

**A CONFIGURATION OF POVERTY
IN THE BORDER AREAS OF MEGHALAYA
A CASE STUDY OF SHELLA VILLAGE IN EAST KHASI HILLS**

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THE DEGREE OF DOCTOR OF PHILOSOPHY
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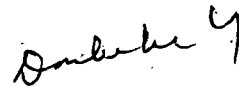
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CHAPTER 1

INTRODUCTION

Though the problem of poverty in the country is not a new phenomenon, it was not till the seventies that the economists and other social scientists undertook to study the problem on a large scale. Since then, there has been a growing response from the scholars to study further the problem of poverty in the country. These studies have not only attempted to ascertain the numbers of the poor and their variation over the years both in the country as a whole and in the different States, but have also provided recommendations of policies and programmes to eradicate poverty in the country. Though these studies did provide general guidelines for anti-poverty policies and programmes at a national level, yet it is felt that in a big country like ours, with diverse regional identities and more complex cultural and ethnic varieties, these studies which are based on national and State level data, are of little help for specific anti-poverty policies and programmes at micro level. This is more true in the case of North-Eastern Hill Region of our country where more than 200 different tribes lived in relative isolation for a very long period of time, and as such, each trib

has its own way of living and standard of life. These tribal societies "have by tradition control of and access to rich resources, but they are not well off. They are conscious of the fact that their level of living is not satisfactory, but it is difficult to say that they perceive themselves as poor. More frequently they perceive themselves as cordoned off from the benefits of their resources".¹ Further, the data on which these studies were based give little or no information at all on the problem of poverty in the hill region of North-East India. Again, the micro level studies in the region are very scanty and therefore, not much is known about the problem of poverty in the region. In fact there is very limited information on the characteristics of the people who live below the poverty line in the region. Hence, this study is attempted in a far remote village in the border areas of Khasi Hills - an area which is relatively more backward in the State of Meghalaya, and it is expected that the study will throw sufficient light on the problem of poverty in the area.

In this introductory chapter, we first give a rationale for selection of the villages in Section I, followed by setting out the objectives in Section II. In Section III we give the hypothesis. Sources of data and the sampling design are present in Section IV and V respectively. Finally, scope and limitation of the study are given in Section VI.

I

Selection of the Villages

One of the most important demographic characteristics in the border areas of Khasi Hills at present is the presence of two major groups of inhabitants, viz., the Khasis who are the indigenous inhabitants and the non-Khasis who migrated from across the border and elsewhere. The Khasis, being the indigenous inhabitants, occupy and control all land property and other natural resources in the area. The non-Khasis, on the other hand, were considered as outsiders, and therefore, not entitled to the rights enjoyed by the Khasis. Customarily, they (non-Khasis) are not entitled to own land asset, which is the only important productive asset in the rural areas. Hence, they depend much on the mercy of the few well off land owners in the area. Most of them are employed as share-croppers and labourers of a few landed households. Again, the settlement pattern shows that the Khasis concentrated in the slopes or foot of the slopes, whereas the non-Khasis occupy the plain tract areas adjacent with the international border with Bangladesh. Therefore, socially and economically, these two groups of inhabitants differ from each other.

In order to have a good understanding on the problem of poverty among these two groups of inhabitants, a village known as Shella, which is itself a cluster of 21 census villages (or as we call them hamlets), is purposively selected. This is because, from whatever information we could get, it is the most representative as it adequately represent the two major groups of inhabitants in the area (see chapter 4). However, it may be mentioned that there are other reasons as well for which we may consider this cluster of villages or hamlets as the representative ones in the border areas of Khasi Hills. The reasons are:

- i. Historically, the villages in and around Shella were believed to be the most affluent villages in the border areas of Khasi Hills before the great earthquake of 1897. Their economy was destroyed by the earthquake and deteriorated further by the partition of the country in 1947.
- ii. The villages are located very close to the international border with Bangladesh.
- iii. Located as they are far away from the urban centres, the villages seem to be free from urban influences.
- iv. Taking the infrastructural facilities available in the border areas of Khasi Hills, these villages or hamlets may be considered neither developed nor backward.

- v. Lastly, like any other villages in the border areas, the villages selected for our study depend much on border trade with Bangladesh.

II

The Objectives

The main purpose of the present study is to explore the important issues related with the problem of poverty between the two major groups of inhabitants, viz., the Khasis and non-Khasis, in the border areas. Hence, its main objectives may be stated as follows :-

- i. to study the economic, social and demographic characteristic of the area under study;
- ii. to estimate the extent of poverty in the area and examine the association between poverty and other socio-economic characteristics; and,
- iii. to suggest policy directions suitable to local condition for amelioration of poverty.

III

The Hypothesis

The Second Five Year Plan states that "the pattern of development and the structure of socio-economic relations should be so planned that they result not only in appreciable increase in national income and employment but also in greater equality in income and wealth.....The benefits of economic development must accrue more and more to the relatively less privileged of society, and there should be a progressive reduction of the concentration of incomes, wealth and economic power".² To achieved this objective, several policies and programmes have been formulated and innitiated in the country to uplift the economic position of the 'relatively less previledged'. However, it is observed that these policies and programmes have not succeeded in making a serious dent on the problem. The relatively economically backward and socially oppressed people, in both developed and backward regions seems to have

derived little or no gain at all from these policies and programmes. The ~~bulk~~ bulk of the fruits of these programmes appear to have passed more to the already developed regions, and further, within such regions benefits accrued proportionately more to the already rich and powerful, whereas the less privileged of our society are still struggling for their survival. The border areas of Meghalaya, as we shall see in Chapter 4, is a relatively a backward area. The agricultural practice is primitive, and the basic amenities are still lacking. Further, the sectoral allocation of funds (by the government) on important sectors like agriculture and allied sectors seems to have received insufficient attention. Against this background, the following set of hypotheses have been formulated:

- i. A sizeable proportion of population in the border areas of Khasi is in poverty.
- ii. Between the two major groups of inhabitants in the area, poverty is more severe among the non-indigenous population (non-Khasis) who by customary rights were not entitled to own land which is the only important productive asset in the area.

IV

The Data

For economic, social and demographic characteristics of the area under study, data available from the Census Volumes, Government Publications, Field Investigations and other sources have been utilised.* However, while analysing the various issues of poverty in the area, we have depended solely on primary data which were collected by canvassing the detailed Questionnaire to households selected at random. The information contained in the Questionnaire³ could be categorised as follows :-

- i. Demographic data: Details were recorded about the age and sex composition, literacy and educational level, religion and caste/tribe affiliation, and other related information of each member of household.
- ii. Occupation: Following the definition and concept of worker as adopted in the 1981 census, information was collected on the industrial distribution and activity status of each individual worker.
- iii. Employment: Included information on the number of days of employment of each individual member of household on self-employed occupation, wage occupation, etc.

* The source of the tables throughout the study, unless otherwise mentioned, is based on our field investigation data.

- iv. Assets: Information was collected on the various assets owned by the household. of the various assets, land is the most important productive asset. Therefore, detailed information were collected on the amount of land owned, leased-in and leased-out by the household.
- v. Income: Information was collected on the different sources of income derived by the household. These sources include income from self-employment in agricultural works and non-agricultural works, wage income from agricultural and non-agricultural works, rent, and other sources of income.
- vi. Dietary composition and household expenditure: It included information on the quantity and value of each variety of cereals, pulses, milk and milk products, edible oils, sugar vegetables, fish, meat and other items of food consumption by the household during the reference period. Besides these items, it also included information regarding expenses on fuels, light, etc. incurred by the household during the reference period.

The above information was collected on a recall basis and the maximum period of recall was one year, except in the case of dietary composition of household where the recall period

was only one month. This is being done to minimise errors which are liable to arise because of the difficulty of the respondents to recall the quantities of different varieties of food-items as well as expenses incurred by the households during the recall period.

It is also to be mentioned that during the tabulation stage, some cases have been found where the answers to the queries in the schedule could not be considered as reliable due to inconsistency. In such cases we have tried to capture correct and reliable information through verification and cross-checking from the village elders and headmen.

v

Sampling Design

In selecting the sample households, first the village hamlets were stratified into two groups, viz., Group-A Hamlets and Group-B Hamlets. The stratification is on the basis of demographic characteristics in the village, that is, in Group-A Hamlets we included all those hamlets which are inhabited by the Khasis and Group-B Hamlets included all those hamlets which are predominantly inhabited by the non-Khasis. In other words, Group-A Hamlets represent the indigenous population group, whereas Group-B Hamlets represent the non-indigenous population group. As such, each of these two groups

may be considered to be socially and economically homogeneous within their own right. Again, because of time and cost constraints, a two-stage sampling is adopted in selecting the sample households. That is, in the first stage, 50 per cent of the hamlets are randomly selected from each hamlet group, followed at the second stage by the selection of sample households from within the randomly selected hamlets. However, in selecting the sample households from the selected hamlets it is ensured that :-

- i. if the selected hamlet consists of less than 25 households, 100 per cent of the households will form the sample;
- ii. if the selected hamlet consists of more than 25 but less than 50 households, 50 per cent of the households will be included in the sample;
- iii. if the selected hamlet consists of more than 50 but less than 100 households, 25 per cent of the households will be included in the sample; and,
- iv. if the selected hamlet is more than 100 households, then only 15 per cent of the households will be included in the sample.

Having determined the sample size from each selected hamlet by following the above criteria, the sample households are independently selected from each hamlet, by using simple random sampling method.⁴

Reference period and Time-frame for Field Investigations: The reference period of this study is January, 1983 - December, 1983, which happens to be a normal year in the whole of the border area while choosing the time-frame for field investigation, we had taken into consideration the effects of fluctuation in employment opportunities, availability of local produce, and wages on the level of poverty in the area. Therefore, two rounds of field investigation were conducted. The first round was conducted during the month of June - August, 1983, which is relatively a slack season in the area, and the second round was conducted during the months of October - December, 1983, which is relatively a busy season in the area.

The main purpose of repeating the survey was to capture the seasonal variations in food-intake, if any resulting from the seasonal variations in employment, income and other variables in the area. Further, it was decided that the same households which formed our sample in the first round of survey would also form our sample during the second round. But it is regretted that out of the 187 households surveyed during the first round, 6 households could not be included in the second round due to unavoidable circumstances.

The number of sample households and population during the first and second rounds are given in table 1.1.

