

INEQUALITY IN THE DISTRIBUTION OF CONSUMPTION EXPENDITURE AMONG THE TRIBAL AND NON-TRIBAL HOUSEHOLDS OF CHAMBA DISTRICT IN HIMACHAL PRADESH

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Abstract

In the present study, an attempt has been made to work out the magnitude of inequality in the distribution of consumption expenditure among tribal economy of Chamba district of Himachal Pradesh. The sample of 300 households from tribal and non-tribal area has been selected with the help multistage random sampling technique by using Lorenz curve and Gini-coefficient. The results show that the magnitude of inequality in the distribution of consumption expenditure is comparatively high in tribal areas as compared to non tribal areas. The highest inequality was found in tribal area as compared to non-tribal area, it is because that there income level, the higher income group people spent more and lower income group spent less on consumption. Therefore there was a highest degree of consumption inequality.

Keywords: Inequality, Poverty, Consumption, Food, Non-Food, Lorenz curve and Gini-coefficient.

1. Introduction

India is predominately an agricultural based developing rural economy. Like other developing countries, it is also characterized by absolute as well relative inequalities of wealth and income distribution. India as a developing economy is characterized by relative as well as absolute in the distribution pattern of the wealth and income but purely relative approach, measuring change in distributional conditions tell us little about the extent of poverty and deprivation. The alternative approach of absolute poverty places greater emphasis on absolute income levels of the poor and considers whether the level of living of the poor have improved over time. The weaker sections of society have remained in the grip of the vicious circle of poverty, unemployment and under-employment, low income and low investment. They are capital starved section of the rural population. They have very little or no productive assets and their meager income is derived from casual or regular employment available in the villages. An improvement in their lot is believed to be largely depended on the equal distribution of productive assets that will create greater employment opportunities and enhance their income level. Poverty is closely related to inequality. Given the average income level, a higher level of inequality will tend to be associated with a higher level of poverty. The relative poverty arises entirely as a consequence of an unequal distribution of income irrespective of what the income level of the people at the bottom end of the income scale might be. Keeping in view above fact, in present study an attempt has been made to analyze analyse the consumption inequality among the households in tribal and non-tribal region of chamba district of Himachal Pradesh. Himachal Pradesh is a holly and mountainous state with an area of 55,673 sq km which is 1.69% of total area of India and has and has 0.57 percent of the total population (As per census 2011).The main stay of the people of the Himachal Pradesh is agriculture on which 67.71 percent of the population depends for livelihood.

2. Objectives of the study

1. To analyse the consumption inequality among the households of tribal and non-tribal regions of chamba district in Himachal Pradesh.
2. To examine the shortcoming in consumption inequalities and suggest measures to remove this problem.

3. Methodology

The Chamba district of Himachal Pradesh constitutes the universe of the present empirical investigation which consists of the Bharmour and Pangi blocks of Chamba district. The district Chamba has been selected purposely, mainly due to the reason that only this district is inhabited by both tribal and non-tribal population. This district has 7 development blocks viz. Chamba, Mehla, Bharmour, Tissa, Salooni, Pangi and Bhatiyat. The Pangi and Bharmour Block are inhabited by the tribal, whereas the remaining development blocks are inhabited by non-tribal. In the tribal area the both the block have been selected. In non-tribal area all the five development blocks have been arranged in an ascending order on the basis of their respective population and two development blocks viz. Chamba and Mehla have been selected randomly. Selection of district, block, panchayat and household multistage random-cum-purposive sampling technique has been used in present study. Finally, a list of households along with their respective size of holding has been prepared. The household has been categorized in to marginal, small, medium and large household group. The sample of 300 households from tribal and non-tribal area has been selected for the present investigation.

