Chapter V: Employment
Labour is the primary factor input in every sector of the economy. Whereas excessive supply of labour creates unemployment problem, labour shortages or scarcity may act as a constraint or an impediment to production and hence economic development. In the developing countries, like India, agriculture is the dominant sector of the economy, and the majority of the working population is engaged in this sector. Besides, rural population in these economies has been growing much more rapidly than the urban or even overall population. Consequently, the pressures of numbers on land has been increasing continuously as an economy moves from lower to higher stages of development. It has been observed that the proportion of its labour force engaged in agriculture and related activities tends to fall relative to the work force engaged in industries.

But this has not materialized to a discernible extent in the Indian Economy in general and the less developed regions in particular despite the impressive growth of the industrial sector of the economy. In fact, the population explosion has subsumed the substantial proportion of the impact of industrialization, and then the tertiary sectors of the economy have grown even more rapidly than either the primary or the secondary sectors of the economy. Consequently, this intermediate stage of transformation has been skirted by the Indian economy.41
Since Mizoram is among the least developed states of India, the proportion of labour force engaged in agriculture is very high. All the same, agriculture continues to absorb the largest number of the job-seekers. In a relatively less developed economy like that of Mizoram, agriculture is even more important than what it is in the rest of the country. According to the socio-economic survey conducted by the Department of Economics and Statistics in 1978, 85% of the workers are employed in agriculture. Thus, the nature of employment and the labour productivity in agriculture is of utmost importance as it has a direct bearing upon the economic development of the state.

But the state of Mizoram has one of the lowest density of population in India, and has also experienced labour shortages. Besides, in rural Mizoram, labour market has not developed still though wage labour seems to be emerging slowly. Therefore, family is the main source of the supply of labour. So, the size of the family, its sex composition and dependency ratio are expected to have important effects on the level and nature of employment. Probably, it is because of labour shortages that the distribution of land has been done on the basis of the family size. Thus, the labour supply seems to determine the size of holding. Consequently, the size distribution of the families and the size distribution of the holdings
are found to be highly correlated. We have already found empirical evidence to support this hypothesis. So larger the size of the family, larger will be the size of the holdings. But a large holding requires relatively more labour than the small ones. So, a larger holding is expected to have more employment than the small and marginal farms.

But we have found that the jhum and settled cultivation do not differ significantly in so far as the family size is concerned. Therefore, we do not expect the level of employment in the two modes of cultivation to differ significantly. We have, therefore, tested both the mean and median differences of the family size, holding size and employment between the two modes of cultivation in order to evaluate if there are systematic factors at work affecting the level of employment in the two sub-samples.

5.1 Size of Family and Employment

In the north-eastern states of India, which are labour scarce and land abundant, no organised markets of labour exist in the rural areas. The farmers depend on family labour; and the constraint imposed by shortage of family labour is generally attempted to be made good by exchange-labour. Labour is supposed to be perishable. Interestingly, the institution of exchange labour not only overcomes the difficulty of the absence of labour market,
but it also facilitates the overcoming of the perishability by preserving and storing family labour for periods when it will be needed and will be short of requirements by lending it to others at times when it is in excess of the family requirements.

We have analysed the mean and median levels of the family size and employment in the two modes of cultivation separately; and tested the mean and median differences of the size of the family and the level of employment. The mean and median size of the family of jhumias are 7.55 and 6.75 respectively while that of settled cultivators are 8.13 and 7.56 respectively.

The mean is greater than the median in both the cases; and test of the mean and median differences should yield similar results. The standard error of the mean difference of the family size is .4 while the observed mean difference is .58. Thus, the ratio of the difference of the mean family size to its standard error is 1.45 which is not significant statistically. Similarly, the standard error of the median difference is .76 whereas the observed median difference is .81. The ratio of the observed median difference to its standard error is only 1.06 which is also not significant statistically. Thus, the difference of the family size between the two modes of cultivators is statistically zero. Theres results also conform to our
hypothesis that it does not matter whether we test the mean or median difference.

