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**SOURCES OF INCOME INEQUALITY AND EQUITY: A STUDY IN TRIBAL AREAS OF TAMIL NADU**

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**ABSTRACT**

A study was undertaken to identify the role of livestock as the income stabilising source among the tribal farmers of Tamil Nadu by collecting data from the 900 sample tribal farmers of six hilly areas of Tamil Nadu . The data were analysed by using Gini concentration ratio and depicting Lorenz curve . The results revealed that the income inequality was very high in crop enterprises (Gini ratio 0.69 ) followed by non farm income ( 0.49) and livestock income ( 0.39) with the overall income inequality of 0.39 . The income from livestock source was more evenly distributed than the other sources: the Gini coefficient of non-farm activity was found to be the least (0.09) in Kolli hills and the highest in Yelagiri hills (0.64). Among the three activities, livestock income was equally distributed more in Kolli hills (0.19) followed by Yercaud hills (0.26), Sitheri hill (0.36), Ooty hill (0.41) and last equally distributed in Yelagiri hills (0.43). The study revealed that the livestock rearing reduces the income disparities among the tribal households. As the livestock sector provides stable income compared to crop, measures may be initiated to involve the tribal farmers in livestock farming while framing policies and strategies for poverty alleviation programme in tribal areas of Tamil Nadu.

**KEY WORDS** : Income inequality, Gini ratio, Lorenz curve, Livestock farming,- Tribal

**INTRODUCTION**

Inter-personal inequality, Inter-regional inequality and poverty are the major characteristics of agrarian scene in India. Many studies implied the existence of the large inequalities in the distribution of both income and assets in rural India. In short, the problems of excessive dependence on agriculture, slow process of agricultural and industrial growth and ensuing inequality, unemployment and poverty are much serious and demand careful thinking by all the enlightened and progressive sections of people in the country (Bhalla, 1988). In many developing countries, livestock income is distributed far more equally than either agricultural income or land. Livestock income is an inequality decreasing source of overall income and it accounts for a small share of overall income inequality (Adams and He, 1995). Thus increasing income through smallholder livestock production has an immediate and direct impact on poverty (Mellor, 2003). Although, income inequality and equity sources have been assessed and analysed among rural farmers of various regions of India, studies among tribal farmers are very limited and the present study is put forth to identify the role of livestock as the income equity source among the tribal farmers of Tamil Nadu.

**MATERIALS AND METHODS**

The study was conducted by collecting data from the sample tribal farmers of six hilly areas of Tamil Nadu. The ten villages from each hilly areas namely Kolli hill in Namakkal district, Yercaud hill in Salem district, Ooty hill in The Nilgiris district, Kodaikanal in Dindigul district, Yelagiri hill in Vellore district and Sitheri hill in Dharmapuri district which are having high tribal population engaged in livestock farming activities were chosen for the study. Finally 150 tribal farmers were selected from ten villages of each hill through proportionate random sampling method to yield the total sample of 900 tribal farmers in the study area. The data were collected by the personal interview method with the use of pre-tested interview schedules. The reference years of this study were 2004 to 2006.

**Gini's Concentration Ratio**

In order to quantify the difference in income inequality between the different categories of tribal farmers, the Gini concentration ratio and Lorenz curve were used, as given by Bhatia ( 1996). The Gini concentration ratio was computed by using the following formula.

$$G.C.R = \frac{\sum_{i=1}^{n-1} (P_i Q_{i+1}) - \sum_{i=1}^{n-1} (Q_i P_{i+1})}{10000}$$

Where, G.C.R = Gini concentration ratio.

P<sub>i</sub> = Cumulative percentage of the households in the class.

Q<sub>i</sub> = Cumulative percentage of the gross household income in the *i*th class.

n = Number of income groups.

Gini correlation equals 1 (-1) when an income source is an increasing (decreasing) function of total income. When all the income source is constant the Gini correlation equals to zero implying that a source's share of Gini is zero.

### LORENZ CURVE

Geometrically, the Gini concentration ratio is illustrated by Lorenz curve. This curve is obtained by plotting cumulative percentages of income received against the cumulative percentages of households. The greater its concavity, the greater the inequality in incomes. Gini's concentration is equal to the ratio of the area circumscribed by the Lorenz curve and the diagonal line of equal distribution to the total area of the triangle below the diagonal. If the income is perfectly equally distributed, the Lorenz curve coincides with the diagonal line and Gini concentration ratio equals zero ; if the distribution is perfectly inequalitarian, the Lorenz curve coincides the right angled sides of the triangle and the Gini concentration ratio equals one.

### RESULTS AND DISCUSSION

Various income sources were analysed among the tribal livestock farmers of Tamil Nadu and the results revealed that income inequality was very high in crop enterprises (Gini ratio 0.69) followed by non-farm income (0.49) and livestock income (0.39) with the overall income inequality of 0.39. The lowest percentage of inequality in livestock enterprise might be due to the fact that, major livestock species reared by the tribal farmers were being cattle, buffalo, bullock, sheep and goat which yield products such as milk, meat, draught power and manure almost throughout the year. The results concur with the study of Sarma and Poleman (1993). Further, since crops are cultivated only seasonally in hills and because of varying climatic conditions, the yield was not that much stable when compared to other enterprises and this could be the reason for higher percentage of inequality in crop enterprise. Based on the results, Lorenz curve is depicted in figure, in which income distribution from agriculture source is located at a far distance from the line of equal distribution, followed by the non-farm source. Since, the income from livestock source was more evenly distributed than the other sources; its curve was found to be closest to the equal distribution line (when compared with other sources).