In the present study, extent of inequality has been worked out with the help of Lorenz Curve and Gini-coefficient. The value of Gini-coefficient for total consumption distribution of the sample household is calculated with the help of following formula:-

$$G(c) = 1 + (1/n) - \frac{2}{n^2z} \sum_{i=1}^n (n+1-i) c_i$$

Where,

G(c) = Gini-coefficient of the total consumption distribution

n = total population

z = Mean value of the Consumption

c_i = value of the consumption of the i th person

4. Study Area (Chamba District)

The district is a wholly mountainous with ranging from 2,000 to 21,000 feet above mean sea level, the inhabited area reaching 10,000 feet. The abruptness of slopes and narrowness of rivers are characteristics features. Chamba town though situated in the valley is at the height of about 3,300 feet above mean sea level. There are three vallies viz, Ravi valley (or Chamba valley) which includes Chamba tehsil, Churah Tehsil, Salooni Tehsil, Bharmour Tehsil and Part of Bhatiyat tehsil; Chenab Valley comprises Pangi region and Beas valley covers Sihunta sub-Tehsil and rest of Bhatiyat Tehsil. According to 2011 census the total population of Chamba District has been estimated 5,19,080 at it gave a density of population at 80 person per square kilometer out of the total population, the number of male and females are 261320 and 257760 respectively which means that the number of female per 1000 male is 986. The total rural population was 482972 which are 93.04 percent of the total population residing in 1110 inhabited villages. The total tribal population of Chamba district was 135500 which constitute nearly 26.10 percent of the total population in the district. The total scheduled tribe population of Pangi and Bharmour development Blocks of Chamba district was 57976 which constituted nearly 42.79 percent of the total population in the district. According to 2011 census the overall literacy rate of Chamba district was 72.17 percent (82.59 percent for male and 61.67 for female). The literacy rate in tribal area of Chamba district was 72.93 percent (out of which 82.54 for males and 62.89 for females). The literacy rate of Pangi Block was 71.02 percent (out of which for male 82.52 and 59.27 for females). The literacy rate of Bharmour and Sub-Tehsil of Bharmour Development Block was 74.47 and 72.76 respectively Out of which 83.51 for males and 64.96 percent for females of Bharmour Development Block and 80.86 for male and 64.15 for females of sub-tehsil of Bharmour Development Block respectively.

5. Results and Discussion

Inequalities in the Distribution of Household Per Month Consumption Expenditure on Food Items Among the Tribal Farmers:

The cumulative percentages of the consumption expenditure on food items and the persons, falling in each expenditure group among all the farmers have been presented in Table 1. These cumulative percentages of consumption expenditure on food-items as well as of population when plotted on a graph paper, gives the resultant shape of Lorenz Curve which is evident from Figure 1. This Figure clearly shows that the bottom 30 per cent of the population is spending about 20 per cent of the total consumption expenditure on food items, whereas the top 30 per cent of the population is spending nearly 40 per cent of the total consumption expenditure on food items.

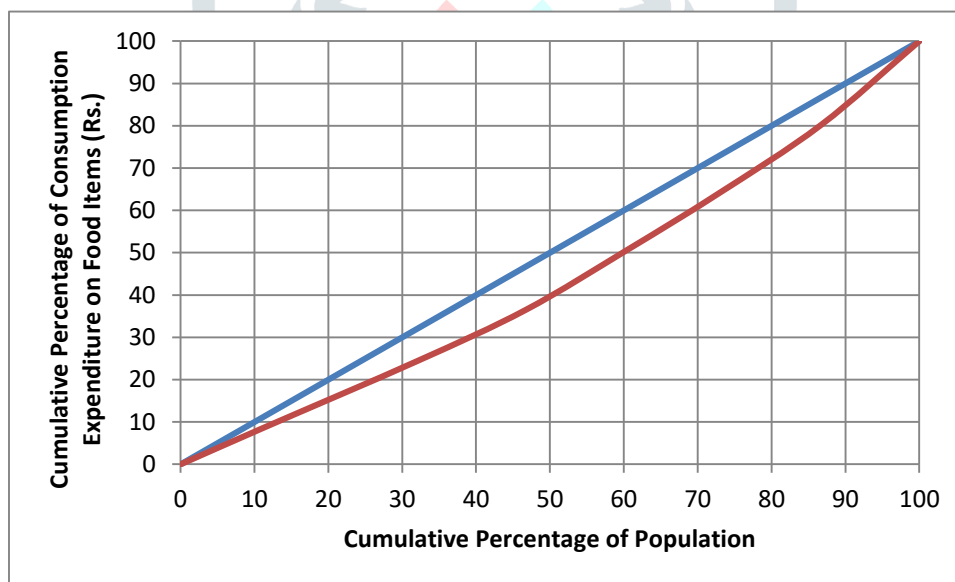
Table- 1
Inequalities in the Distribution of Household Per Month Consumption Expenditure on Food Items Among the Tribal Farmers

