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Analysis of Livestock and Veterinary Development Disparity in Mizoram

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ABSTRACT

Growth of livestock and veterinary play a crucial role in rural economy due to its multifunctional output and expands the socio-economic development by generating revenue, boosting nutrition, and creating new opportunities for livelihoods. It gives safeguard to crop failures in the event of natural calamities where agriculture is the prime source of livelihood for the majority of the rural population in the state of Mizoram. The present paper analyze the district level development disparity of livestock and veterinary by Z-score techniques from four major dimensions like number of livestock and poultry population, estimated production, number of veterinary institutions and personnel with health care. These dimensions have twenty two variables which are used for an indicator of the study. Shading of the units to classify the disparity of livestock and veterinary development by the outputs of the variables followed the Jenks natural breaks classification method with the help of ArcGIS.

Introduction:

Domesticated animal rose in an agricultural setting to produce labor and commodities such as meat, egg, milk fur, leather and wool may term as 'livestock'. The term is sometimes used to refer solely to those that are bred for consumption, while other times it refers only to farmed ruminants such as cattle and goats. Animal rearing originated during the cultural transition to settled farming communities from hunter-gatherer lifestyles. Traditionally, animal husbandry was part of the subsistence farmers' way of

life, producing not only the food needed by the family but also the fuel, fertilizer, clothing, transport and draught power. Killing the animal for food was a secondary consideration, and wherever possible its products, such as wool, eggs, milk and blood were harvested while the animal was still alive *(Webster, 2013).* In the traditional system of trance-human, people and livestock moved seasonally between fixed summer and winter pastures; in montane regions the summer pasture was up in the mountains, the winter pasture in the valleys *(Roger, 2001).*

Although agriculture is the prime source of livelihood for rural population in the study area, livestock are an important component of mixed farming system and acts as an alternative source of income. In the economic life of the primitive Mizo society, domestic animals like mithun, pig, dog, chicken and goat plays a vital role. Apart from being important sources of food they are used for sacrifices and ceremonies (Mate, 2014). They are also used for exchanging the captives and other valuable properties. The development of livestock is; therefore, of vital importance for economic development of the region especially in the rural areas (Pachuau, 2009) but the middle class in the urban areas require for their nourishment and daily needs as it increasing demand tremendously.

In Mizoram, the large and small ruminants, pigs and poultry were evenly distributed across the state. Dairy cattle are mostly reared by medium-scale farmers, while poultry and pigs are important sources of livelihood for the landless, near landless, marginal and small farmers (Dibyajyoti, 2023). Livestock and Animal husbandry has been given prime importance by the state government as an alternate to Jhuming (Pachuau, 2009). Livestock raising provides an alternative source of income for farmers and serves as a risk mitigation technique against crop failures and harsh weather conditions (Thornton et al., 2015). It also plays an imperative role to increase production of animal origin food like milk, eggs and meat as well as socio-economic progress of the state, and, to contribute substantially to the State Gross Domestic Product (SGDP). Various schemes under state plan and centrally funded schemes are taken up for further promotion of livestock enlargement, induction of improve germplasm for up-gradation of local stock, provision of technology to farmers and provide requirements of animal health care (Economic Survey Mizoram, 2012-13). By considering the economy of the state, the widening gap between the demand and supply of livestock products can be bridged by introducing changes in production structure or opening up the international trade, either of which can correct the imbalances in the long-run (Kumar, et al., 2007). Therefore, the main objective of the study is to analyze the inequality of livestock and veterinary development in the state of Mizoram.

Research based and Methodology:

Secondary data were collected from Statistical Abstract of Mizoram, 2015 and analysis was conducted by using 22 indicators from 4 sectors/dimensions.

Data obtained from secondary source were transformed into variables used as development indicators. To transform data matrix into scale free matrix, indicators were standardized by subtracting the mean from each individual variables and divided by their standard deviation as the following formula –

$$Z_i = (X_{ij}-X_j)/SD_j$$

Where, Z_i is the Z-score for the i^{th} unit

X_{ij} is the x variable in the i^{th} unit and j^{th} variable

X_j is the mean of the j^{th} variable and

SD is the standard deviation of the j^{th} variable

Standardization was done using statistical software called Statistical Package for Social Science (IBM SPSS) to get the scores in each indicator. Z-score is a linear transformation of the original data in such a way that its mean becomes zero and its standard deviation become unity. It has been used to develop a composite score in order to arrive at the level of development. In standardized method, the collected data were converted into variables and standardize to form a score value of development. It may also be positive or negative, with a positive value indicating the score is above the mean and a negative score indicating it is below the mean. Positive and negative scores also reveal the number of standard deviations that the score is either above or below the mean. After obtaining Z-score for every indicator, composite score was obtained by adding up all individual Z-score or standardized data :-

$$C = \sum Z$$

Where, C_i is the composite score and $\sum Z$ is the summation of Z-scores or standardized scores.