Table 1.1 : Sample Households and Population

Hamlet Group	<u>First Round of Survey</u>		<u>Second Round of Survey</u>	
	Household	Population	Household	Population
A	87	436	85	430
B	100	602	96	582
(A + B)	187	1038	181	1012

VI

The Scope and Limitations of the Study

Although the present study deals with the various issues of poverty in the area, its scope is subjected to two important limitations:

- i. Due to the non-availability of any other sources of information on the incidence of poverty in the area, the scope of the present study had to be confined only to the period covered by the field investigation period. That is, the study is confined to the period January - December, 1983.
- ii. The present study is, strictly speaking, confined to an area which is a cluster of several census villages. Therefore, too much generalisation could not be made from the study. Whatever conclusions are made, they are restricted to the study area only. However, since the villages selected are

considered as representative villages in the border area of Khasi Hills, it is postulated that the situation in group of villages can not be so radically different from other villages in the border areas. Therefore, the conclusions (or data) could be taken as trends prevailing elsewhere in the border areas of Khasi Hills.

APPENDIX TABLE TO

CHAPTER 1



Table 1.A : The Selected Hamlets, Number of Existing Households and the Sample Size from each Selected Hamlets.

Hamlet group	Selected hamlets	Existing number of households	Sample size	Percentage of sample to total hhs.
1	2	3	4	5
A	1. Nongrum	13	13	100.00
	2. Mawryngkhong	46	23	50.00
	3. Jasir	36	18	50.00
	4. Duba	10	10	100.00
	5. Sohlap	90	23	25.56
Total	5 hamlets	195	87	44.62
B	1. Kalatek	140	21	15.00
	2. Umkhabaw	165	25	15.00
	3. Umtham	57	14	24.56
	4. Khahsyndha	47	24	51.06
	5. Khahmohi	32	16	50.00
Total	5 hamlets	441	100	22.68
(A + B)	10 hamlets	636	187	29.40

Note: Existing number of households is given as on the date of survey.

Notes and References

1. Roy Birman, B.K. (1984). "Towards Poverty Alleviation Programmes in Nagaland and Manipur" Mittal Publication, p.x.
2. India, Government of (1956), Second Five Year Plan, Planning Commission, New Delhi, p.22
3. The definitions and methodologies of computing household income, calorie intake of each households, etc. are given in relevant chapters.
4. Since the number of hamlets in the Shella Village and the number of house-holds in each hamlet is not of considerable size, the selection of hamle-ts and of households has been done by following the lottery method, rather than using random numbers.

CHAPTER 2CONCEPTS AND MEASURES OF POVERTY

The nature and magnitude of poverty differs from country to country and from time to time. Hence, for the analysis of poverty, different scholars have treated the problem differently, depending on the economic and social conditions of the area under study. It is, therefore, the object of this chapter to give a brief review of the important concepts and measures of poverty frequently used in the literature of poverty . The chapter is divided into two sections. In section I, we try to give a brief review of the concepts of poverty followed by section II which deals with the tools used in measuring the magnitude and severity of poverty.

Concepts of Poverty

To start with, one may first distinguish between 'primary' and 'secondary' poverty. Rowntree, in his pioneering work in the subject, defined families whose "total earnings are insufficient to obtain the minimum necessaries for the maintenance of merely physical efficiency as being in primary poverty".¹ Relying on the work done by Atwater and Dunlop, he estimated the average nutritional needs of adults and children, translated these needs into quantities of different foods and then into the cash equivalent of these foods. To this food-cost, a minimum sum of clothing, fuel and other expenses were added, depending on the size of the family. Rent was treated as an unavoidable addition and was counted in full. A family was, therefore, regarded as being in primary poverty if its income minus rent fell short of poverty line.² On the other hand, if a family whose income level can afford to purchase the necessaries for the maintenance of physical efficiency, but divert its income to other expenditures, such families will be considered as living in secondary poverty.³ These two concepts of poverty indicate that poverty arises not because of the shortfall in the family's income alone, but it may also arise due to influence of other factors like food habits, social customs, etc. In other words, while income is a necessary condition but it is not a sufficient condition to identify the poor from the non-poor.⁴

Poverty is also defined in terms of 'relative' and 'absolute' concepts. In the relative concept, the poor are identified from the non-poor by their relative position in the income scale, regardless of whether or not they have adequate income to subsist. This is normally done, according to Rowntree, by defining poverty line as the medium or some other percentiles of the overall income distribution.⁵ It seems therefore that the relative concept of poverty reflects a situation where some people have more income than others, or of economic inequality.

In the absolute concept, on the other hand, poverty is viewed with reference to a norm of subsistence needs considered appropriate to the circumstances of the country. For example, in developing countries where incomes are low, absolute poverty is reflected mainly in the inadequacy of food-intake and the consequent undernourishment on a mass scale. Whether the definition of subsistence should include other essential minimum needs such as clothing, housing, education and health etc., would depend on the degree of economic development of a

country has attained, the degree of inequality it is prepared to tolerate and above all, the socio-political attitudes reflected through popular mandate in the political process.

According to Martin Rein, poverty may be identified from three broad stand points, viz., subsistence, inequality and externality. Subsistence is concerned with the minimum provision needed to maintain health and working capacity of a person, inequality with the relative position of different income groups, and externality with the social consequences of poverty for the rest of the society rather than its effect on the poor themselves.⁶ Thus, according to Rein, poverty amongst other things causes disutility to the rest of the society. While one cannot ignore the aspect of disutility (to the community) caused by poverty, it is perhaps appropriate to note in our context that in a society where a significant proportion of people are poor at the subsistence level, importance of externality

aspect of poverty becomes secondary, its relevance at the theoretical level notwithstanding.

Townsend argues that poverty should be regarded as a general form of relative deprivation which is the effect of maldistribution of resources. He further maintains that having control over fewer resources by people -- although an important factor responsible for poverty -- does not automatically mean that they will be in poverty. They will be in poverty if the resources they are controlling do not allow them to have the type of diet, participate in activities and a living condition and amenities customary in that society.⁷ As we will see later (Chapter 9), this concept of relative deprivation has some relevance in our study.

Although conceptually poverty may be viewed from different angles, and particularly from relative and absolute angles, it may be contended that the former (relative) approach suffers from serious limitation, for it tells us little or nothing about the extent of deprivation in its physical manifestation. In the context of India where millions of men, women and children have to worry about their next meal and where poverty is manifested in the form of physical sufferings, the relative approach of poverty does not capture a collective view of deprivation. This perhaps explains why most of the studies concerning poverty in the under-deve-

developed and developing countries (particularly in India) have adopted absolute approach to poverty.⁸

However, why analysing poverty as an absolute concept, it can not deny that an element of relativity influence the absolute standard. This is because "the progress of the advanced capitalist and socialist countries has aroused expectations and led to the realisation of possibilities which may be natural to go beyond the calculus of just hunger and nutrition in estimating and analysing poverty".⁹ Absolute standard, thus becomes contaminated with notions of relativity as soon as the needs they encompass move beyond such indicators as protein and calorie intake.¹⁰ Infact, the "set of needs" in a society varies as its standard of living changes.¹¹ Thus it is appropriate to conclude that "the use of absolute standards will be more prominent in nations where much of the population suffers from severe physical deprivation. In these situations the average standard of living may be so low that (even) if one reached it we would still be the victims of serious deprivations of basic needs. As the average standard of living becomes higher, we find relativity coming more into play, either implicitly as they affect the setting of the absolute standards to be used or explicitly in designating the bottom segment of the population 'poor' even (if) the latter represents a rise in which selection of the cutting point is guided by an implicit absolute standard".¹²

Absolute Poverty: Some Practical Difficulties: Although the absolute poverty line approach is widely used in the studies of poverty in the under-developed countries yet its application is beset with certain difficulties. One of the most important difficulties is associated with the definition of a 'minimum or subsistence level of living'. The minimum or subsistence level of living is generally defined in terms of expenditure or (income) that satisfies the recommended nutritional norm. The nutritional norm is always based on the assumption that it will ensure a normal health of a person. The nutritional requirement of a person is, however a complex problem. It is a function of several variables such as age, sex, body-weight, occupation, climate, etc. It is therefore, very difficult to precisely define a unique nutritional norm. Therefore, there appears to be no consensus among the experts about the nutritional requirement.¹³

Even when one agrees on the nutritional norm, the identification of the least-cost food basket which satisfies the agreed nutritional norm is also a major problem. To be more precise, we have to identify the bundle of commodities which ensures the agreed nutritional norm. There are different combinations of this bundle of commodities having same nutritional value but each combination has different cost or price. The one with the lowest cost is supposed to be chosen and identified as the 'least-cost food basket'.

Rowntree in his study on poverty, has tried to identify such a least-cost food basket, based on his rough personal judgement. In recent times, linear programming method is being increasingly used to find out the value of the least-cost food basket. However, even this method is not free from criticism. It is said that " the least-cost diet may not conform to the prevailing consumption behaviour. Most people, and especially the poor ones, are not generally aware either of their nutritional needs or of the nutritional value of various food items. Dictates of palatability may also cause deviation from a balanced diet prescribed by rigid cost minimization. As a result, even if a person is given enough money to buy the least cost bundle, he may not in-fact do so and his nutritional needs may not be fulfilled."¹⁴

Though the prevailing consumption habit may be taken care while computing the least cost diet by introducing what is called the 'palatability constraints' in linear programming exercises, but these constraints could be performed only in a very elementary way, for instance, by excluding certain commodities altogether, or by fixing their consumption at a specific level, etc., Therefore, it is possible that a good deal of arbitrariness and personal predilection may get involved in the model.¹⁵ However, if one

assumes that the 'least-cost food basket' can be precisely found, yet one encounters another problem when he is to decide the level of income (expenditure) at which one can purchase this 'food basket' after meeting the non-food expenditures. In practice, this is being determined by multiplying the value of the least-cost food basket by the adjustment factor, which is known as the Engel co-efficient.¹⁶ But this co-efficient is only an average value of the proportion over the entire income (expenditure) range. Since the actual value of the coefficient varies across income (expenditure) classes, it will be more appropriate to use the value of the coefficient relevant to the poorer section of the population.¹⁷

It is due to these practical difficulties that some scholars have advocated for the use of relative poverty line approach.¹⁸ But as we have said earlier, in societies where poverty is manifested in the form of physical suffering, the absolute poverty line, although it is not very precise and beset with certain difficulties when one tries to put it in practice, "will do more justice to the real concern for poverty in a poor country than a well defined relative poverty line".¹⁹ Therefore, in the present study by us, although we have used the absolute poverty line, the least

cost food basket has not been identified due to the problems already stated. However, we have derived the (absolute) poverty line by regressing the per capita calorie intake per day per consumer unit with corresponding total monthly per capita consumption expenditure, using the log linear transformation of the calorie - expenditure function of the form $C = aE^b$ where C is the calorie intake per day per consumer unit, E the monthly expenditure per consumer unit, a is the intercept and b is the coefficient which shows the calorie elasticity. This has been adopted because the log transformation of calorie/expenditure compresses the distribution of calorie/expenditure at higher levels and stretches the distribution at lower levels.²⁰ Therefore, the expenditure estimated for a given calorie level is more relevant than the one derived by any other methods.