Persons in Standard Consumer Units

Group (Rs.)	Consumption Expenditure (Rs.)	Cumulative Consumption Expenditure (Rs.)	Cumulative Percentage	No. of Persons	Cumulative Persons	Cumulative Percentage
0-4000	93770.00	93770.00	8.55	109.5	109.5	11.12
4000-5000	173716.00	267486.00	24.39	205.8	315.3	32.02
5000-8000	132966.00	400452.00	36.52	145	460.3	46.75
8000-9000	156950.00	557402.00	50.83	136.5	596.8	60.61
9000-10000	141840.00	699242.00	63.77	118.2	715	72.62
10000-15000	179990.00	879232.00	80.18	138.5	853.5	86.68
15000 & above	217291.50	1096523.50	100.00	131.1	984.6	100.00

Figure 1

(0.1447)



The value of Gini-coefficient of consumption expenditure on food items among all the farmers has been calculated as follows:

$$\sum_{i=1}^n (n + 1 - i)Ci = 462269946.15$$

n = 984.6

$$Z = \frac{1096523.50}{984.60} = 969437.20$$

Therefore,

$$G(C) = 1 + \frac{1}{984.60} - \frac{2}{984.60^2 \times 969437.20} (462269946.15)$$

$$1.0010 - \frac{2}{1079637038.10} (462269946.15)$$

$$= 1.0010 - 0.0000002 (462269946.15)$$

$$= 1.0010 - 0.8563 = 0.1447$$

Thus, the value of $G(C) = 0.1447$

Both the shape of Lorenz curve as well as the value of Gini-coefficient for consumption expenditure on food-items, which are based on the aggregated analysis of consumption expenditure on food-items indicate overall normal level of consumption inequalities among all the holdings together, whereas the shape of Lorenz curve as well as the value of Gini-coefficient worked out with the help of disaggregated analysis i.e. separately for the marginal, small, medium and medium size of holdings clearly show an increasing tendency in the level of consumption inequalities on food-items with an increase in the size of holding.

Inequalities in the Distribution of Household Per Month Consumption Expenditure on Both Food and Non Food Items Among the Tribal Farmers: The cumulative percentages of the consumption expenditure on both food and non-food items and the persons, falling in each expenditure group among all the farmers have been presented in Table 2. These cumulative percentages of consumption expenditure on both food and non-food items as well as of population when plotted on a graph paper, gives the resultant shape of Lorenz Curve which is evident from Figure 2. This Figure clearly shows that the bottom 30 per cent of the population is spending about 20 per cent of the total consumption expenditure on both food and non-food items, whereas the top 30 per cent of the population is spending nearly 40 per cent of the total consumption expenditure on both food and non-food items.