Shading or coloring of the units to classify the disparity of livestock and veterinary development at the district level in the study area by the outputs of the variables followed the Jenks natural breaks classification method with the help of ArcGIS. Data clustering method calculated to determine the best arrangement of values into different classes, seeking to minimize each class's average deviation from the class mean, while maximizing each class's deviation from the means of the other groups is called Jenks

normal classification method, also called Jenks optimization method. In other words, the method seeks to reduce the variance within classes and maximize the variance between classes (Jenks, 1967).

Table 1 Indicators of Livestock and Veterinary Development in Mizoram

Sl No	District	Number of Livestock and Poultry Population (in %) (Quinquennial Livestock Census, 2012)									Estimated Production in Mizoram (2014-15)		
		Catlle	Buffaloes	Goat	Pigs	Horses & Ponies	Dogs	Mithun	Sheep	Poultry with Ducks	Milk (in tones)	Egg (no in lakhs)	Meat (in tones)
1	Mamit	7.08	1.49	16.62	9.85	99.53	0	0	26.25	6.93	316.85	37	757.35
2	Kolasib	16.41	2.03	10.8	8.8	0	6.17	0	13.13	8.57	2828.1	25	885.21
3	Aizawl	18.06	6.21	7.23	32.43	0.09	42.41	4.11	6.25	28.01	11697	74	5342.8
4	Champhai	21.52	51.21	3.72	14.17	0.22	9.87	56.59	34.38	14.69	1605.7	54	1136.3
5	Serchhip	6.2	12.11	2.12	4.52	0.05	4.99	2.16	0	7.68	947.97	29	767.92
6	Lunglei	11.96	0.8	25.55	11.83	0	15.78	0	1.56	18.02	2038.9	56	1983.3
7	Lawngtlai	10.45	7.72	16.95	10.89	0.05	13.69	0	10.63	8.39	560	75	846.26
8	Saiha	8.32	18.44	17.01	7.5	0.06	7.11	37.13	7.81	7.72	501.32	27	806.07

Source: Statistical Abstract of Mizoram, 2015

Table 2 Indicators of Livestock and Veterinary Development in Mizoram

Sl No	District	Number of Veterinary Institutions and Veterinary Personnels (2014-15)							Veterinary Health Care (2014-15)		
		Hospitals	Dispensary	Rural Animal Health Centres	No of Artificial Insemination	Doctors	VFA/SVFA/ Jon/JEO etc	No of cases treated (OPD)	No of castration performed	No of Artificial inseminations done	No of Vaccinations done
1	Mamit	0	3	12	0	4	15	65460	734	76	822
2	Kolasib	1	4	6	8	12	17	72924	1126	670	6460
3	Aizawl	1	6	30	16	54	62	412860	3994	2611	12883
4	Champhai	1	7	13	10	12	25	96406	1367	530	8399
5	Serchhip	0	4	7	6	8	23	109360	683	420	5613
6	Lunglei	1	6	26	13	17	48	137170	2011	445	3818
7	Lawngtlai	0	2	2	3	4	2	33500	141	130	1701

8	Saiha	1	3	7	2	6	7	56290	263	48	1813

Source: Statistical Abstract of Mizoram , 2015

Result and Discussion:

According to Quinquennial Livestock Census, 21.42 per cent of cattle population is found in the district of Champhai. Aizawl district possessed 18 per cent which are mainly concentrated in the outskirt of the city. Kolasib, where there is a strong preference for milk hold 16.14 per cent of cattle in the state. Lunglei and Lawngtlai district shares 11.96 and 10.45 per cent and south western and southern part of the state such as Saiha and Mamit districts shares a number of 3,182 and 2,063 cattle populations i.e., 8.32 and 7.08 per cent.

The largest plain area of Mizoram, Champhai valley (more than 3,900 hectares) has been using as paddy cultivation which requires animal for ploughing agricultural fields, possess a number of 7,097 buffalo population. The second largest number of buffaloes were concentrated in the district of Saiha (18.44 per cent) followed by Serchhip district (12.11 per cent). Lawngtlai and Aizawl districts shares a low percentage of 7.72 and 6.21 buffaloes population while less number of buffalo population was recorded in the districts of Kolasib, Mamit and Lunglei, ranging below 2 per cent. Lunglei district became the lowest number of buffaloes but highest number of Goats rearing followed by Saiha. Serchhip and Champhai district possesses only less than 4 per cent of Goat population in the state.