On the basis of this result and the hypothesis that the supply of labour and employment is directly related to the family size, we do not expect the labour absorption capacities of the two modes of cultivation to be different. But the mean and the median values of employment per holding have also been calculated. In jhum they are 3.33 and 2.97 respectively. The mean and median size of employment per holding of settled cultivation are 4.324 and 3.71 respectively. In this case also, the mean size of employment is greater than the median size. Thus, on an average, the employment generated per family in the settled cultivation is 1.28 times the employment provided by jhum. At the median level, the settled cultivation generates 1.25 times more employment opportunities than the jhum. Thus, on this count alone, the programmes of eradication of jhum may be justified. The test of the mean or median difference should yield similar results. The standard error of the mean differences of employment per family is .24, while the observed difference of the mean size of employment per family between the two modes of cultivation is .994. Thus, the ratio of the observed mean difference to its standard error is 4.14, which is statistically significant. The standard error of the median difference is .25, while the observed median difference is .74. The ratio of these two is as high as 2.96 which is also significant statistically. These results supported our hypothesis that whether we test the mean
difference or the median difference, they would yield similar results.

But these results do not support the hypothesis that, in view of the similarity of the family sizes in the two modes of cultivation, same level of employment per family will be generated in agriculture irrespective of the mode of cultivation. It implies that factors other than the family size play an important but differential role in employment generation in the two modes of cultivation.

Since family size is not the only factor which affects the supply of labour, the difference may be caused by the age and sex composition and the dependency ratio as well. It may, however, be noted that women in Mizoram work as much on their farms as men. Therefore, a priori we do not expect the sex composition to exercise a differential influence on employment either within or between the different modes of cultivation. We have examined the sex composition all the same. Hence, the sex composition has not much to do with the differential supply of labour. However, the data show that the ratio of the total population to the total number of workers in the settled cultivation is 2 while it is 2.41 in the jhum cultivation. Thus, the number of workers in population does not appear to differ much. The dependency ratio in the settled cultivation is 1.06 while it is 1.41 in the jhum cultivation. Thus, the dependency ratio is also not substantially different.
Thus among the demographic variables, family size may still be found to have a direct bearing upon employment. The nature and the extent of interrelation between the family size and employment has been examined by means of regression-correlation analysis. The coefficient of correlation in case of jhum is .73 while it has a value of .62 for the settled cultivation. In both the cases, the correlation coefficients are significant, t values being 9.16 and 6.54 for 74 and 69 degrees of freedom. The explained proportion of variation in employment in the jhum is 53 while it is 38 per cent in the settled cultivation. Factors other than the family size explain 47 per cent of the total variation of employment in jhum, while such factors explain as much as 62 per cent of the total variation in the level of employment under the settled cultivation. The estimated regression equations are as follows:

\[ E_j = -0.72 + 0.54 F_j \quad R^2 = 0.53 \]
\[ t = (9.16) \quad F = (83.5) \]
\[ E_s = -0.49 + 0.59 F_s \quad R^2 = 0.38 \]
\[ t = (6.54) \quad F = (42.29) \]

where \( E_j \) and \( E_s \) refer to employment and \( F_j \) and \( F_s \) are family size in the jhum and settled cultivation respectively.

The estimated parameters have the expected signs and are statistically significant. An unit increase in the
family size leads to an increase of .54 in employment of the jhum cultivation, while an unit increase in the family size of the settled cultivator leads to an increase of .59 in the level of employment. These results conform to our hypothesis that the level of employment depends upon the size of the family. But the systematic differences in the labour absorption capacities of the two modes of cultivation may require the analysis of factors other than the family size also. Therefore, we have examined the holding size as another possible determinant of employment.