The source wise income distribution in different hills of Tamil Nadu is presented in the Table. The results revealed that the Gini coefficient of non-farm activity was found to be least (0.09) in Kolli hills which implied that the non-farm activity was found to be providing equal income to the tribals irrespective of categories. In contrast, the Gini coefficient of income through non-farm activity was observed to be high of Yelagiri hills. Among the three activities, livestock income was equally distributed more in Kolli hills (0.19) followed by Yercaud hills (0.26), Sitheri hill (0.36), Ooty hill (0.41) and the least equally distributed in Yelagiri hills (0.43). In case of crop activity, the income was more equally distributed in Kolli hill (0.34) followed by Sitheri hill (0.39), Kodaikanal hill (0.40), Yercaud hill (0.47) and was less equally distributed in Ooty and Yelagiri hills (0.54 each). The results indicated the advantage of rearing different livestock enterprises in hilly areas as the significant source of income and employment generation among the tribal farmers. Livestock rearing was observed to be the income equity source among the tribal farmers in the study area. Hence, importance should be given for livestock sector while framing policies for tribal people of Tamil Nadu. All the tribal development programmes should be intermingled with livestock sector for efficient development among the tribal farmers of Tamil Nadu.

Table : Source- wise income distribution of different hills in terms of Gini ratio.

Name of the hills	Sources of income		
	Livestock	Crop	Non-farm
Kolli	0.19	0.34	0.09
Yercaud	0.26	0.47	0.19
Ooty	0.41	0.54	0.25
Kadaikanal	0.25	0.40	0.52
Yelagiri	0.43	0.54	0.64
Sitheri	0.36	0.39	0.39
Overall	0.39	0.69	0.49

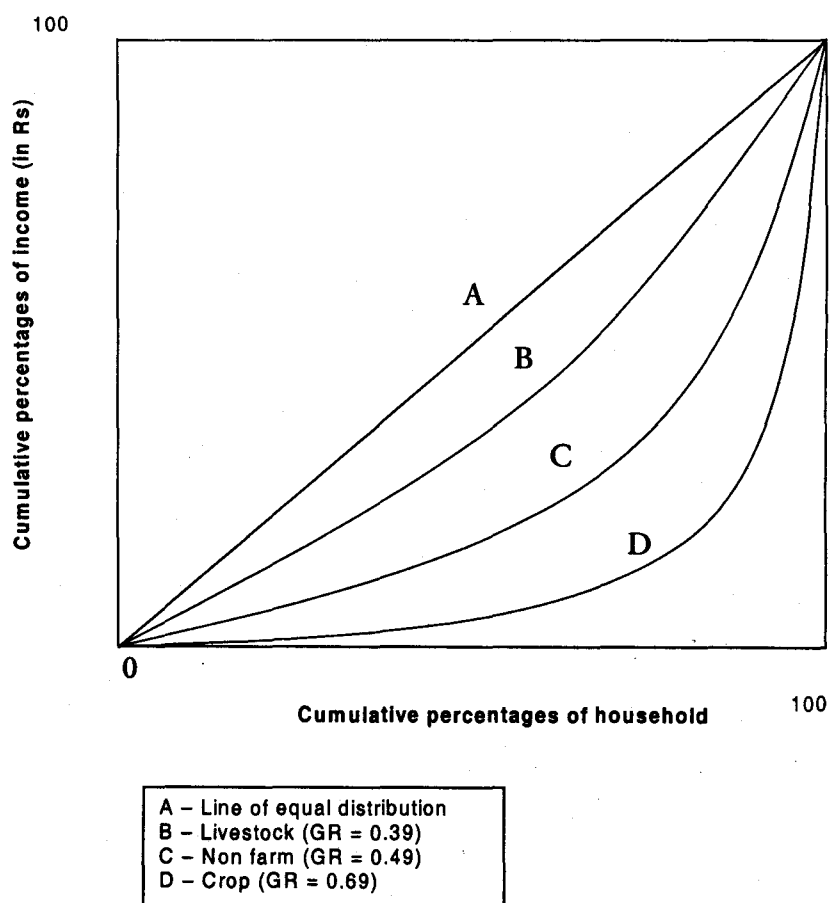


Fig- Lorenz curve for overall income distribution

**CONCLUSION**

The study revealed that livestock enterprise made a substantial contribution to the tribal economy and tribal income equity. The livestock rearing reduces the income disparities among the tribal households and the livestock value also inversely correlated with the poverty. As the livestock sector provides stable income compared to crop, measures may be initiated to involve the tribal farmers in livestock farming while framing policies and strategies for poverty alleviation programme in tribal areas of Tamil Nadu.

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