Most of horse and ponies population of the state concentrated in Mamit district sharing a high percentage of 99.53. The other districts were having less than one per cent. Dogs is a common domestic animal of Mizoram, there are 18,507 domestic dogs in Aizawl district followed by Lunglei with only 15.78 per cent. More than half of the Mithun population concentrated in Champhai district. 37.13 per cent also found in the district of Saiha. Serchhip and Aizawl districts shares less than 5 per cent of Mithun population. Champhai and Mamit are of two important districts which possessed 34.38 and 26.25 per cent of sheep populations while poultry with ducks population mainly concentrated in Aizawl district.

As per reports of Director, Animal Husbandry and Veterinary Department, Govt of Mizoram estimated total milk production during 2014–2015 was 20495.697 tonnes. As highly demanded of milk in the urban areas, the state capital of Aizawl and its district produced the highest amount of milk with 11,696.82 tonnes sharing 57.07 per cent of the total state production, followed by Kolasib district with only 13.80 per cent. Below 10 per cent of milk is produced by the rest of the districts.

The estimated total egg production during 2014-2015 was 377 lakhs, of which 261 lakhs (Desi) and 116 lakhs (improved variety). Total production of meat from Cattle, Buffaloes, Mithun, Goats, Pigs and Poultry during 2014-2015 was estimated at 12,525.21 tones, of which pork and beef counts for 7,038.04 and 3,587 tons respectively. Meat production from chicken broiler during estimated at 1668.69 tones. Out of the total meat production (including broiler meat), pork accounted for the highest quantity of 56.19 per cent followed by beef with sharing 28.64 per cent, and, broiler meat accounts for 13.32 percent. Aizawl is the largest producer of meat with 42.66 per cent (5342.75 tones) whereas 6.04 per cent (757.35 tones) produced by Mamit district recorded as the lowest production of meat in the state.

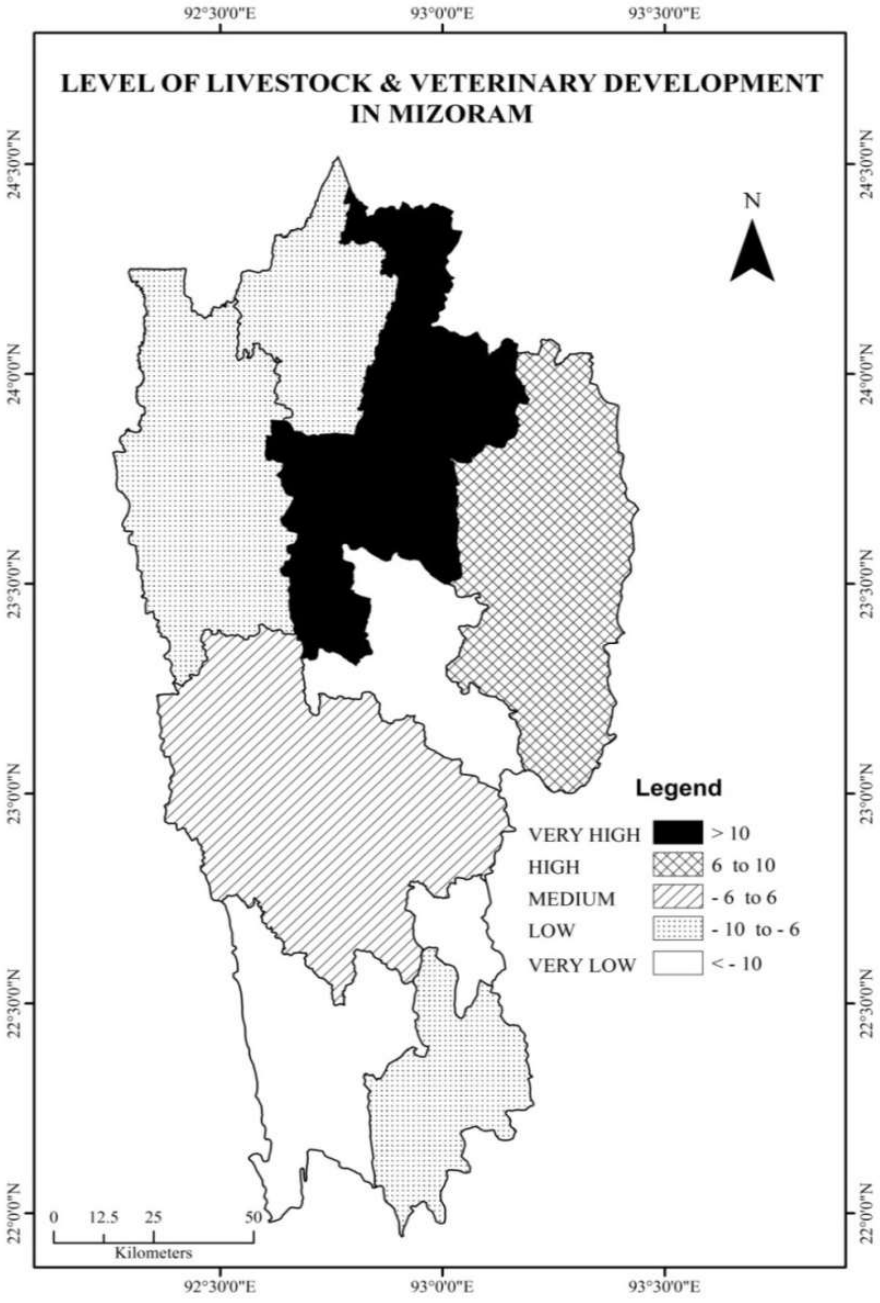
Table 3 Level of Livestock & Veterinary Development in Mizoram