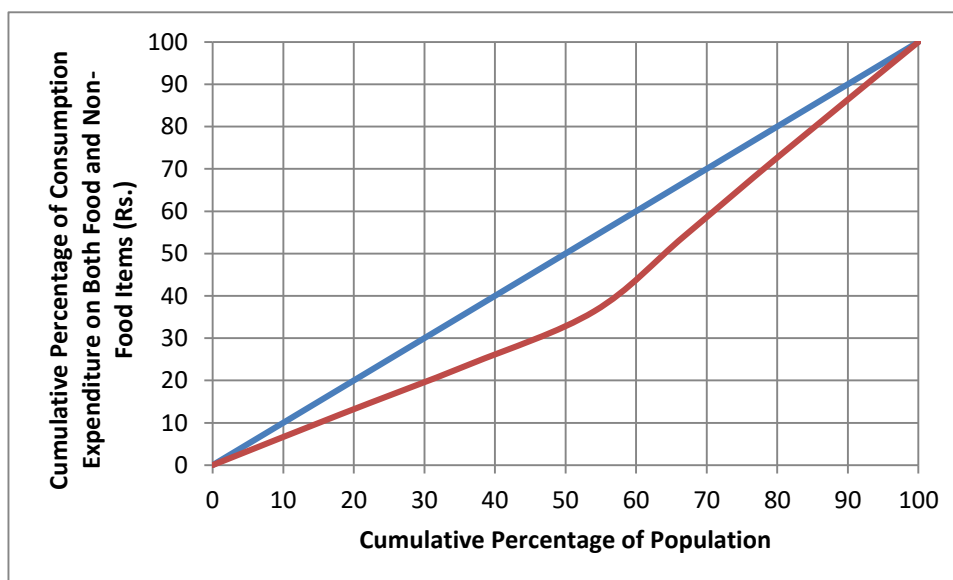
Table-2
Inequalities in the Distribution of Household Per Month Consumption Expenditure on Both Food and Non Food Items Among the Tribal Farmers

Persons in Standard Consumer Units

Group (Rs.)	Consumption Expenditure (Rs.)	Cumulative Consumption Expenditure	Cumulative Percentage	No. of Persons	Cumulative Persons	Cumulative Percentage
0-5000	180350.00	180350.00	11.89	176.80	176.80	17.96
5000-6000	179130.00	359480.00	23.69	180.00	356.80	36.24
6000-10000	191740.00	551220.00	36.33	175.30	532.10	54.04
14000-17000	270064.83	821284.83	54.13	125.90	658.00	66.83
17000-20000	293890.00	1115174.83	73.50	135.60	793.60	80.60
20000 & above	402111.17	1517286.00	100.00	191.00	984.60	100.00

Figure 2

(0.2015)



The value of Gini-coefficient of consumption expenditure on both food and non-food items among all the farmers has been calculated as follows:

$$\sum_{i=1}^n (n+1-i)Ci = 597233191.73$$

$$n = 984.60$$

$$Z = \frac{1517286.00}{984.60} = 1541.02$$

Therefore,

$$G(C) = 1 + \frac{1}{984.60} - \frac{2}{984.60^2 \times 1541.02} (597233191.73)$$

$$1.0010 - \frac{2}{1493919795.60} (597233191.73)$$

$$= 1.0010 - 0.000000001 (597233191.73)$$

$$= 1.0010 - 0.7996 = 0.2015$$

Thus, the value of $G(C) = 0.2015$

Both, the shape of Lorenz Curve (i.e. the distance between the diagonal and Lorenz curve) as well as the value of Gini-coefficient i.e. 0.2015, which are based on aggregated analysis of household monthly total consumption expenditure on both food and non-food items, for all the holding group together indicate the overall level of inequalities in the consumption expenditure without pointing out the percentage of consumers who are just trying to meet out their basic requirements at the one end and another section of consumers who are having plenty of resources to spend on their comforts and luxuries at the other end. This distinction between both inter and intra holding groups has been clearly brought out by the disaggregated analysis of household monthly total consumption expenditure on both food and non-food items which is the minimum on the smallest size of holding group and it shows an increasing tendency in the consumption inequalities with an increase in the size of holdings.

Inequalities in the Distribution of Household Per Month Consumption Expenditure on Food Items Among the Non-Tribal

Farmers: The cumulative percentages of the consumption expenditure on food items and the persons, falling in each expenditure group among all the farmers have been presented in Table 3. These cumulative percentages of consumption expenditure on food-items as well as of population when plotted on a graph paper, gives the resultant shape of Lorenz Curve which is evident from Figure 3. This Figure clearly shows that the bottom 30 per cent of the population is spending about 24 per cent of the total consumption expenditure on food items, whereas the top 30 per cent of the population is spending nearly 34 per cent of the total consumption expenditure on food items.

