



## A Comparison of Livestock and Desertification: A Case Study of Selected Taluks in Karnataka

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### ABSTRACT

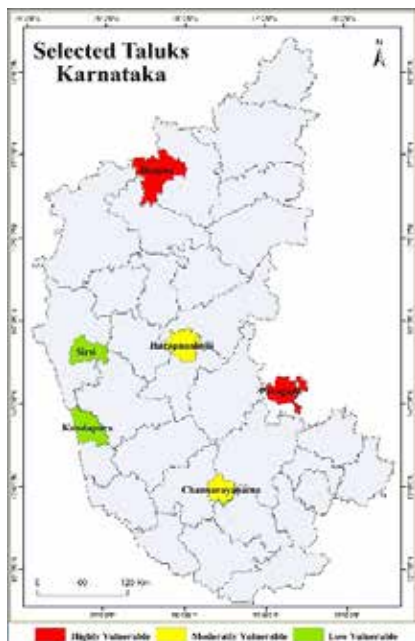
The present study conducted to assess the status of livestock population against desertification in the selected six taluks of Karnataka. Among the taluks Bijapur Pavagada are highly affected, Harapanahalli and Channarayapatna that is moderately affected, Sirsi and Kundapura that is low affected taluks. The result revealed that, highly affected taluks were having higher number of livestock with higher density, and moderately affected taluks were having average number of livestock with average density while low affected taluks were having less number of livestock with less density.

**KEYWORDS :** Grazing, Livestock, Density, Desertification

### INTRODUCTION

The status of livestock is directly links to the level of land degradation, a common remedy to improve degraded lands has been the removal of livestock (Weber K T and Horst S, 2011). The problem occurs only when the number of livestock is more than the available amount of grazing land or improper management of grazing. Hence, the study of comparison of available number of livestock and the level of desertification of the area would helpful to understand the influence of livestock. The state Karnataka is one of the highly affected states in India, where more than half of the area has been covered by semi-arid and arid region (Arun K, Sharma and Tewari J C, 2009). Therefore, the present study aimed to analysis the number of available livestock population between the selected taluks, that based on the desertification vulnerability. Livestock consists of sheep, goat, buffalo and cattle population, among these sheep and goat are highly distrusted in the state with high proportion, so the study mainly concentrated on sheep and goat population on the decorticated taluks in the state.

The study analyzed six taluks that varies in the level of desertification, such as Kundapura and Sirsi that are low desertification taluks, Harapanahalli and Channarayapatna which are moderately desertification taluks and Pavagada and Bijapur that are highly desertification taluks of the state.



### METHODOLOGY

The study was conducted based on the secondary data that has been obtained from concern department as well as through authorized websites. The number of sheep and goat for selected taluks have been collected from Animal husbandry, Dairying & Fisheries, India, and Landsat satellite imageries have downloaded from USGS website for the evaluation of availability of grazing land in selected taluks. Further, the sheep and goat information was manipulated using simple statistical analysis and mapped using GIS, the area of grazing land in each taluk have been found in GIS then density of livestock was identified.

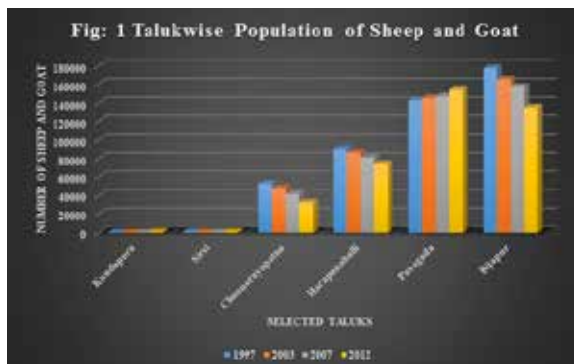
### Result and Discussion

The number of existing sheep and goat population for the years 1997, 2003, 2007 and 2012 have been analyzed for the comparison of level of desertification and number of livestock. From the data presented in table 1 it is clear that, the number of sheep and goat population are high in higher desertification area while low in less desertification areas whereas it was moderate in medium desertification areas.

