01	09	-0.14	10
J & K	0.32	07	3.59	02	-0.29	11	-0.65	12
Karnataka	-1.50	12	-0.58	10	-0.76	14	-0.74	13
Kerala	1.52	05	-	-	0.26	06	-0.01	09
M.P.	-3.78	17	0.26	07	-0.61	13	2.76	02
Maharashtra	-1.29	11	-2.24	12	0.28	05	-0.19	11
Orissa	-3.45	16	-3.62	13	-0.57	12	0.02	08
Punjab	5.35	01	2.18	04	2.05	02	1.84	03
Rajasthan	-0.25	10	18.51	01	0.13	07	-3.94	17
Tamil Nadu	1.52	04	-9.71	14	1.59	03	-1.45	14
U.P.	2.29	03	0.05	08	-0.20	10	4.03	01
West Bengal	-0.15	09	-1.37	11	-2.83	17	-2.52	16

- (a) Difference between percentage of milk production and percentage of milch animals.
- (b) Difference between percentage of wool production and percentage of the sheep population.
- (c) Difference between percentage of number of eggs and percentage of layers.
- (d) Difference between percentage of meat production and percentage of number of animals slaughtered.

### 2.1. Milk

In some States, the percentage of milk production was more than the share of milch animals and in other States, reverse was the case (Table 1 (a)). During 1992, Punjab, Haryana, Uttar Pradesh, Gujarat, Tamil Nadu and Kerala were under High group, Assam, Bihar, Orissa, Madhya Pradesh, Maharashtra, Andhra Pradesh and Karnataka belonged to Low group and remaining States were in the Medium group. The States having higher proportion of buffaloes and/or crossbred cows were better developed as per milk production indicator. There were more than 75 per cent milch buffaloes in Haryana and Punjab, 60 per cent buffaloes in each of U.P. and Gujarat and 49 per cent crossbred cows in Kerala.

### 2.2. Wool

The proportion of sheep as well as the percentage contribution of wool production by each State were worked out. States considered to be better developed where wool production percentage was more than the share of the number of sheep (Table 1 (b)). In 1992, Rajasthan possessed 24.6 per cent of sheep population in the country and contributed about 43 per cent of total wool production. Rajasthan, J & K, Haryana, Punjab and Himachal Pradesh were under High developed category. West Bengal, Maharashtra, Orissa, Tamil Nadu and Andhra Pradesh were ranked under Low category. The proportion of crossbred sheep was 41 per cent in J & K, 26 per cent in Punjab and 16 per cent in Haryana. The possession of crossbred sheep enhanced the production of wool.

### 2.3. Egg

Considering the number of layers and egg production, the indicator was worked out for each State (Table 1 (c)). Andhra Pradesh which accounted for 12.3 per cent of layers contributed 17.3 per cent of egg production in the country. However, West Bengal produced 10.2 per cent of the number of eggs in the country although it possessed 13 per cent of the total layers. Andhra Pradesh, Punjab and Tamil Nadu belonged to High group showing better performance in respect of egg production. Assam, Bihar and West Bengal were Low developed States. There were 57 per cent improved birds in Andhra Pradesh, more than 80 per cent in each of Haryana and Punjab and 57 per cent in Himachal Pradesh.

## 2.4. Meat

The estimates of meat production obtained through Integrated Surveys were very low as compared to the figures given in Production Year Book of FAO. According to FAO, meat production in India during 1992 was 3626 thousand tonnes as compared to only 1588 thousand tonnes as per sample survey estimate. FAO reported the production figures utilizing certain norms (Table 2). The meat production estimates through Integrated Surveys were based on information obtained from registered slaughter-houses only and did not cover unauthorized and unregistered slaughter-houses as reported by the Technical Committee of Direction for Improvement of Animal Husbandry and Dairying Statistics in 1997. The number of animals slaughtered in each category and amount of meat produced as per FAO norms have been utilized in the present method. It is observed that excepting for Kerala and West Bengal, the production figures as per FAO norms were much higher than those obtained from Integrated Surveys. It is likely that in Kerala and West Bengal, most of the slaughters are through registered slaughter-houses and animals from neighbouring States are brought for slaughter. The States were ranked considering the proportion of animals slaughtered and percentage contribution of meat production (Table 1(d)). Uttar Pradesh, Madhya Pradesh, Punjab and Haryana ranked in High category whereas Tamil Nadu, Bihar, West Bengal and Rajasthan were in Low developed category.

**Table 2.** FAO norms to estimate meat production

Species	Slaughter (%)	Meat (kg) per animal	
		India	World
Cattle	06.40	103	197
Buffalo	11.03	138	137
Sheep	30.00	12	15
Goat	37.98	10	12
Pig	87.70	35	77

## 2.5. Overall

Considering all the four products i.e., milk, wool, egg and meat, the States were ranked (Table 3). When all the products were combined, the indicator clearly showed that the States Rajasthan, Punjab, Haryana and Uttar Pradesh were highly developed. Following the same methodology, the States were ranked for the

year 1997. The results as shown in Table 3 were similar as observed in 1992. Andhra Pradesh and Tamil Nadu improved their ranks in 1997 but Bihar and Karnataka deteriorated.