II

Measures of poverty

Determining the poverty line is not an end in itself. In fact, the next important step is the quantification of poverty, in which case poverty line forms the basis for this quantification. The 'quantification' of poverty is important because it forms the basis on which the anti - poverty policies/programmes are formulated, as well as the basis on which the success or otherwise of such policies/programmes are evaluated. In this quantification of poverty, the following measures are widely used:

1. Head-Count Ratio (H): Of the various tools of poverty measurement, the earliest and widely used method is the Head-Count Ratio, which is defined as --

$$H = \frac{q^*}{n}$$

where, q^* indicates the number of population below the poverty line, and ' n ' is the total population.

The widespread use of this measure has been inspired more by its simplicity than anything else. This measure is completely insensitive to the extent of the shortfall in income (from the poverty line) as well as to the distribution of income amongst the poor. In this regard, Sen observes "The head count ratio, despite its widespread use, is peculiarly non-discriminatory. If the poverty line is chosen to be, say, Rs 300 per year, it is completely insensitive to whether a person is earning Rs 299 or Rs 100. One might, of course, take the view that if a person's income is much below Rs 300, then he would be dead, and thus the concept of poverty line might be linked with 'subsistence'. But as the justification of the head count ratio, it is just nonsense. If Rs 300 is really a strict subsistence level such that any one enjoying less than this must perish, then the measure of poverty would always tend to be zero, those who constitute to live must earn Rs 300 or more. If, on the other hand, Rs 300 is not a strict subsistence level, then the people can survive earning less, but then one person's income can be more close to Rs 300 than that of another, and their position are not

identical. Starvation can be of various degrees and some causes more acute than others."²¹

In otherwords, this head count ratio violates the two welfare axioms which are considered by Sen to be relevant in the derivation of poverty measures. These axioms are:

(i) Monotonicity axiom: Which states that, given other things, a reduction of income of a person below the poverty line must increase the poverty measure; and,

(ii) Transfer axiom: Which states that, given other things, any transfer of income from a poor person to any one who is richer must increase the poverty measure.^{22, 23}

Despite these shortcomings, 'H' is still widely used. Its merit lies in its simplicity. Further, its implications are easy to grasp, and it does give some rough idea about the magnitude of the problem.

Criticising the head count ratio, Sen observes "it make its worthwhile for public policy-makers seeking credit for achievement in 'garibi hatao' to concentrate on people just below the level $y +$. Pushing them a little higher up brings rich dividends in terms of their poverty measures, while the credit for pushing up even the poorer people is likely to be zero in this measure unless they are pushed up quite a bit".²⁴ Thus Sen maintains that any measure of poverty should satisfy the following criteria:

- (i) We should be concerned not merely with the number of people below the poverty line but also with the amounts by which the incomes of the poor falls short of the specified poverty level; and,
- (ii) the bigger the short fall from the poverty level, the greater should be the weights per unit of that short fall in the poverty measures.²⁵

Professor Sen suggests a simple way of doing this by taking the rank values of the poor in the income ranking as the weights to be assigned on the income short falls of the different persons within the category of the poor. "If there are 'm' people with incomes below the

poverty line, then the income shortfall of the richest a weight of 1, the second richest a weight of 2, and so on, ending up with a weight of 'm' on the income shortfall of the poorest poor. This yields a measure 'p' of poverty after appropriate choice of units, etc. This has the characteristic of being sensitive to the exact pattern of the income shortfalls of the poor from the poverty line.²⁶

Sen's measure is given by

$$P = \frac{2}{(q^* + 1)nz} \sum_{i=1}^{q^*} (z - y_i)(q^* + 1 - i) \dots (1)$$

where y_i is the income/expenditure of the i^{th} unit arranged in ascending order of magnitude, q^* is the number of unit below the poverty line z , and n the total population.

The poverty measure p proposed above, however, does not satisfy the 'strong' version of the transfer axiom. This 'erroneous' assertion that P satisfied the strong version has been corrected by Sen himself in his article published the following year.²⁷

Within short period, this measure has become very popular within the academic circle. Not that many experts like Bhathy,²⁸ Seastrand and Diwan,²⁹ Alamgir,³⁰ Alluwalla³¹ among others have used this index in their studies, but it has also aroused the response of many other experts like Anand,³² Kakwani,³³ Takayama,³⁴ Thon,³⁵ and others to further investigate the validity of Sen's index. Consequently, this index has been subjected to modifications in the hand of these experts, and some of these modifications, as Sen noted, "satisfy even the strong version of transfer, but of course do not fulfil all the other axiomatic requirements used to obtain the so-called measure P."³⁶ Sen further observes that "given the complex nature of the concept of poverty, it seems reasonable to argue that no one measure will be able to capture the entire concept. There is nothing particularly defeatists in accepting some 'pluralism' and pointing to a class of measures rather than to a unique 'correct' measure of poverty."³⁷

Sen's index is claimed to be superior to other measures because it satisfies the above mentioned axioms and is sensitive to the sufferings of the poor farther away from the poverty line. If policy makers are

concerned not merely with the number of the poor but also with the distribution of poverty, clearly Sen's index is the most relevant.

Further, it may be noted that for large number of the poor, Sen's index can be written as :

$$P = H(I + (1 - I)G) \dots\dots\dots(2)$$

where,

$$I = \sum_{i=1}^{q^*} \frac{(Z - y_i)}{q^* Z},$$

$H = \frac{q^*}{n}$; and G is the Gini coefficient of the income distribution of the poor.

I can be written (on expansion and simplification) as:

$$I = \frac{q^* (Z - \bar{y})}{q^* Z} = 1 - \frac{\bar{y}}{Z} \dots\dots\dots(3)$$

WHERE \bar{y} is the mean income of the poor.

Hence, from (2) by substituting the value of I , we get

$$\begin{aligned} P &= H\left(1 - \frac{\bar{y}}{Z}\right) + \left(1 - 1 + \frac{\bar{y}}{Z}\right) G \\ &= H\left(1 - \frac{\bar{y}}{Z}\right) + \left(\frac{\bar{y}}{Z}\right) G \dots\dots\dots(4) \end{aligned}$$

From equation (4) it is evident that P depends on parameters like H, \bar{y} and G .

3. Poverty gap: Another measure which is sometimes used is the poverty gap, which measures the degree of poverty by the shortfalls of all the poor's income from the poverty line. It is given by

$$I = \sum_{i=1}^{q^*} (Z - y_i),$$

where Z is the poverty line, y_i the income/expenditure of the i^{th} poor, and $y_1 < y_2 < y_3 \dots \dots \dots < Z$. This measure satisfies the Monotonicity axiom but violates the principle of transfer. Further, it may be noted that this measure gives information on the amount needed to raise the income/expenditure of the poor to the poverty standard, but it does not tell the number of people to whom the gap applies.³⁸

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CHAPTER 3POVERTY IN INDIA: SURVEY OF LITERATURE

Poverty in India is not a recent phenomenon. Available literature claim that poverty was rampant in the country both during the pre-colonial and the colonial period.¹ The colonial rule in the country has, however, worsened the poverty of the masses.² It is only after the advent of independence particularly since 1950 when India began her march on the road of planned economic development that several policies and programmes were being attempted to raise the standard of living of the masses particularly of the weaker sections of the society. Since then, a considerable progress has been achieved by the country. The progress of the economy attracts the attention of many --- Economists, politicians, social workers and other social scientists, to evaluate the impact of the benefits of economic progress on the masses and the weaker sections in particular. It is, therefore, the objective of this chapter to resume the major findings of the important studies on poverty in rural India during the plan period. The chapter is divided into six Sections. While the Section I deals with the debate on poverty line approach, Sections II and III contain information on the estimates of poverty and the inter-State variation on the incidence of poverty. The evidences on the identity of the poor and their socio-economic characteristics are given in Section IV. Section V deals with some evidences on poverty in rural Meghalaya and the last section contains the summary of the main points emerging in the first five Sections.

I

Poverty Line

Most of the available studies on poverty in India adopted an absolute standard poverty line, expressed either in terms of per capita consumption expenditure or caloric norm.

A study group³ set up by the Planning Commission in 1962 recommended a per capita consumption expenditure of Rs.20 per month at 1960-61 prices as the socially acceptable minimum of living in India. This level excludes expenditure on health and education, both of which are expected to be provided by the State according to the Constitution and other commitments. The study group, however, has not specified what prices were used in the cost calculations of the minimum diet and what nutritional norm formed its basis. This per capita consumption level has been adopted as the poverty line in our country and many scholars have investigated the number of people living below this standard. Dandekar and Rath⁴ took into consideration the differences in the cost of living between rural and urban areas, and accordingly regarded a consumption expenditure of Rs.15 per capita per month for the rural areas and Rs.22.50 for the urban areas at 1960-61 prices as the poverty lines. Bardhan⁵ adopted a per capita monthly expenditure of Rs.15 for the rural areas.

and Rs.18 per capita per month for the urban areas -- which is lower than the one adopted by Dandekar and Rath. Minhas⁶ adopted two levels as his poverty lines. The first level of Rs.240 per capita annual consumption expenditure correspond to the one recommended by the study group and the second level of Rs.200 per capita annual expenditure is a little higher than the one used by Dandekar, Rath and Bardhan. Vidyanathan⁷ used a level of Rs.240 annual per capita expenditure -- the same level recommended by the study group of 1962 as the poverty line for the rural areas in the country.

