



A Brief Analysis Of The Livestock And Human Population In The Rural And Urban Areas Of Sikkim

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ABSTRACT :

In this study, the demographic pattern of livestock and human population in the Himalayan state of Sikkim is highlighted. Sikkim is a very small state. For the purpose of creating sustainable farming practices and guaranteeing food security in the region, it is essential to have a solid understanding of the interactions that take place between these species and the habitats in which they live. The research was carried out using secondary sources of information as the basis for the investigation. The quality of socioeconomic development has been inferred to be closely related to the number of livestock that is raised. If there is a greater population of animals in the region, then the socioeconomic development will be better.

Key words: Livestock, Human, Population, Farming, Development

Introduction:

At the moment, the livestock subsector contributes between 40-45% percent to the agricultural gross domestic product. Furthermore, according to Nabarro and Wannous (2014), livestock is the primary source of income for 75 % of people living in rural regions and 25 % of people living in urban areas around the globe. The Indian agricultural system is not complete without the practice of livestock husbandry. According to Khan et al. (2009), it has become a significant kind of agricultural diversification and has also arisen as a new source of employment and job opportunities. According to Yadav (2012), the dynamic and diversified systems of livestock management offer perfect safety nets for smallholder farmers and farmers who do not have access to land.

A one-of-a-kind case study in population dynamics spanning numerous species, including bovines, ovines, porcines, and humans, is presented by the Indian state of Sikkim, which is located in the northern region of the country. Sikkim, which is located in the Himalayas, has a varied geography and climate, both of which have a considerable impact on the distribution and density of these populations. For the purpose of creating sustainable farming practices and guaranteeing food security in the region, it is essential to have a solid understanding of the interactions that take place between these species and the habitats in which they live. Within the context of Sikkim's agrarian economy, the bovine population, which is mostly comprised of cows and yaks, plays an extremely important role. The production of dairy products relies heavily on these animals, which are also a vital part of the state's traditional farming system. In a similar manner, the ovine population, which is comprised of sheep, makes a contribution to the production of wool and the provision of meat, but on a lower scale in comparison to the bovine population. Porcine populations, which are represented by a variety of pig breeds, are also considered to be significant for the consumption of meat and the livelihood of local communities, particularly indigenous groups.

There is a significant amount of effect that human population dynamics, along with the socio-economic activities that they include, have on cattle populations. Because of the interconnectedness that exists between human populations and cattle populations, integrated management solutions are absolutely necessary right now. Throughout the state of Sikkim, the purpose of this study is to investigate the population trends, interrelationships, and socio-economic repercussions that these species have experienced. In order for policymakers to formulate well-informed policies that will contribute to the region's sustainable development, it is essential for them to conduct such an analysis.

Sources of Data

Over the course of several decades, Sikkim has maintained an outstanding record of both its human and animal livestock censuses. There are four districts in the state of Sikkim, and the data contains the number of bovines, ovine, and porcine animals in each of those districts, as well as the percentage rise or reduction in those numbers over a period of time. The current effort relies solely on secondary sources of data and information for this particular endeavour. The data on the human census, which depicts their growth rate and the density of their people, has also been provided in addition to the information presented above.

Result and Discussion

Population: Sikkim is home to three distinct ethnic groups: the Nepali, the Lepcha, and the Bhutia. The entire population of Sikkim was 610577 in the 2011 Indian census. Here are the numbers for both rural and urban Sikkim based on the 2011 census:

Table 1: Rural-Urban Population

State/District	Rural Population	Urban Population	Total Population
North	39065	4644	43709
East	161096	122487	283583
South	125651	21199	146850
West	131187	5248	136435
Sikkim	456999	153578	610577

Source: Adopted from Sikkim Statistical Journal, GOS, 2015, Census of India, GOI

Table 2: Decennial Population Growth in Sikkim, 1901-2011

(Growth rate in percent per 10 years)

Sl. No.	Year	Total Population	Growth Rate (%)/10 years
1	1901	59014	-
2	1911	87920	48.98
3	1921	81721	-7.05
4	1931	109808	34.37
5	1941	121520	10.67
6	1951	137725	13.34
7	1961	162183	17.76
8	1971	209843	29.38
9	1981	316385	50.77
10	1991	406457	28.47
11	2001	540851	33.06
12	2011	610577	12.89

Source: Dimension of Census Operation 2001, Adopted from Sikkim Statistical Journal, GOS, 2015, Census of India, GOI