Table:1 Taluk wise Population of Sheep and Goat

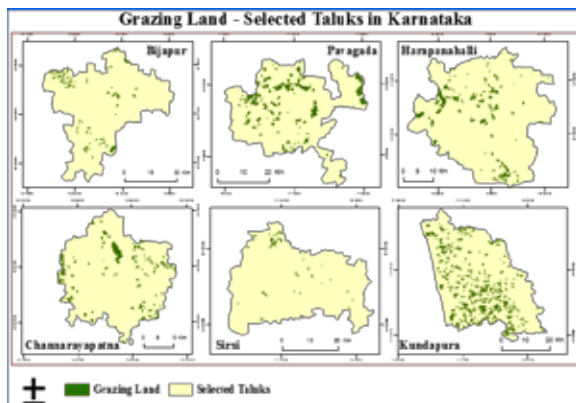
Taluk	Population in No.			
	1997	2003	2007	2012
Kundapura	996	1,068	1,118	1,346
Sirsi	1,554	1,514	1,479	1,374
Channarayapatna	53,165	48,165	41,665	32,511
Harapanahalli	90,271	86,471	81,271	74,394
Pavagada	142,932	145,432	147,432	154,247
Bijapur	177,651	165,651	157,651	135,368

Animal husbandry, Dairying & Fisheries, India

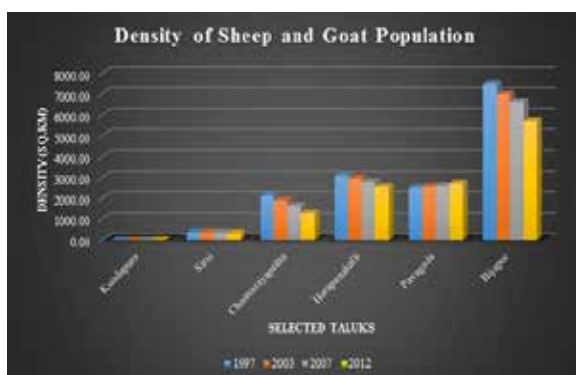


The figure 1 presented that, except Sirsi and Pavagada other taluks are having negative growth of population, and the notable thing is that, the variation in the number of sheep and goat between the taluks are significantly high, such as low desertification taluks were having in thousands, moderate desertification areas were having in ten thousand while high desertification area were having in lakhs.

Available grazing land in the taluks have been identified through the analyze of satellite imagery for the 2012, then area of grazing land has been combined with the number of sheep and goat population in each taluk to get density of it. The result depicts that, the availability of grazing land in Kundapura was 4.5 Km<sup>2</sup>, Sirsi 63.12 Km<sup>2</sup>, Chn-narayapatna 29.24 Km<sup>2</sup>, Harapahalli 25.24 Km<sup>2</sup>, Pavagada 56.92 Km<sup>2</sup> and Bijapur 23.76 Km<sup>2</sup>.



Taluks	Available Land for Grazing (Km <sup>2</sup> )	Density of Sheep and Goat (Per Km <sup>2</sup> )			
		1997	2003	2007	2012
Kundapura	63.37	15.72	16.85	17.64	21.24
Sirsi	4.3	361.40	352.09	343.95	319.53
Chan-narayapatna	25.24	2106.38	1908.28	1650.75	1288.07
Harapanahalli	29.23	3088.30	2958.30	2780.40	2545.12
Pavagada	56.96	2509.34	2553.23	2588.34	2707.99
Bijapur	23.74	7483.19	6977.72	6640.73	5702.11



From the figure 2 it is clear that, the density of sheep and goat are high in higher and medium desertification taluk when compared with low desertification taluks. Especially the taluk Bijapur has witnessed higher density while taluk Kundapura has witnessed lesser density. From this, it is clear that, the number of sheep and goat density is higher in high desertification area while it is less in lesser desertification area, which shows direct link of number of livestock on the process of desertification. Therefore, proper monitor of livestock would help for suitable management.

**CONCLUSION**

The present study analyzed the six taluks in Karnataka that comes under three different desertification level. The result references that,

number of sheep and goat is less in low desertification taluks and moderate in medium desertification taluks while it is high in higher desertification taluks. Further, the density of livestock against to availability of grazing in each taluk depicts that, the density is high in higher desertification taluks and moderate in medium desertification taluks while less in low desertification taluks. The overall result confirms that, the taluks which have higher number of livestock had witnessed higher desertification, therefore, the proper analysis livestock in micro level would bring out the valuable information for the suitable management.

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