The second group of definitions of poverty line is based on the criterion of caloric norm. Since no consensus has ever reached among the experts on the minimum per capita calorie requirement of a populations, the poverty lines laid down do vary depending on the personal preferences of the scholar concerned. These lines ranging usually between 1800 to 2400 calories per day per person. Ojha⁸ and Dandekar and Rath⁹ have taken 2250 calories per day as the minimum requirement for an average Indian. Chatterjee, Sarkar and Paul¹⁰ have taken 2400 calories per day as the minimum. Bardhan¹¹ has taken 2100 calories and 55 gms of protein per day as the minimum, the same level recommended by Patwardhan for an adult in moderate physical activity. Sukhtme,¹² Panikar¹³ and Guhathakurta¹⁴ considered 2200 calories perday per person as the cut-off point in their study. Sastry¹⁵ adopted three alternative levels, viz., 1800, 2000 and 2250 calories per capita per day as the minimum levels. The Planning Commission

also defined a poverty line on the basis of recommended nutritional requirements of 2400 calories per person per day for rural areas and 2100 calories per person per day for urban areas. ¹⁶

The use of average figure of calorie requirement as the cut-off point in the study of poverty has been strongly objected by Sukhatma. ¹⁷ On the basis of his intensive research on the relationship between the average calorie intake norm and the quantity required to prevent under-nutrition, he pointed out that there are considerable variations in the daily calorie intake and energy expenditure. The variations seen are both intra- and inter-individuals, and the efficiency of utilisation of intake varies over time in the same individual as also between different individuals of the same age-sex group. The daily requirement of individual will, therefore, vary about his true mean requirement within the range of variance typical of the generating mechanism governing energy balance in man, without implying that an individual is under-nourished whenever his intake is below the true average requirement and vice versa. ¹⁸ To quote Sukhatma:

".....most individuals in health.....will have an intake between $u \pm 2\sigma$. It follows that the proportion of individuals below the lower critical limit may be taken to represent the estimate of the incidence of under-nutrition." ¹⁹

Thus, the point raised by Sukhatme is that nutritional requirement in terms of calories can not be stated in terms of a single figure but should be formulated in terms of a range determined by a standard deviation from the mean level or single figure; and only those individuals below the lower limit of this range should be considered as under-nourished or poor.

At this stage, it is worthy to note that many economists opine that poverty studies do not concern themselves with the actual food-intake of the people, but merely fix the minimum expenditure norms in terms of the actual average expenditure level of the household which, on an average, buy sufficient amount of food and other essential non-food items. Classifying a section of the population as poor, therefore, means that these people do not earn enough to fulfill their basic requirements -- food and other essentials. This, however, does not mean that their calorie intake is necessarily below the prescribed amount. There may be some households who spend almost the entire of their income on food-items and thus get sufficient food, but fail to get other amenities. Similarly, there may be households who have sufficient income to meet the basic requirement but fail to meet the calorie requirement if their income is spent on non-food items or food items having low nutritive values.²⁰

Dandekar recently has explained that the two definitions that is, expenditure norm and calorie norm, define different, though related, concepts of poverty. To avoid confusion, "when a person is classified on the basis of a certain income or expenditure howsoever determined, provided it is sufficiently low, we are defining poverty and sorting out poor and not poor so defined. On the other hand, if we classify a population by its energy intake, we are trying to identify under-nutrition. Wants of adequate income, howsoever defined, is poverty deficiency of energy appropriately defined is un-nutrition. The two are related in the sense that statistically they go together. But the two are not identical; in fact they are two different phenomena." 21

Sundaram also expressed a similar view. "The concept of a poverty line is inherently normative and reflects a broad judgement about the minimum desirable level of living. It should not be mixed up with the nutrition status of the population. If one treats the poverty lines used by the Planning Commission as merely reflecting a set of broad judgement about the minimum desirable level of living, the estimates of the incidence of poverty so derived retain their validity as long as one is not interpreting the same as incidence of under-nutrition in the population." 22

In short, the poverty line controversy arises from inter alia, the confusion which stems from the inability to differentiate between two different, though inter-related concepts of poverty and under nutrition.

II

Estimates of poverty

Notwithstanding the poverty line controversy, we may now turn to the evidence on the magnitude and trend in the incidence of poverty in rural India. The estimates on the magnitude of poverty incidence in the country may be classified into two periods, viz., (i) during 1960-61 and (ii) post 1960-61 period.

During 1960-61, Dandekar and Rath estimated that about 40 per cent of the rural population in the country lived below the poverty line.²³ Bardhan estimated that about 38 per cent of rural population in the country lived below the poverty line.²⁴ Vaidyanathan adopting the NSS data and the official data estimated that the proportion of population in poverty at 59.5 per cent and 58.8 per cent respectively.²⁵ Ojha's estimate was that 52 per cent of the rural population lived below the poverty line.²⁶ Minhas estimated that 64 per cent of the rural population lived below the level of Rs.240 per capita annual consumption expenditure and 59.4 per cent lived below the level of Rs.200 per capita annual expenditure.²⁷ The estimates of poverty during 1960-61 in rural India thus varies from one estimate to another, ranging from a low level of 38 per cent to a high level of 59.5 per cent of the rural population in the country.

Table 3.1 : Estimates of Poverty in Rural-India

Name of the Scholar(s)/ Organisation	Definition of poverty (Rs per annum at 1960-61 prices.	Period	Percentage of Population below the poverty line.
Bardhan P.K.	180	1960-61	38.00
		1967-68	53.00
		1968-69	54.00
Dandekar V.M. and Rath N.	180	1960-61	33.00
		1967-68	40.00
Minhas B.S.	200	1960-61	46.00
		1967-68	37.10
	240	1960-61	59.40
		1967-68	50.60
Ojha P.D.	216	1960-61	51.80
		1967-68	70.00
Valayyanathan A.	240	1960-61	59.50 (NSS)
			58.80 (Official)
		1967-68	67.80 (NSS) 57.80 (Official)
Bhatty I.Z. (ICAEI)*	300 (1968-69=100)	1968-69	56.40
	360 (1968-69=100)	1968-69	67.10
Planning Commission	480 (1972-73=100)	1972-73	54.09
	741.6 (1977-78=100)	1977-78	50.82

* Bhatty used per capita income as his poverty lines.

In making estimates for the post 1961 period, several difficulties cropped up. One of the most important difficulties is the use or choice of an appropriate price indices to determine the equivalent of the 1960-61 norms for subsequent years during which prices have increased. For instance, Dandekar and Rath and Minhas used the national income deflator while Bardhan used the Agricultural Labour Price Index for capturing the rise in prices. The difference in methodology adopted by the scholars has, therefore, resulted in large divergence in the estimates of poverty for the latter years in India. Thus for the year 1967-68, Dandekar and Rath estimated that 40 per cent of the rural population lived in poverty.²⁸ Minhas estimated that 50.6 per cent of rural population lived below the level of Rs.240 per capita annual expenditure at 1960-61 prices.²⁹ Bardhan estimated that in 1967-68, 53 per cent of the rural population lived below the poverty line.³⁰ Vaidyanathan estimated that 67.8 per cent (NSS data) of rural population lived below poverty.³¹ while Ojha's estimate was 70 per cent of the rural population.³² Bhatty who based his study on the NCEAR income data found that about 70 per cent of the population in rural India were below the poverty (income) level of Rs.30 per capita per month in 1968-69.³³ The divergence in the estimates of poverty is obvious, since different scholars used different poverty lines and methodologies. It is also interesting to note

that while Minhas's estimate shows a decline in the proportion of population in poverty during the period 1960-61 and 1967-68, those of Dandekar and Rath, Bardhan, Ojha and Vaidyanathan show an increase in the proportion of population in poverty during the same period.

The Planning Commission, on the basis of a calorie norm of 2400 per day per person, estimated that the proportion of population below the poverty line in rural areas of the country during the period 1972-73 and 1977-78 was 54.09 per cent and 50.82 per cent respectively.³⁴ The proportion of population in poverty has been reported to be sliding down to a level of 40.4 per cent during 1983-84.³⁵

The estimates of poverty in rural India clearly show that poverty situation in the country has remained almost at the same level over the years. This has also been reflected in Ahluwalia's time series analysis of poverty in India.³⁶ (Table 3.2).

III

Inter-State Variation of Poverty

In this section, we give a brief review of studies on inter-State variation on the incidence of poverty, and the changes that have taken place over the years. The incidence of poverty at the State level may be estimated by adopting different alternatives such as,

Table 3.2 : Ahluwalia's Time Series Estimates of Rural Poverty Line in India.

Definition of Poverty	Period	Percentage of Rural Population below the Poverty Line
Rs.180 annual per capita consumption expenditure at 1960-61 prices	1956-57	54.1
	1957-58	50.2
	1958-59	46.5
	1959-60	44.4
	1960-61	38.9
	1961-62	39.4
	1963-64	44.5
	1964-65	46.8
	1965-66	53.9
	1966-67	56.6
	1967-68	56.5
	1968-69	51.0
	1970-71	47.5
1973-74	46.1	

Source: Ahluwalia M.S. "Rural Poverty and Agricultural Performance in India". The Journal of Development Studies No.3, April, 1978, p.289 - 292.

- (a) Use of the all-India poverty line (expenditure norm) for the States, without adjustment.
- (b) Use of the all-India poverty line, adjusted by an appropriate regional (State) price deflator.
- (c) Use of the all-India calorie norm for different States.
- (d) Use of normative methods, such as proportionate expenditure on food from the total expenditure, and
- (e) Separate estimation of the calorie requirements at regional level, considering the age, sex and activity distribution of population and the poverty line from the regional or State NSS data on consumer expenditure and associated calorie content of food by inverse interpolation method or other functional relationship.³⁷

Each of the above alternatives will give different estimates of poverty incidence, which are not, strictly speaking, comparable with each other. The studies on poverty in the country adopted different alternatives. For instance, Dandekar and Rath estimate the incidence of poverty in each State by taking a level of consumer expenditure at which a diet with 2250 calories per day per person is reached.³⁸ Bardhan estimates the incidence of poverty at the State level by using State-specific poverty line that correspond to the all-India

rural poverty line of Rs.15 at 1960-61 prices by considering regional price differential.³⁹ The Planning Commission used the all-India poverty line for all the States,⁴⁰ and Gupta et al estimated the incidence of poverty by using the all-India poverty line as well as the State-specific poverty line derived by taking into account the calorie requirement for each State and the consumer expenditure corresponding to the State calorie requirement.⁴¹

The reference period used in the different studies are also not identical. For instance, Dandekar and Rath's study provides information for the year 1961-62, Bardhan's for the period 1960-61 and 1967-68 and Vaidyanathan's for the year 1960-61. The Planning Commission provides information for the year 1972-73 and 1977-78, and Gupta et al provide information for the period 1960-61 to 1973-74 as well as for the period 1972-73 and 1977-78.⁴² The incidence of poverty for the period 1960-61 to 1973-74 has been estimated by using the all-India Poverty line; and for the year 1972-73 and 1977-78, the poverty incidence has been estimated by using the State specific poverty line.