Table- 3

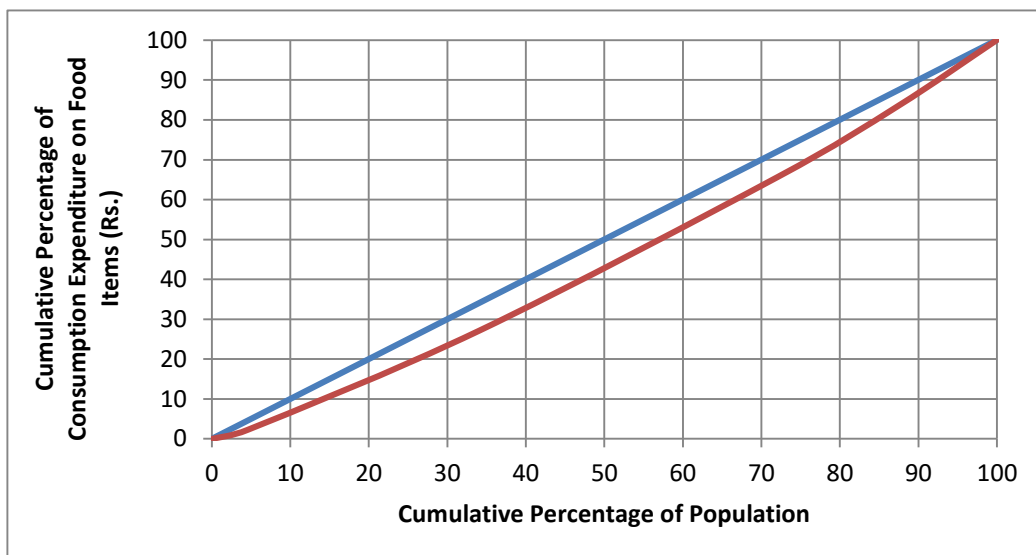
Inequalities in the Distribution of Household Per Month Consumption Expenditure on Food Items Among the Non-Tribal Farmers

Persons in Standard Consumer Units

Group (Rs.)	Consumption Expenditure (Rs.)	Cumulative Consumption Expenditure (Rs.)	Cumulative Percentage	No. of Persons	Cumulative Persons	Cumulative Percentage
0-2000	19900.00	19900.00	2.27	39.80	39.80	4.59
2000-5000	218750.00	238650.00	27.18	256.30	296.10	34.12
5000-8000	337365.83	576015.83	65.59	328.90	625.00	72.03
8000-10000	156773.33	732789.16	83.45	133.50	758.50	87.42
10000 & Above	145367.88	878157.04	100.00	109.20	867.70	100.00

Figure 3

(0.1205)



The value of Gini-coefficient of consumption expenditure on food items among all the farmers has been calculated as follows:

$$\sum_{i=1}^n (n + 1 - i)Ci = 335548537.25$$

$$n = 867.70$$

$$Z = \frac{878157.04}{867.70} = 1012.05$$

Therefore,

$$G(C) = 1 + \frac{1}{867.70} - \frac{2}{867.70^2 \times 1012.05} (335548537.25)$$

$$1.0012 - \frac{2}{761976863.61} (335548537.25)$$

$$= 1.0012 - 0.000000003 (335548537.25)$$

$$= 1.0012 - 0.8807 = 0.1205$$

Thus, the value of G(C) = 0.1205

Both the shape of Lorenz curve as well as the value of Gini-coefficient for consumption expenditure on food-items, which are based on the aggregated analysis of consumption expenditure on food-items indicate overall normal level of consumption inequalities among all the holdings together, whereas the shape of Lorenz curve as well as the value of Gini-coefficient worked out with the help of disaggregated analysis i.e. separately for the marginal, small, medium size of holdings clearly show an increasing tendency in the level of consumption inequalities on food-items with an increase in the size of holding.