### 3. Comparison of States Based on Composite Index and Livestock Development Indicators

Narain *et al.* [10] worked out development indices based on 14 indicators considering agricultural, industrial, social and banking developments for the period 1971-72 and 1981-82 for major 17 States. Based on the composite index, the States were ranked and classified into three development groups as High, Medium and Low. The ranking of States as per composite index were compared with those based on the combined livestock indicator. Table 4 provides a comparative picture regarding the position of States under High, Medium and Low category of development. In both the cases, Haryana and Punjab were considered as High developed States; Andhra Pradesh, Assam, Bihar and Orissa were under Low developed category whereas six States Gujarat, Himachal Pradesh, J & K, Karnataka, Kerala and Maharashtra were under Medium category. Rajasthan and Uttar Pradesh, although classified as Low developed as per composite index, these were High developed as per livestock development indicator.

**Table 3. Livestock development**

Group	1992		Rank	1997	
	States	Average Diff.		Average Diff.	States
High >1	Rajasthan	3.61	1	2.95	Rajasthan
	Punjab	2.86	2	2.81	Punjab
	Haryana	1.88	3	1.67	Haryana
	Uttar Pradesh	1.54	4	1.64	Uttar Pradesh
Medium -1 to +1	Jammu & Kashmir	0.74	5	0.94	Gujarat
	Gujarat	0.61	6	0.85	Jammu & Kashmir
	Kerala	0.59	7	0.58	Kerala
	Himachal Pradesh	0.40	8	0.31	Himachal Pradesh
	Madhya Pradesh	-0.34	9	-0.21	Madhya Pradesh
	Maharashtra	-0.86	10	-0.64	Maharashtra
	Karnataka	-0.90	11	-0.69	Andhra Pradesh
Low <-1	Assam	-1.09	12	-1.30	Assam
	Bihar	-1.62	13	-1.60	Karnataka
	Andhra Pradesh	-1.65	14	-1.62	Tamil Nadu
	West Bengal	-1.72	15	-1.71	West Bengal
	Orissa	-1.90	16	-1.71	Orissa
	Tamil Nadu	-2.01	17	-2.15	Bihar

**Table 4.** Comparison based on composite index and combined livestock indicator

Based on Combined Livestock Indicator (Milk, Wool, Egg, Meat) 1992	Based on Composite Index* 1981-82		
	High	Medium	Low
High > +1	Haryana Punjab		Rajasthan Uttar Pradesh
Medium -1 to +1		Gujarat Himachal Pradesh Jammu & Kashmir Karnataka Kerala Maharashtra	Madhya Pradesh
Low < -1		Tamil Nadu West Bengal	Andhra Pradesh Assam Bihar Orissa

\* 0.49 to 0.92

**Table 5.** Mortality rates of bovines, ovines and poultry birds

Year	Bovines (%)	Ovines (%)	Poultry Birds (%)
1996	6.8	22.6	12.3
1997	7.8	19.9	14.6
1998	7.3	20.2	08.2
1999	6.0	23.7	20.8
2000	4.9	10.6	10.8

#### 4. Mortality

Data on deaths of bovines, ovines and poultry birds due to various diseases during the years 1996 to 2000 was examined (Table 5). It was observed that during the year 2000, there were about 5 per cent deaths of bovines, 11 per cent ovines and the same percentage for poultry birds. However, it was alarming to note that due to some diseases, the death percentage was very high for each of these species. In case of bovines, there were 44 per cent deaths due to Haemorrhagic Septicaemia (H.S.) 44 per cent due to Black Quarter and as high as 82 per cent due to Anthrax. Ovine deaths due to H.S., Anthrax and

Enterotoxaemia were 44 per cent, 38 per cent and 27 per cent respectively. Ranikhet, Infectitious Bursal disease and Fowl Pox accounted for 42 per cent, 20 per cent and 11 per cent deaths respectively for poultry birds.

### 5. *Veterinary Facilities*

There are veterinary hospitals, veterinary dispensaries and veterinary aid-centres for treatment of animals and for implementation of various disease control measures. Of the 51 thousand veterinary centres in 1997-98, about 15 per cent are veterinary hospitals, 31 per cent veterinary dispensaries and 54 per cent veterinary aid-centres. Excepting in Kerala, Punjab, Haryana and Himachal Pradesh, most of the States are having veterinary aid-centres which are operating without qualified and competent veterinary doctors. Since, there are about 6 lakh villages in the country it is worked out that on an average, each veterinary hospital caters to the need of about 12 villages.

### 6. *Conclusion*

The States Haryana, Punjab, Rajasthan and Uttar Pradesh were well developed in livestock improvement programmes. Some eastern States particularly Assam, Bihar, Orissa and Andhra Pradesh are lacking in livestock development measures and as such, they are far behind the development process. These states may be encouraged to maintain more crossbred cows, graded buffaloes, improved poultry birds and crossbred sheep in addition to improving important indigenous breeds and to upgrade the non-descript ones. Most of the States should have better veterinary facilities.

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