It is difficult to get the actual State-wise incidence of Poverty from the estimates based on the all-India Poverty line. This is because the use of all-India Poverty line assumes that (a) the distribution of population on the basis of age, sex and activity is congruent to the all-India pattern; (b) age, sex and activity specific allowances are the same in all the states;

and, (c) there exists a unique and iso-cost consumption basket satisfying average calorie requirements.⁴² Therefore, in examining the incidence of poverty at the State level, we have taken only those estimates which are based on the State specific poverty line. For the early sixties, we refer to the estimates provided by Dandekar and Rath, Vaidyanathan and Bardhan. For the early seventies and late seventies, we refer to the evidence provided by Gupta et al.

The early sixties: Dandekar and Rath show that during 1961-62, in 7 out of the 15 States the proportion of rural population living below the poverty line was higher than the all-India (rural) average of 38 per cent. In descending order of poverty incidence, these States are -- Kerala, Andhra Pradesh, Maharashtra, Tamil Nadu, Assam, West Bengal and Orissa. The four poorest States -- Kerala, Andhra Pradesh, Maharashtra and Tamil Nadu registered 90.75 per cent, 62.14 per cent, 61.04 per cent and 55.19 per cent of their respective rural population as living below the poverty line. The four richest States are Rajasthan, Jammu & Kashmir, Punjab (including Haryana) and Uttar Pradesh with only 13.29 per cent, 13.60 per cent, 19.98 per cent and 18.13 per cent of their rural population respectively living below the poverty line.⁴³ Vaidyanathan's study reveals that in 1960-71, 7 out of the 15 States had a higher proportion of population below the poverty line than the national average

of 16.65 per cent. In descending order of poverty incidence, these States are Orissa, Kerela, Tamil Nadu, Madhya Pradesh, Andhra Pradesh, Uttar Pradesh and Maharashtra. The four poorest States -- Orissa, Kerela, Tamil Nadu and Madhya Pradesh registered 32.62 per cent, 23.18 per cent, 21.65 per cent and 20.64 per cent of their respective rural population as living in poverty. The four richest States are Assam, Punjab, Jammu & Kashmir and West Bengal with only 1.20 per cent, 1.23 per cent, 3.44 per cent and 6.34 per cent of their respective population living below the poverty line.⁴⁴

Bardhan's study shows that ⁱⁿ 8 out of 15 States the proportion of the population below the poverty line was higher than the all-India average of 38 per cent. In descending order of poverty incidence, these States are -- Orissa, Tamil Nadu, Madhya Pradesh, Andhra Pradesh, Kerela, Maharashtra, Uttar Pradesh and West Bengal. The four poorest States -- Orissa, Tamil Nadu, Madhya Pradesh and Andhra Pradesh registered 56 per cent, 51 per cent, 36 - 47 per cent and 47 per cent of their respective population as living in poverty. The four richest States are Jammu & Kashmir, Punjab, Assam and Rajasthan with 8 per cent, 13 per cent, 14 per cent and 33 per cent of their respective rural population living below the poverty line.⁴⁵

Table 3.3 : Percentage of Rural Population below Poverty Line (PMPL) by States According to Different Scholars, 1960-61.

State	Dandekar & Path*		Vaidyanathan - Bardhan			
	Percentage of PEPL	Rank†	Percentage of PEPL	Rank	Percentage of PEPL	Rank
1	2	3	4	5	6	7
1. Andhra Pradesh	62.14	2	18.74	5	47.0	3
2. Assam	47.67	5	1.20	15	14.0	13
3. Bihar	37.38	8	15.17	9	38.0	9
4. Gujarat and	19.09	11	8.43	11	(25 - 37)	10
5. Jammu & Kashmir	13.69	14	3.44	13	8.0	15
6. Mysore/Karnataka	26.92	9	15.22	8	34.0	11
7. Kerala	90.75	1	23.18	2	42.0	5
8. Madhya Pradesh	25.79	10	20.64	4	(36 - 47)	4
9. Maharashtra	61.04	3	15.93	7	40.0	7
10. Orissa	43.88	7	32.62	1	56.0	1
11. Punjab/Haryana	13.98	13	1.23	14	13.0	14
12. Rajasthan	13.29	15	11.24	10	33.0	13
13. Tamil Nadu	55.19	4	21.65	3	51.0	2
14. Uttar Pradesh	18.13	12	16.40	6	39.0	8
15. West Bengal	44.09	6	6.34	12	(22 - 42)	6
Total (Rural)	38.00	-	15.65	-	38.0	-

* The reference period is 1961-62.

† The State with highest incidence of poverty get a rank of 1 and the State with lowest incidence of poverty get a rank of 15.

- In Vaidyanathan's estimate, the poor is defined as population with per capita consumption of less than Rs.11 per month.

The above evidences do not provide a clear picture on the inter-State comparison of poverty incidence. However, if the States are classified into two categories, viz.,

(i) the 'more poor States' which include those States where the proportion of population in poverty are above the all-India average; and, (ii) the 'less poor States' which include those States where the proportion of population in poverty is below the all-India average the findings of the above studies are found to be more comparable. With the exception of four States -- Assam, West Bengal, Uttar Pradesh and Madhya Pradesh which are ranked differently by different authors, the rest of the States could be classified into the aforesaid two categories.

The States which fall under the first category are Kerala, Orissa, Tamil Nadu, Andhra Pradesh and Maharashtra. Those who fall in the second group are Punjab (including Haryana), Jammu & Kashmir, Rajasthan, Gujarat, Mysore and Bihar.

The late sixties; Bardhan's study shows that in 1967-68, the poverty incidence in 9 out of the 16 States in the country was higher than the all-India (rural) average of 53 per cent.¹³

These states, in descending order of poverty incidence are -- West Bengal, Bihar, Kerala, Orissa, Madhya Pradesh, Tamil Nadu, Uttar Pradesh, Mysore and Maharashtra. In the four poorest States, viz., West Bengal, Bihar, Kerala and Orissa, the proportion of population in poverty are 74 per cent, 61 - 71

per cent, 67 per cent and 64 per cent respectively. The States where the poverty incidence is lower than the all-India average are Jammu & Kashmir, Haryana, Punjab, Rajasthan, Assam, Gujarat and Andhra Pradesh. The four richest States are Jammu & Kashmir, Haryana, Punjab and Rajasthan with 21 per cent, 29 per cent, 33 per cent and 37 per cent of their respective rural population living in poverty.

Comparing the early sixties with the late sixties, Bardhan's study shows that poverty incidence increased 'significantly' in 10 States. These States are -- Assam, Bihar, Gujarat, Jammu & Kashmir, Madhya Pradesh, Kerala, Mysore, Punjab, Uttar Pradesh and West Bengal. His study also shows that only one State (Andhra Pradesh) has moved down from the rank of 'more poor States' in the early sixties to the 'less poor States' in the late sixties.⁴⁶

The early seventies: Gupta et al's study⁴⁷ provide information on the poverty incidence by States for the period 1972-73 and 1977-78. This study, unlike other studies referred to above, used the State specific caloric norm. For this purpose, the caloric norm for each State has been estimated by taking into consideration the age, sex and activity distribution of the population in each State. The poverty line corresponding to the estimated calorie level is then worked out with the application of inverse linear interpolation method to the average per capita monthly expenditure and the associated caloric content

of food-items. The percentage of population below the poverty line using this method for the year 1972-73 and 1977-78 is presented in table 3.4. The table shows that for the period 1972-73, 14 out of 20 States had more than 50 per cent of their population as poor. Of these, the four poorest States are Meghalaya, Kerala, Maharashtra and Tamil Nadu with 91.9 per cent, 87 per cent, 83.3 per cent and 79.1 per cent of their respective rural population living below the poverty line. The four richest States are Haryana, Punjab, Jammu & Kashmir and Himachal Pradesh with 18.3 per cent, 24 per cent, 27.1 per cent and 29.2 per cent of their respective rural population below the poverty line.

The late seventies: For the period 1977-78 in 12 out of 20 States more than half of their respective total rural population lived below the poverty line. The four poorest States are Meghalaya, Maharashtra, Tamil Nadu and Gujarat with 82.4 per cent, 74 per cent, 73.9 per cent and 65.4 per cent of their respective population/lived below the poverty line. The least poor States are Jammu & Kashmir, Punjab, Haryana and Rajasthan with 19.6 per cent, 21.7 per cent, 24.1 per cent and 24.5 per cent of their respective population/lived in poverty.

Comparing the 1972-73 and the 1977-78 situation, it is found that although the poverty incidence declined in almost all the States, excepting Uttar Pradesh, Himachal Pradesh and Haryana during the period, the rate of decline is marked by

Table 3.4 : Percentage of Rural Population below Poverty Line by States, 1972-73 and 1977-78.

State	Percentage of Population below Poverty line		Difference of Column 2 and Column 3
	1972-73	1977-78	
1	2	3	4
1. Andhra Pradesh	74.6	58.5	-16.1
2. Assam	73.6	56.1	-17.5
3. Bihar	61.6	52.9	- 8.7
4. Gujarat	69.1	65.4	- 3.7
5. Haryana	18.3	24.1	+ 5.8
6. Himachal Pradesh	29.2	45.0	+15.8
7. Jammu & Kashmir	27.1	19.6	- 7.5
8. Karnataka	61.2	48.8	-12.4
9. Kerala	87.0	62.3	-24.7
10. Madhya Pradesh	55.8	55.6	- 0.2
11. Maharashtra	83.3	74.0	- 9.3
12. Manipur	53.2	46.4	- 6.8
13. Meghalaya	91.9	82.4	- 9.5
14. Orissa	72.5	63.6	- 8.9
15. Punjab	24.0	21.7	- 2.3
16. Rajasthan	38.5	24.5	-14.0
17. Tamil Nadu	79.1	73.9	- 5.2
18. Tripura	68.7	58.3	-10.4
19. Uttar Pradesh	38.6	38.2	+ 3.6
20. West Bengal	73.7	53.8	-19.9

Source : Gupta S.P. et al (1983), "Measurement of Poverty : A Developer Index in Regional Dimensions of India's Economic Development", State Planning Institute, Lucknow, quoted in Bajaj J.L and Shastri C. (1985), "Rural Poverty: Issues and Option", Print House (India), Lucknow, 1985, page - 63.

extreme variation among the States. For instance, Kerala registered a decline of about 24 percentage points while Madhya Pradesh registered a marginal decline of .02 percentage points only. Further, three States -- Meghalaya, Maharashtra and Tamil Nadu remain to be the poorest States while Jammu & Kashmir, Punjab and Haryana remain to be among the least poor States in the country.