Inequalities in the Distribution of Household Per Month Consumption Expenditure on Both Food and Non Food Items Among the Non-Tribal Farmers:

The cumulative percentages of the consumption expenditure on both food and non-food items and the persons, falling in, each expenditure group among all the farmers have been presented in Table 4. These cumulative percentages of consumption expenditure on both food and non-food items as well as of population when plotted on a graph paper, gives the resultant shape of Lorenz Curve which is evident from Figure 4. This Figure clearly shows that the bottom 30 per cent of the population is spending about 20 per cent of the total consumption expenditure on both food and non-food items, whereas the top 30 per cent of the population is spending 42 per cent of the total consumption expenditure on both food and non-food items.

Table- 4

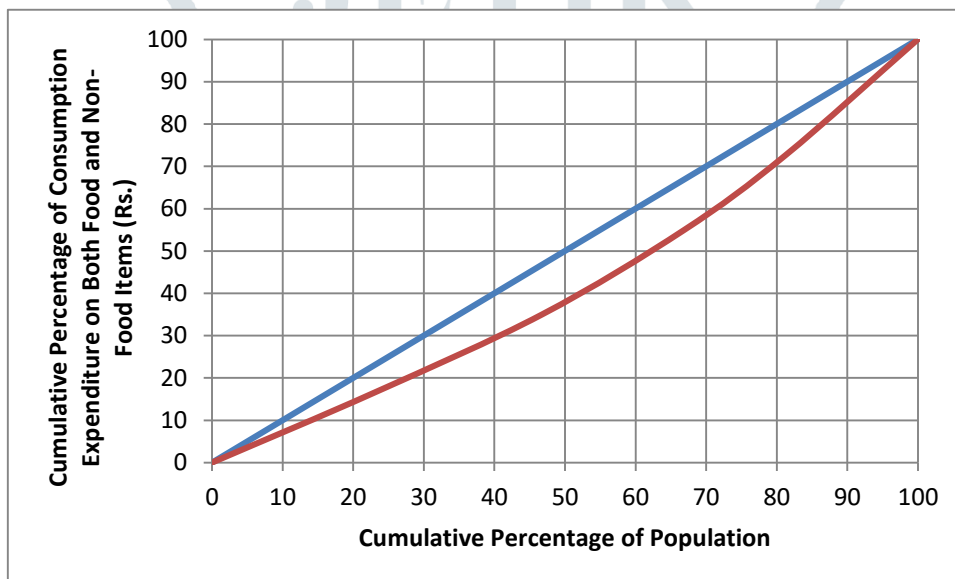
Inequalities in the Distribution of Household Per Month Consumption Expenditure on Both Food and Non Food Items Among the Non-Tribal Farmers

Persons in Standard Consumer Units

Group (Rs.)	Consumption Expenditure (Rs.)	Cumulative Consumption Expenditure	Cumulative Percentage	No. of Persons	Cumulative Persons	Cumulative Percentage
0-5000	204400.00	204400.00	16.56	200	200	23.05
5000-8000	226880.00	431280.00	34.95	205.3	405.3	46.71
8000-10000	246000.00	677280.00	54.89	174.5	579.8	66.82
10000-15000	218423.25	895703.25	72.59	125	704.8	81.23
15000 & above	338269.54	1233972.79	100.00	162.9	867.7	100.00

Figure 4

(0.1699)



The value of Gini-coefficient of consumption expenditure on both food and non-food items among all the farmers has been calculated as follows:

$$\sum_{i=1}^n (n + 1 - i)Ci = 445013739.02$$

n = 867.70

$$Z = \frac{1233972.79}{867.70} = 1422.12$$

Therefore,

$$G(C) = 1 + \frac{1}{867.70} - \frac{2}{867.70^2 \times 1422.12} (445013739.02)$$