Table 1 displays the numbers for the rural and urban populations of Sikkim as of the 2011 census, which came to 610577. According to Table 2, which displays the decennial population increase, the years 1901–1911 had the greatest recorded rate of growth, whereas the years 1911–1921, on the other hand, had a considerable decline. It was this precipitous decline in population that the First World War brought about. However, the years 1971–1981, in contrast, witnessed a phenomenal increase in the human population. Both the state's massive development initiatives and Sikkim's admission to the Indian Union may have contributed to this surge of migration. The state was divided into four administrative districts—the North, South, East, and West—up to December 2021. The state capital area is the most populous district and ranks fourth in terms of population density, behind the southern, western, and northern regions. The four districts have drastically different population densities. Because much of the hilly terrain in the north district is more than 5,000 meters above sea level, the population density there is very low. For a detailed look at the district areas and population densities in Sikkim, see table 3 below. The North District has the largest area in the chart, but it has the lowest population density when compared to the other districts.

Table 3: District-wise area and Density of Population in Sikkim 2011

(Per sq.km.)

District	Area (sq. km.)	Total Population	Density
East	954	283583	297
West	1166	136435	117
North	4226	43709	10
South	750	146850	196
Total of Sikkim	7096	610577	86

Source: Adopted from Sikkim Statistical Journal, GOS, 2015

Table 4: Livestock Population:

Particular	Census 1977	Census 1997	% (increase/decrease)	2007	2012	% (increase/decrease)
Cattle	157546	143024	9.22 (-)	169829	140690	17.15 (-)
Buffaloes	5438	1970	63.77 (-)	1536	892	41.92 (-)
Sheep	16104	5023	68.79 (-)	4879	2684	44.98 (-)
Pigs	18595	26975	45.05 (+)	38930	30317	22.12 (-)
Goat	88986	82980	6.83 (-)	110120	110870	0.68 (+)
Poultry	220927	219552	0.62 (-)	255882	437647	71.03 (+)
Yak	3995	4731	19.67 (+)	6468	6220	3.83 (-)

Source: Department of Animal Husbandry, Livestock, Fisheries and Veterinary Services, GOS.

The state's total livestock population, along with the percentage change in population, is shown in Table 4. The quantitative data for each district in the state of Sikkim is provided in the tables 5 through 9 that follow. It contains the following tables: Distribution of Veterinary Institution and Other Infrastructures (Table 8), Total Livestock Population of Sikkim (Table 5), District-wise Livestock Population of Sikkim (Rural and Urban) (Table 6), Sikkim State (District-wise Distribution of Urban Livestock Population) (Table 7), and Comparative of Livestock and Poultry in the Livestock Census of 2007 and 2012, along with its annual growth and percentage change in Sikkim State (Table 9).

Table 5: Total Livestock Population of Sikkim:

Sl. No.	Particulars	Rural	Urban	Total
1	Total number of households	83995	31412	115407
2	Household having livestock	68071	3982	72053
3	Household having cattle	51156	365	51494
4	Total number of cattle	139777	913	140690
5	Household having buffaloes	418	1	419
6	Total number of buffaloes	873	19	892
7	Household having sheep	585	7	590
8	Total number of sheep	2658	26	2684
9	Household having goats	28414	294	28705
10	Total number of goats	109859	1011	110870
11	Household having pigs	17649	314	17953
12	Total number of pigs	29572	745	30317
13	Household having yaks	520	0	520
14	Total number of yaks	6220	0	6220
15	Household having backyard poultry	38672	1223	39889
16	Total number of backyard poultry	432038	5607	437645
17	Total number of poultry farms and hatcheries	18	1	19
18	Total number of pet dogs	19799	3796	23595
19	Total number of stray dogs	5744	1458	7202

Source: Sikkim State 19th Livestock Census-2012, GOS.

Table 6: District-wise Livestock Population of Sikkim (Rural + Urban):

Sl. No.	Livestock	District				Total
		North	East	West	South	
1	Cattle	14305	47266	41625	37494	140690
2	Buffaloes	19	39	794	40	892
3	Yak	3710	2369	141	-	6220
4	Sheep	234	212	1234	1004	2684
5	Goat	9410	34259	37640	29561	110870
6	Pig	3793	8077	9987	8460	30317
7	Ponies	324	102	99	11	536
8	Dog (Pet)	2002	11417	4675	5501	23595

9	Rabbit	353	127	28	65	573
10	Backyard Poultry	31122	118939	111809	175775	437645
11	Farm Poultry (Layer + Broiler)	1400	18722	1005	42000	63127

Source: Sikkim State 19th Livestock Census-2012, GOS.