In brief, the foregoing appraisals on the findings of the several studies permit us to draw the following conclusions about the extent of poverty at the State level :

- (i) Although no two studies agree on the extent of poverty in the various States, yet they agree that poverty is more severe in some States than in other and some States figure more frequently as among the the poorest or richest States in all the studies;
- (ii) During the seventies, the poverty situation has considerably improved in some States while it worsened in others.

IV

Besides estimating the number of people below the poverty line and changes in that number overtime, it is also equally important to know the identity of these people designated as poor and their socio-economic characteristics. Regarding the identity, the different studies seem to share a common view that the poor in rural India belong to the following major groups:

- i. the small farmers owning a small parcel of land -- generally less than 5 acres and particularly less than 2.5 acres;
- ii. the landless agricultural labourers; and,
- iii. the rural artisans like weavers, blacksmiths, potters, etc. who are progressively thrown out of their traditional employment.

Most of the studies on the all-India context of poverty confined themselves only to the estimates of poverty incidence and a broad identification of the poor. Information on (other) socio-economic characteristics of the poor such as family size, dependency ratio, participation rates, educational attainments, employment, etc. are, therefore, not available in these studies. However, such information are available from studies of poverty at the regional and State levels.

Visaria⁴⁸ using the unpublished data from the 27th round of the NSS in Gujarat and Maharashtra, has analysed the characteristics of the decile groups based on monthly per capita consumption expenditure (MPCE). The characteristics considered are occupational status, demographic features, educational attainment and employment. His investigation reveals that the agricultural labour households account for 30 to 40 per cent of the households below the poverty line in the two States. Cultivators constitutes 40 per cent of the poor households in Maharashtra and 53 per cent in Gujarat.⁴⁹ These households are mostly those who have land holdings upto 5 acres. The casual labourers are most affected by poverty and their proportion in total work-force of a household is inversely related with the size of land holding.⁵¹

Regarding the demographic features, his analysis reveals that the households with a higher monthly per capita expenditure have a smaller household size.⁵² On the population dependency ration which is defined as the ratio of persons in age-groups (0 - 14) and (60 +) to the age group (15-59), it is found that it varies inversely with the per capita household expenditure.⁵³ His analysis also shows that the proportion of workers to total workers is relatively higher among the lower decile groups of monthly per capita expenditure than in the higher deciles. This implies that the participation rates among the poor households is higher than among the non-poor.⁵⁴

As to the educational attainment, Visaria's analysis reveals that although there is a general tendency for the proportion of the illiterates to vary inversely with the per capita consumption expenditure, "on the whole literacy seems to be spreading even among the bottom deciles."⁵⁵

On the relationship between MPCE and the incidence of unemployment, Visaria's analysis reveals a more or less steady inverse relationship between the two. "Except for some erratic deviations, the labour force in the bottom deciles of households clearly suffer from a significantly higher incidence of unemployment and/or under-employment,.....although poverty is more widespread than unemployment, there is a clear association between the two. The poor did report non-availability of opportunities for work to a considerably greater extent than the average level in two States."⁵⁶

Another study by Thimajah on inequality and poverty in Karnataka also provides information on socio-economic aspect as religion, caste, education and occupation and their interaction with inequality and absolute poverty. His main findings relevant to the context of our study are summarised below :-

- i. Poverty is very high among the Muslims and the Scheduled castes and scheduled tribes;
 - ii. It is very high among the illiterates and very meagrely among the educated people;
- and
- iii. In the rural areas, poverty is confined to agricultural labourers, marginal and small farmers.⁵⁷

Sastry, in his study in Andhra Pradesh also found that poverty incidence is higher among the Scheduled Caste Scheduled Tribes and Agricultural Labourers compared to the over-all regional incidence. The incidence of poverty is the maximum among the agricultural labourers whether the comparison is intra-regional or inter-regional. In an intra-regional comparison of the incidence of poverty among cast groups, "the maximum sufferers are the Scheduled Tribes whatever may be the poverty line we choose and the method of measurement we adopt."⁵⁸

In briefⁿ, the available studies on poverty in the country reveal that the poor in the rural areas belong to the marginal and small farmers, landless Agricultural Labourers, and rural artisans. By castes groups, it is more widespread among the Scheduled Castes and Scheduled Tribes. The poor are, in general, characterised by a relatively larger family size, higher population dependency ration, illiteracy and low educational attainment, high participation rates in economic activities and high level of unemployment.

Poverty in Rural Meghalaya

Gupta et al have calculated the caloric norm for each State by taking into consideration the age, sex and activity distribution of population in each State. For the rural areas of Meghalaya, the caloric norm per day per person has been arrived at 2480 in 1972-73 and 2481 in 1977-78.⁵⁸ The poverty line in terms of monthly per capita consumption expenditure corresponding to the above norms has been estimated at Rs.75.48 for 1972-73 and Rs.78.50 for 1977-78, both at current prices. On the basis of these poverty lines, it is found that 91.9 per cent and 82.4 per cent of the rural population in the State lived in poverty during 1972-73 and 1977-78 respectively.⁵⁹ Their finding also shows that Meghalaya is the poorest State in the country for both the period 1972-73 and 1977-78.

The State Government (Meghalaya) has also estimated the proportion of population living in poverty for the period 1977-78 and 1983. Following the all-India caloric norm of 2400 calories per day per person for the rural areas, the poverty line in terms of monthly per capita consumption expenditure has been calculated at Rs.74 in 1977-78 and Rs.125 in 1983. These poverty lines are higher than the all-India poverty lines because of much higher price level in the State. On the basis of these poverty lines, the proportion of the poor in the rural areas of the State has been estimated at 74 per cent in 1977-78 and 64.75 per cent in 1983.⁶⁰

A recent study undertaken by Guhathakurta which is based on a field study of ten villages in East and West Khasi Hills in Meghalaya in 1979 provides information on the extent of poverty and the relationship between poverty on other variables in Khasi Hills. This study adopted two criteria in measuring the proportion of people below the poverty line; one was on the basis of monthly per capita consumption expenditure and the other on the basis of per capita daily food consumption.⁶¹ Under the first criteria, a monthly per capita consumption expenditure of Rs.80.60 at current prices has been taken as the minimum level, while under the second criteria, a daily per capita calorie intake of 2200 has been taken as the minimum level.⁶²

On the basis of the first criteria, it is found that 73 per cent of the population in Khasi Hills lived below the poverty line⁶³ while on the basis of the second criteria, 54.75 per cent lived below the poverty line.⁶⁴

On the relationship between poverty and other variables, the study reveals a strong positive relationship between per capita calorie intake and per capita monthly consumption expenditure, whereas the per capita calorie intake and land sizes owned by the individual households shows a negative (although statistically not significant) relationship. Further the relationship between per capita monthly expenditure and land holdings of a household has been found to be positively correlated.⁶⁵

On the inter-village comparison of infra-structural facilities like road, transport and communication, co-operative societies, educational institution, health services etc. the study reveals that differences in the infra-structural facilities is not reflected in the magnitude of poverty.⁶⁶

Regarding the relationship between unemployment and poverty, the study shows that in 6 out of 10 villages surveyed, the relationship between the two is positive. Of these 6 villages 5 villages are situated relatively far away from urban contact. The remaining four villages where the relationship has been found to be inverse are having relatively better contact with urban areas because of transport and communication facilities.⁶⁷

VI

SUMMARY

The main points which emerge from the foregoing survey of studies on the evidences of poverty incidence in rural areas of the country are as follows :-

- i. Most of the studies on poverty in the country adopted an absolute standard poverty line, expressed either in terms of per capita consumption expenditure or caloric norms. While the level of expenditure adopted ranges between Rs.15 to Rs.20 per month at 1960-61 prices for the rural areas, the caloric intake level usually ranges between 1800 to 2400 calories per day per person;
- ii. The use of average figure of calories intake as the cut-off point in the study of poverty has been a subject of controversy because of intra-and inter-individual variation in the daily caloric intake and energy expenditure. However, this controversy has been shown to arise because of the confusion or inability to differentiate between two different, though inter-related, concepts of poverty and under-nutrition;

- iii. The estimates of poverty in rural India, though vary from one study to another, clearly shows that poverty situation in the country is of a very high magnitude and this situation has remained almost at the same level over the years;
- iv. Although no two studies agree on the extent of poverty in the various States, yet they agree that poverty is more severe in some States than in others, and some States figure more frequently among the more poor or less poor States in all the studies;
- v. During the seventies, the poverty situation has improved considerably in some State, while it worsened in others.
- vi. The poor in the rural areas generally belong to the marginal and small farmers, landless agricultural labourers, and rural artisans. By caste groups, poverty is higher among the Scheduled Castes and Scheduled Tribes. The poor are, in general, characterised by a relatively larger family size, higher dependency ratio, illiteracy and low educational attainment, high participation rates and high level of unemployment;

vii. There is a relative absence of studies of poverty in the rural areas of Meghalaya and therefore, not much is known about the identity and socio-economic characteristics of the poor in the State. The study by the present investigator seeks to fill in this gap by examining several issues related with poverty.

APPENDIX TABLE TO

CHAPTER 3

Table 3.A : State-wise Distribution of Rural Population below the Poverty Line in 1977-78.

Sl. No.	States/Union Territories	Percentage of Population below the Poverty Line.
1.	Orrissa	68.97
2.	Tripura	64.28
3.	Madhya Pradesh	59.82
4.	West Bengal	58.94
5.	Bihar	58.91
6.	Maharashtra	55.85
7.	Tamil Nadu	55.68
8.	Meghalaya	53.87
9.	Assam	52.65
10.	Uttar Pradesh	50.23
11.	Karnataka	49.88
12.	Kerala	46.00
13.	Andhra Pradesh	43.89
14.	Gujarat	43.20
15.	All Union Territories	34.32
16.	Rajasthan	33.75
17.	Jammu and Kashmir	32.75
18.	Manipur	30.54
19.	Himachal Pradesh	28.12
20.	Haryana	23.25
21.	Punjab	11.87
All - India (Rural)		50.82

Source: Sixth Five Year Plan, 1980-85, Planning Commission, Annexure 1.12 page - 16.

Note:- The above estimates are derived by using the All-India Poverty Line of Rs.65 per capita consumer expenditure per month in 1977-78 prices, corresponding to a minimum daily calorie intake of 2400 per person.