5.2 Size of Holding and Employment

As land is the most important input of agricultural production, the use of other factors, like labour, depends largely on the size of holdings. Larger the holding size greater will be the quantities of the co-operating factor inputs, like labour, required in the production process. Accordingly, the size of holding is expected to have positive impacts on the level of employment. It will, therefore, be interesting to know if there exist a systematic relation between the size of holding and the level of employment. And if there is any systematic relation between the two factors, it will be interesting to know the nature and extent of their relationship. In fact, the economic and technological viability of the farms depends largely on the size of holding. A large farm has more employment and output potential, and is supposed to be
First, we examine the mean and median differences of the size of holding and employment per holding between the jhum and settled cultivation. The mean and median values of the size of holding in the jhum cultivation are 3.6 acres and 3.25 acres respectively, while the values are 4.13 and 3.04 acres respectively in the settled cultivation. Here again the mean value, in both the cases, is more than the median value; and whether we test the mean difference or the median difference should make no difference. It is obvious that the holdings under settled cultivation are 1.13 times larger than the jhum holdings, while the median holding size under settled cultivation is 1.21 times larger than that of the jhum holdings. But standard error of the mean difference of the holding size is .2, while the observed mean difference is .53 acres. The ratio of these two is 2.65 which is significant. Similarly, the standard error of the median difference of the holding size is .3 while the observed difference is .69. The ratio of these two is 2.3 which is also significant at 5% level. These results conform to our hypothesis that testing of either the mean or median difference will furnish similar results. It is also interesting to note that whereas the differences between the family size of the two modes of cultivation is statistically zero, the holding size differs significantly between
the two, close and significant inter-relations between holding size and family size notwithstanding. Therefore, the differences of employment between the two modes of cultivation may be explained more meaningfully in terms of differences of holding than family size. While the family size operates on the supply side, the holding size represents demand side of labour equation. As the supply constraints as represented by family size are similar in the two modes of production, the differential employment levels may, therefore, be plausibly attributed to the demand side factors.

The estimated values of the mean size of employment per holding is 4.2 and 3.6 in the settled and jhum cultivation respectively. The standard error of mean difference is .2 while the observed difference is .6. The ratio of the two is 3 which is significant statistically at 1% probability level.

The nature and the extent of interrelation between the holding size and the level of employment may be examined by means of coefficient of correlation which has a value of .8 for jhum and is only .3 for the settled cultivation. Both these coefficients are significant, t values being 11.47 and 2.61 for 74 and 69 degrees of freedom. The variation of holding size in the jhum cultivation explains as much as 64 per cent of the total variation in employment, while the holding size explains only 9 per cent of overall change in employment in the settled fields. Factors other than the
size of holding explain only 36 per cent of the total variation in the level of employment in the jhum cultivation; while such factors explain as much as 91 per cent in the settled cultivation.

The estimated regression equations are reported below:

\[ E_j = 1.15 + .68 L_j \]  \hspace{1cm} R^2 = .64
\[ t = (11.47) \]  \hspace{1cm} F = (131.35)

\[ E_s = 2.9 + .32 L_s \]  \hspace{1cm} R^2 = .09
\[ t = (2.61) \]  \hspace{1cm} F = (6.82)

where \( L_j \) and \( L_s \) refer to area of land cultivated (or the size of holdings) under jhum and settled respectively. The parameters have the expected signs and are statistically significant also. Corresponding to an unit increase in the holding size, the level of employment under the jhum cultivation increases by .68 persons while a similar change in the settled holdings creates employment for .32 additional workers. But this relation in the settled cultivation is relatively weak. Anyhow, these results lend empirical evidence to our hypothesis that the level of employment depends largely on the size of holding. This also furnishes empirical evidence to support the hypothesis that the demand side factor exercise the decisive influence on employment even in a labour scarce economy like that of Mizoram, and that the supply side factors like family size are not that much effective.
In the light of the above results, it may be interesting to know the relative labour intensity of the two modes of cultivation. We, therefore, examine directly the employment per acre of land in the two sub-samples. The employment level per acre of jhum land is 1.05 and that of settled ones is 1.05 which are more or less equal. Thus, the two types of cultivation/production are equally labour-intensive.