$$1.0012 - \frac{2}{1070718189.88} (445013739.02)$$

$$= 1.0012 - 0.0000000019 (445013739.02)$$

$$= 1.0012 - 0.8312 = 0.1699$$

Thus, the value of G(C) = 0.1699

Both, the shape of Lorenz Curve (i.e. the distance between the diagonal and Lorenz curve) as well as the value of Gini-coefficient i.e. 0.1699, which are based on aggregated analysis of household monthly total consumption expenditure on both food and non-food items, for all the holding group together indicate the overall level of inequalities in the consumption expenditure without pointing out the percentage of consumers who are just trying to meet out their basic requirements at the one end and another section of consumers who are having plenty of resources to spend on their comforts and luxuries at the other end. This distinction between both inter and intra holding groups has been clearly brought out by the disaggregated analysis of household monthly total consumption expenditure on both food and non-food items which is the minimum on the smallest size of holding group and it shows an increasing tendency in the consumption inequalities with an increase in the size of holdings.

6. Conclusion and Suggestions

From the above analysis, the Lorenz curve drawn to study the consumption expenditure inequality of all sample households of the tribal indicates that the tribal consumption inequality curve is highly concavity from the line of equality than that of non-tribal consumption inequality curve. The highest inequality was found in tribal area as compared to non-tribal area, it is because that there income level, the higher income group people spent more and lower income group spent less on consumption. Therefore there was a highest degree of consumption inequality. The inequalities in the levels of levels of living is higher due to unequal distribution of productive assets mainly land in the rural areas. The distribution of land is such that only a small proportion of land is owned by the majority of marginal and smaller farmers. There are three zones viz; low, mid and high hill zones in Himachal Pradesh. The low and mid hill zones are suitable for intensive cultivation and animal husbandry and partly for horticulture, whereas, the high hill zone suitable mainly for horticultural crops. The result of this study reveal that most of the land is used for field crops in the non-tribal areas, whereas the most of the land in the tribal areas is used for the horticulture crops which are more remunerative in nature as compare to the field crops. But agriculture production as well as horticulture production depends upon the rain. Therefore, the Government should develop proper irrigation facilities in the tribal as well as non-tribal areas in order to decrease their dependence on rain on the one hand and it will increase their production and productivity on the other.

Thus it can be concluded the tribal and non-tribal households falling on the deferent size of holdings, there exist a lot of inequalities in the literacy percentage, distribution of household assets, sources-wise pattern of household income, distribution of household consumption pattern, nature and extent of household employment and per capita burden of debt as well as saving and investment pattern with resulted in wide variations in the poverty, inequalities and unemployment and thereby in the levels of living among these households in both the tribal and non-tribal areas. In order to raise the levels of living as well as to reduces the inequalities in the distribution of assets, income and consumption expenditure, the planners, policy makers and administrates should implement the poverty alleviation and employment generation programmes more effectively in such a way that the most poor be benefited the most and the least poor be benefited the least in both the tribal and non-tribal areas.

The following measures can be adopted far raising the levels of living of poor people among the tribal and non-tribal in the district Chamba. The literacy percentage has lower on the smaller holdings among both the tribal and non-tribal areas. Therefore, the Government should give top priority for providing education i.e. mainly technical and professional to these people, So that they may be able to take up gainful employment in modern sector of the economy. For this purpose, government should provide free and compulsory education up to certain levels, provision of scholarship is made and finances at low rate of interest be provide for vocational and higher education.

Thus in order to reduce the intra and intertribal and non-tribal variation of the rural poverty, as well as to raise their levels of living, efforts should be made to increase the availability of productive assets, skill formation and gainful employment opportunities among both the tribal and non-tribal areas. The planning strategy for the development of the tribal and non-tribal areas should be judicious mix of beneficiary-oriented programmes, human resources development, keeping in view the hilly topography, extreme cold climatic conditions and lack of infrastructural facilities in the area under the study emphasis should be

placed on the minor irrigation, soil and water conservation, cooperation, rural roads, storage, marketing and land reforms in the infrastructural sector; drinking water supply, general education and health in the service sector; horticulture, animal husbandry, dairy development and forestry in the agriculture sector and small as well as cottage industries using the local skill and raw material in the industrial sector.

7. References:

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