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CHAPTER 4

THE STUDY AREA

I

The State

Meghalaya, a state in north-eastern region of India, comprises of formerly United Khasi and Jaintia Hills and Garo Hills districts of Assam, and attained its full fledged statehood of the Indian Union in January 21, 1972. The state covers an area of about 22,549 sq. kms. It is bounded on the north and north-east by Assam and on the south and south-west by Bangladesh. The state has an international boundary of about 496 kms. Topographically, the state can be divided into three physical features, viz., i) the Central Plateau (or the Uplands) which forms the highest region in the state between 900 to 1800 metres above the mean sea level, ii) the Southern Slope (which also forms the border areas of the state) which drops abruptly from the Central Plateau and is generally very steep, and

iii) the Sub-mountain region comprising the milder slope in the north which gradually descends towards the plains of Assam.¹ According to the 1981 census, the state has a population of about 13.28 lakhs, with a density of 59 persons per square kilometre. The population in the state comprises mainly of two tribes, viz., the Garos and the Khasis (including the Jaintias), which together accounted for about 80 per cent of the total population in the state. The non-tribal population is composed mainly of Bengalis and Nepalis -- many of them are immigrants from the neighbouring country of Bangladesh and Nepal respectively.

The state is potentially rich in natural resources -- land, forest, minerals and power resources. The data on land utilisation in the state shows that during 1981-82, out of the total area of 22,48,900 hectares, 36.1 per cent are under forest, 14.04 per cent are land not available for cultivation, 27.41 per cent are other uncultivated land and 13.86 per cent are fallow land.² Forest resources include a large number of timber species like sal, cham, pine, teak, agar, poma, bamboos, etc. The important mineral resources are coal, limestones, silimanite, clay, etc. The total known coal reserves in the state have been estimated at 630 million tonnes and of limestones at about 483 million tonnes. The silimanite corundum deposits in the Sonapahar area of Khasi Hills are reported to

be of the best quality in the world. The reserves of clay which can be used for various industrial purposes including manufacturing of pottery are estimated to be of 71 million tonnes. The other deposits occurring in commercially exploitable quantities include kaolin, feldspars, glass sands, etc.

The heavy and prolonged rainfalls, topography and the turbulent nature of the streams and rivers in the state provide immense opportunity of utilising the water resources of the state for generating hydro-electric power on a large scale. It may be noted that the present installed totalled capacity capacity of power in the state is about 126.7 M.W.³

Though potentially rich in resources, yet the state is economically backward. Its backwardness is reflected not only in terms of a conventional indicator — that is, per capita income, but is also reflected in many other socio-economic indicators, as summarised in table 4.1. It is evident from the table that "the state is extremely backward judged from most of the accepted indicators of economic development",⁴ compared to the all-India level. The backwardness of the state is explained by several factors such as natural, political, sociological and economic factors. Of the economic factors, the practice of shifting cultivation and the resultant soil erosion, lack of technical knowledge, shortage of capital, inadequate infrastructure for development are some of the

Table 4.1 : Selected Economic Indicators for Meghalaya and
All- India.

Sl. No.	Indicator	Reference year	Meghalaya	All-India
1.	Population in lakhs	1981	13.3	6838.1
2.	Density per sq.km.	1981	59	221
3.	Rural population as percentage of total population.	1981	82.0	76.3
4.	Scheduled tribes as percentage of total population.	1981	81.0	8.0
5.	Literates as percentage of total population.	1981	33.3	34.8
6.	Workers as percentage of total population.	1981	44.20	32.5
7.	Cultivators as percentage of total workers.	1981	63.5	41.5
8.	Agricultural labourers as percentage of total workers.	1981	9.9	25.2
9.	Non-agricultural workers as percentage of total workers.	1981	26.6	33.3
10.	Cultivated area as percentage of total area.	1981-82	9.95	43.5
11.	Gross irrigated area as percentage of total net sown area.	1979-80	26.31	33.66 (1978-79)

(.....Contd. next page.)

Table 4.1. (Contd.)

Sl. No.	Indicator	Reference year	Meghalaya	All-India
12.	Yield per hactare of rice(in Kgs)	1978-79	1224	1328
13.	Percentage of villages electrified	1981	19.93	47.1
14.	Per capita consumption of electricity (industrial)	1976-77	17.8	68.4
15.	Per capita value added by large scale manufacturing sector (factory sector) (Rs)	1976-77	24	119
16.	Gross industrial output per capita (Rs)	1975-76	58.0	499.5
17.	Industrially backward districts as percentage of total districts	1978-79	100.0	64.53
18.	Length of metalled road per 1000 sq.km.	1978-79	66	189.6
19.	Per capita bank credit	1976	33	191
20.	Per capita state income (SDP at current prices)	1984-85	1658	2616
21.	Percentage of population below poverty line (according to all-India poverty line)	1983-84	64.75	37.4
22.	Index of infrastructural development.	1977-78	64	100

Source: Compiled from Government publications.

important factors responsible for the backwardness of the state. In addition, the small size of Meghalaya's villages is also an important factor for the backwardness of the state. A recent study observes that the small size of the villages in Meghalaya "... is not a viable unit as it does not contain the area and population base necessary for integrated development. Leaving aside other reasons, even on this ground (that is, the small size of the villages) it is difficult to provide even some basic infrastructure for rural development. Thus, it may be difficult task to bring about either full-employment, distributive justice and elimination of poverty or a provision of minimum developmental and welfare services or productive application of science and technology in every small size village as the units for development".⁵ Thus before we go into the study of poverty in the border areas of the state, it is worth bearing in mind that the state of Meghalaya is on the whole a backward state in the country, and its economic development is subjected to several constraints.

II

The Border Area and Its Economy

This area is generally known as a relative ly more backward area in the state. It is broadly defined as " territory to the depth of 10 km inside the state from the international border with Bangladesh, comprising the southern slopes and the adjoining strips of the state and laterally running about 496 km from Dana Malidhar area in the Jaintia Hills to Mahendraganj in West Garo Hills and northwards for some distance to Mancachar".⁶ It covers a land surface of about 4,960 sq.km with a population of about 2.50 lakhs, which is about 22 per cent of the total area and about 19 per cent of the state's total population in 1981. The following criteria were taken in demarcating the border area:

- i. Distance from the border;
- ii. Degree of economic development; and,
- iii. Dependence upon border trade with the country now known as Bangladesh.⁷

After taking into consideration the above criteria, a number of villages which lie outside the 10 km belt have also been included as border villages. According to the revised list

of border villages, out of 4902 villages in the state, 1581 are in the border areas. Of these, 908 are in East and West Garo Hills, 551 in East and West Khasi Hills and 122 in the Jaintia Hills.⁸

Topography: The border areas, especially of the Khasi and Jaintia Hills, is characterised by a highly irregular feature. In the places where it starts (that is, in the places where the Central Plateau ends), it is more or less a continuation of the plateau up to a few kilometres with interruptions here and there caused by sudden drops and depressions. As it recedes further nearer to the border of Bangladesh, the sudden drops become more and more prominent till they abruptly end up in sheer precipices. From the foot of the precipices the area continues for some distance of a few kilometres in the form of a vast stretch of flat lands till it merge itself with the border of Bangladesh. It is to be noted that along the border areas of Garo Hills, there are no sudden drops, depressions or precipices.⁹

Climate and rainfalls: The climatic condition in the areas does vary from place to place depending on the elevation and location of the place. In the places where the central plateau ends, the climate is pleasant but as one moves towards the border of Bangladesh the climate becomes hot.

This region, especially in Khasi Hills, receives the maximum of rainfall in a year. The Pynursla-Cherrapunjee-Mawsynram rainfall belt lies in this area.¹⁰

Agro-climatic condition: Cultivation in the area is confined mainly to arecanut, bay leaf, betel leaf, oranges, pineapples, jack fruits, and other plantation fruits. Besides these crops, jute (in Garo Hills) banana and other cash crops like maize, millets, soyabeans, potato and other minor crops are also cultivated in the area. Paddy is extensively cultivated in the plain tracts bordering with Bangladesh. It may also be noted that the cultivation of bay leaf in the state is confined in this area.¹¹

The Border Economy: During the pre-partition period, the border villages were considered to be totally isolated from the rest of the country. The people living in this area did not nor perhaps required to have economic relationship with people living in the uplands. They depended much on trade relation with the people of the Sylhet and Mymensingh districts, now in Bangladesh. Their produce like oranges and other fruits, beside limestones and timbers, were exported to these districts, and in return, they were supplied with essential commodities like foodgrains, salt, fishes, edible oils, kerosene and other essential items.¹²

The pre-partition period was termed as 'the golden age of trade'. It was a time when oranges and arecanut plantations were most carefully maintained and out of which the maximum produces were obtained and the best quality fruits were produced.¹³ It was reported that in 1828 the Khasi gardens supplied almost the whole of Bengal with oranges.¹⁴ In the pre-partition days, this was the richest region in the Khasi and Jaintia Hills mainly because of its trade relations with the districts now in Bangladesh.¹⁵ "Border trade generated unimaginable wealth for the people of Shella village and adjoining villages. The impact was so deep seated that the people of the region were considered somewhat divorced economically and culturally from their brethren living in the uplands and on the higher parts of the slopes".¹⁶ It may be noted that although the great earthquake of 1897 has brought "great havoc in the fields, and more specially in the orange and arecanut groves of Shella and other villages near the southern edge of the hills"¹⁷ which thus hampered the economy of the border villages in general and Shella village in particular, it could not rob the area of its opulence.¹⁸ This indicates that the presence of free trade in the area enabled the people to overcome even some adverse effects of natural calamity like earthquake.