Table 7: Sikkim State (District-wise Distribution of Urban Livestock Population):

Sl. No.	Livestock	District							Total
		North	East			West	South		
		<i>Mangan</i>	<i>Gangtok</i>			<i>Gyalshing</i>	<i>Namchi</i>		
	<i>MNP</i>	<i>GNN</i>	<i>SNP</i>	<i>RNP</i>	<i>GNP</i>	<i>NNP</i>	<i>JNP</i>		
1	Cattle	91	577	2	16	101	118	8	913
2	Buffaloes	19	0	0	0	0	0	0	19
3	Yak	0	0	0	0	0	0	0	0
4	Sheep	1	25	0	0	0	0	0	26
5	Goat	86	669	27	11	121	79	18	1011
6	Pig	62	374	0	21	125	100	63	745
7	Ponies	0	0	0	0	0	0	0	0
8	Dog (Pet)	105	2604	159	86	198	258	386	3796
9	Rabbit	0	45	2	6	0	8	0	61
10	Backyard Poultry	445	3294	134	64	962	642	66	5607
11	Farm Poultry (Layer + Broiler)	0	0	631	0	0	0	0	631

Source: Sikkim State 19th Livestock Census-2012, GOS.

Note: MNP- Mangan Nagar Panchayat, GNN- Gangtok Nagar Nigam
 SNP- Singtam Nagar Panchayat, RNP- Rangpo Nagar Panchayat
 GNP-Gyalshing Nagar Panchayat, NNP- Namchi Nagar Palika
 JNP- Jorethang Nagar Panchayat.

Table 8: Distribution of Veterinary Institution and Other Infrastructures:

Sl. No.	Institute	North	East	West	South	Total
1	Veterinary Policlinic	-	1	-	-	1
2	Veterinary Hospital	4	5	4	3	16
3	Veterinary Dispensaries	5	14	17	16	52
4	Stockman Centre	7	25	16	15	63
5	Semen Production Centre	-	-	-	-	-
6	No. of AI Centre	6	60	45	22	133
7	No. of Poultry Breeding Farms	1	3	1	2	7
8	No. of Hatcheries	-	1	-	1	2
9	No. of Rabbit Breeding Farms	1	-	-	-	1
10	No. of Pig Breeding Farms	2	1	2	2	7
11	No. of Yak Breeding Farms	1	-	-	-	1
12	No. of Rinderpest Check Posts	-	2	1	1	5
13	No. of Registered Slaughterhouse	-	1	3	1	4
14	No. of Milk Processing Plants	1	1	1	1	4
15	No. of Liquid Milk Plant	1	1	1	1	4
16	No. of Milk Chilling Plants/ Cooling Plants	6	49	83	55	193

Source: Sikkim State 19th Livestock Census-2012, GOS.

Table 9: Comparative of Livestock and Poultry in 2007 and 2012 and its annual growth and percentage change in Sikkim State:

Species of Animals	18 th LSC (2007)	19 th LSC (2012)	Percentage Change	Annual Growth
Exotic/Crossbred Cattle	72,974	126576	(+) 73.45	(+) 14.69
Indigenous Cattle	61,899	14114	(-) 77.20	(-) 15.44
Buffalo	243	892	(+) 267.08	(+) 53.40
Yak	5225	6220	(+) 19.04	(+) 3.80
Sheep	2536	2684	(+) 20.52	(+) 1.16
Goat	91995	110870	(+) 20.52	(+) 4.10
Pig	32250	30317	(-) 13.99	(-) 2.79
Backyard Poultry (Fowls and Ducks only)	116743	437637	(+) 274.87	(+) 54.97

Source: Sikkim State 19th Livestock Census-2012, GOS. Note: LSC- Livestock Census

Conclusion

The findings of this study shed light on the complex interaction that exists between the human population in Sikkim and bovine, ovine, and porcine populations. The distinct geographical and climatic circumstances have a considerable influence on the geographical distribution and population density of these species. When it comes to encouraging sustainable agricultural practices and safeguarding the well-being of both human populations and animal populations, having a solid understanding of these dynamics is absolutely necessary as higher the livestock population, greater the socio-economic development in the region. The findings highlight the need of implementing integrated management techniques that take into consideration both socio-economic and environmental elements for effective management. It is possible for policymakers to make use of this information in order to implement targeted actions that will support sustainable development, increase food security, and boost the livelihoods of inhabitants of Sikkim.

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