Sl No	District	Score	Rank	Level	Score	District
1	Mamit	-8.81	5	Very high	Above 10	Aizawl
2	Kolasib	-4.65	4			
3	Aizawl	29.47	1	High	6 to 10	Champhai
4	Champhai	9.50	2	Medium	-6 to 6	Lunglei
5	Serchhip	-11.75	8	Low	-6 to -10	Kolasib, Mamit, Saiha
6	Lunglei	5.90	3	Very low	Below -10	Lawngtlai, Serchhip
7	Lawngtlai	-10.71	7			
8	Saiha	-8.95	6			

Prevention and combating of economically important and dreaded zoonotic diseases is the purview of A.H. & Veterinary Department for which the Department exercised activities like immunization, treatment of ailing animals etc., (Economic Survey of Mizoram, 2013). To provide animal health care, there exists a wide network of veterinary hospital and dispensaries under the state Government.

At present there are 5 veterinary hospitals, 35 veterinary dispensaries and 103 rural animal health centers at Aizawl, Lunglei, Champhai, Kolasib and Saiha districts. Besides these institutions, the state government has also been maintaining 58 Mobile Artificial Insemination Centers. There are 117 veterinary doctors a long with 199 VFA/SVFA/Jon/JEO etc., treated more than 9, 83,970 cases during 2014-15. 4,937 artificial inseminations were done and 41,509 vaccines were given to various animals in different parts of the state.

The development level of livestock and veterinary classified into five category based on it scale value. Aizawl district score the highest values of 29.47 classify under very high level of development. Champhai district is also categorized into high level of development with a score value of 9.50. Lunglei district has the third highest score value of 9.50 falls under medium level of development. Followed by Kolasib, Mamit and Saiha districts with a score value of -4.65, -8.81 and -8.95 which falls under low level of development. Lawngtlai and Serchhip districts falls under very low level of development with a score value of -10.71 and -11.75.



- **References:**

- Choudhary P, et al., (2024) A Comprehensive Exploration of Livestock Extension Services and Current Scenario, *The Agriculture Magazine*, Volume-3, Issue-12, pp 853-855.
- GOM (2013): Economic Survey of Mizoram 2012
- Jenks, George, F (1967) *The Data Model Concept in Statistical Mapping*, International Yearbook of Cartography, 7: 186–190
- Kumar, Anjani, Steven Staal, K. Elumalai and Dhiraj K. Singh (2007) *Livestock Sector in North-Eastern Region of India: An Appraisal of Performance,* Agricultural Economics Research Review Vol. 20 July-December 2007 pp 255-272
- *Pachuau, Rintluanga (2009) Mizoram - A study in Comprehensive Geography, Northern Book Centre, New Delhi.*
- Talukdar Dibyajyoti, Sarma Kalyan, Kalita Girin, Rahman Saidur, Goswami Ranjana, Chethan G.E., Das Hemen, Konwar Bedanga (2023) *Role of Animal Husbandry Practice in Upliftment of Socio-economic Status of Mizo Farmer: A Review*, Bhartiya Krishi Anusandhan Patrika, 38(1): 09-18.
- Thornton, P. K. and Herrero, M. (2015) Adapting to climate change in the mixed crop and livestock farming systems in sub-Saharan Africa, *Nature Climate Change*, 5(9): 830-836.
- *Webster, John (2013) Animal Husbandry Regained: The Place of Farm Animals in Sustainable Agriculture, Routledge. pp. 4–10*