The partition of the country in 1947 resulted in the blockade of trade with the adjoining districts of Sylhet and Mymensingh. The closure of trade caused untold sufferings to the people in the area. It was a sudden fall from a period of prosperity to a period of depression. Their produce had no markets and the people were threatened with food scarcity and starvation which thus compelled the people to feed themselves with wild vegetables and roots.¹⁹

"The whole economy of this region was completely shattered, and the countryside which once hummed with activity and abundance was over-shadowed with unemployment, poverty and despair".²⁰ The villagers had to abandon their well-maintained groves and plantations, and some families left their homes and relatives to be rehabilitated at Nongpoh and Byrni on Gauhati - Shillong road side and at other places in the state where they started new fruits plantations.²¹ It took a very long time for the people to revive again their groves and plantations, and uptill now, it still seems to be a distant goal for them to reach the level of pre-partition prosperity.²²

Governmental efforts to restore the border economy: In order to restore the border economy, several measures were attempted by the government. One of the earliest (experimental) measure was an air-lifting of oranges from Shella to Calcutta in the early fifties. However, the air-lifting proved to be inadequate and failed to cover even an appreciable fraction of oranges produced in the area. Even this was discontinued after few years of operation, as a result of which the border producers were left to the mercy of Pakistani traders "who became the beneficiaries of the distress sales prompted by a sense of helplessness which had overtaken the growers".²³

Since the beginning of planning era in the country, it has been realised that development of communication (transport) is a pre-requisite condition for restoring the economy of the border areas. This is obvious, because the produce of the area which used to flow southwards to Sylhet and Mymensingh have to be diverted northward to Shillong and then to the plain of Assam and other areas in the country. Despite this necessity, nothing much could be achieved. The road construction in the border areas has been extremely slow. For instance, the Committee appointed by the government of Assam in 1958 observed that "the first Five Year Programmes of roads had not been fully completed. So far as the Second Plan roads are concerned the Committee were perturbed to learn from the Chief Engineer that even

the survey thereof had not yet commenced. Thus the road programme though well conceived and holding out the greatest promise for the relief of the border areas, has been extremely slow in implementation thereby postponing the day on which the border people may expect concrete relief".²⁴ It may also be noted that the Shella - Pandu ropeway and the Shella-Gauhati ropeway which were mentioned in the third and the fourth five year plans of the then composite Assam, and again taken up by the North Eastern Council for its construction is never materialised.²⁵

The creation of Meghalaya as a full-fledged state on 21st January 1972 opened new hopes for the people of Meghalaya in general and the people living in the border areas in particular. The government attempts not only to bring an all-round development in the state, but also "seeks to make special effort for rehabilitation and upliftment of the economy of those people living in the border areas by providing for accelerated progress of development in communication, cash crops, marketing and social services".²⁶ In an effort to uplift the economy of the border areas, the government feels that the development programme in the area has to be taken up on both short-term and long-term basis. The main strategy in regard to development of the area is summarised as follows:

- a) Emphasis on the development of road communication in the border areas for connecting these areas with the rest of the state in order to achieve diversification of channels of trade.
- b) Emphasis on the improvement of horticultural crops in the border areas, supply of necessary inputs including technology and research.
- c) In order to make the economy of the border areas self-reliant due emphasis to be given for cash and foodgrains crops.
- d) For (b) and (c), adequate emphasis was given for irrigation facilities.
- e) Extending cultivation in new areas.
- f) For diversifying the economy necessary emphasis for development of animal husbandary, etc. ²⁷

Tables 4.2 and 4.3 indicate the special effort made by the government to uplift the economy of the border areas. It becomes apparent from the tables that the area as a whole has not received adequate attention in terms of allocation of financial resources for its socio-economic development. As we have seen (in section II) earlier, the state's border areas cover as much as 22 per cent of the state's area and about 19 per cent of her population. As against this, the proportion of expenditure earmarked for different sectors seems inadequate. Secondly, even such inadequate provision was not fully spent which thus shows "lack of

Table 4.2 : The Plan Out-lays and Expenditure for Border Areas in Meghalaya.

(Rs. in lakhs)

Plan Period	Out-lays	Expenditure	Shortfall of expenditure
Fourth Plan period	50.00 (1.31)	39.00 (1.04)	11.00
Fifth Plan period	554.18 (3.94)	523.50 (3.99)	30.68
Sixth Plan period	1000.00 (3.79)	939.04 (3.59)	60.96

Note: Figures in parentheses are percentages to the state* total plan outlays/expenditures.

Source: Meghalaya, Govt. of (1981), "Five Year Plan, 1980-85", Vol. II.

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Vol. I.

Planning Department, Shillong.

Table 4.3: Percentage Shares of Different Sectors to Total Expenditures on Border Areas Development, Meghalaya.

Sectors	Fifth Plan Period	Sixth Plan Period
1. Agriculture	5.78	4.76
2. Animal Husbandary & Veterinary	2.80	4.04
3. Education	13.48	20.22
4. Co-operation	10.60	13.80
5. Supply (Transport Subsidy Scheme)	4.81	5.43
6. Soil Conservation	0.81	1.21
7. Road Scheme (PHD)	31.65	27.93
8. Watter Supply (PHE)	12.25	5.70
9. Industries	1.45	1.17
10. Sericulture & Weaving	2.06	3.28
11. Fisheries	1.50	1.05
12. Border Areas Development Department	12.81	9.03
13. Others	—	2.37
Total	100.00	100.00

Source: Computed from Government publications.

effective involvement on the part of the operating units".²⁸ Thirdly, the sectoral allocation of funds shows that although highest priority was given to the development of road transport, but other important sectors like agriculture, animal husbandary, fisheries and industries received insufficient attention. As a result, the programmes undertaken failed to make a serious dent on poverty and mitigate the economic insecurity in the area. The fact remains that the people who were once the most affluent in the state are even now living in conditions overshadowed with poverty and despair.

Our field investigation on the economic conditions of the villages of Shella and its neighbourhood reveal that the governmental effort to uplift the economy of the area has failed to bring significant improvement. For instance, agricultural practice in the area is still primitive. The orange groves are thinning and disappearing, and the yield from arecanut plantations are declining. No lands are irrigated and agriculture depend on the mercy of the moonsoon. No industries of importance are located in the area despite the fact that the area is bestowed with abundant resources. The area as a whole is not having even a single important high school and most of the villages are yet to be provided with primary school. The health facilities in the area are very inadequate. The area is yet to be provided with Public Health Centre (PHC) although the number of PHCs in the state is presently about 30. Similarly, the availability of other amenities in the area is very scanty.

III

The Selected Villages

It is in this border areas of Khasi Hills (Meghalaya) that the village SHELLA is situated. It is approximately about 90 - 95 km south of Shillong and about 40 km south of Cherrapunjee. Shella village is a cluster of several scattered hamlets (or census villages), namely

(1) Nongnong, (2) Ryngsongkatonor, (3) Nongrum, (4) Mawryngkhong, (5) Jamew, (6) Jasir, (7) Duba, (8) Disong, (9) Sohlap, (10) Mawpud-Umdoh, (11) Pyrkan, (12) Khahmohi-khadar, (13) Shken, (14) Kalorkhah, (15) Lumpukhri, (16) Kalatek, (17) Umkhabaw, (18) Umsaw, (19) Dalia, (20) Umtham and (21) Khahsyndha. These hamlets taken together are administratively recognised as a single village -- Shella.

The inhabitants in the first eleven hamlets are mainly Khasis who are the first settlers of the village. In the rest of the hamlets the majority of the settlers are non-Khasis composing of two important communities, viz., Bengalis and Garos. As mentioned earlier, the Khasis own and control all the village resources while the non-Khasis have no rights at all to the village (or common) properties. They are also customarily not entitled to own land asset. As a result,

the economic conditions of the Khasis are most likely to differ from the non-Khasis. Therefore, for the purpose of this study, the village is stratified into two groups :

(i) group-A hamlets composed of the first eleven hamlets

which are inhabited mainly by the Khasis, and (ii) group-B composed of all other hamlets which are not in group-A and inhabited mainly by the non-Khasis.

Population size : According to the 1981 census, the village consists of 934 households with a total population of 4636. Of this, 1886 are in group-A hamlets and 2750 in group-B hamlets. The population in the village increased by nearly 32 per cent during the period 1971 - 81, which is just marginally higher than the state population growth of 31.25 during the same period. Hamlet group-wise, the decadal change of population is as high as 66.46 per cent in group-A hamlets while the corresponding figure in group-B hamlets is as low as 16.82 per cent. This abnormally high change of population in group-A hamlets seems to be due to the under-enumeration in 1971 census. It may be noted that during the 1971 census five hamlets (or census villages) were not recorded. If these five hamlets were omitted while calculating the change of population during 1971 - 81, the decadal change of population stood at 16.95 per cent in group-A hamlets and 13.85 in the village as a whole. Such a low rate of population in the village is plausibly due to high rate of out-migration of the people to the urban areas and other villages.

**Table 4.4: Population Size by Sex and Hamlet-Groups,
1971 - 81.**

<u>Year</u>	<u>Males</u>	<u>Females</u>	<u>Persons</u>
<u>Group-A Hamlets</u>			
1971	585	548	1133
1981	951	935	1886
% change (1971 -81)	62.56	70.62	66.46
<u>Group-B Hamlets</u>			
1971	1204	1150	2354
1981	1314	1436	2750
% change (1971 -81)	9.14	24.87	16.82
<u>Groups (A + B) Hamlets</u>			
1971	1789	1698	3487
1981	2265	2371	4636
% change (1971 -81)	26.61	39.63	32.95

Source: Census records, 1971 and 1981.



Population composition: The social and demographic characteristics of any area are to a large extent influenced and affected by the historical development, and this village is no exception. The closure of border trade in 1947 following partition has compelled the people to abandon their groves and plantations and as an alternative, introduce paddy cultivation in order to meet their foodgrains requirement. Being not acquainted with paddy cultivation, the villagers had to get the work done by the non-Khasis who migrated from across the border. The employment opportunities available in the village, and their feeling of insecurity due to political development in their home country, tends the labourers who migrated for seasonal agricultural operations to end up as permanent migrants and settlers in the village. However, their settlements were confined in and around the paddy-fields, where work was offered for them. The immigration was not confined to Hindu Bengalis only. A large number of Garos also immigrated to the village. They supply the village with cheap labour both for agricultural and non-agricultural operations.

The data available from the census records do not permit us to give a direct evidence on the composition of population by communities at the village level. The information is available only with respect to the distribution of population by scheduled castes/tribes and non-scheduled castes/tribes. If it is assumed that all scheduled tribes population in group-A hamlets belongs to the Khasi community and

Table 4.5: Distribution of Scheduled Tribes and Non-Scheduled Tribes Population, 1981

Hamlet group	Scheduled tribes	Non-Scheduled tribes	Total population
A	1572 (83.35)	314 (16.65)	1886 (100.00)
B	2008 (73.02)	742 (26.98)	2750 (100.00)
(A + B)	3580 (77.22)	1056 (22.78)	4636 (100.00)

Source: Census records, 1981.

all scheduled tribes in group-B hamlets belongs to Garo community and the rest (non-scheduled tribes) of the population belongs to Bengalis and other communities, of the total population of 4636 in 1981, about 34 per cent belong to the Khasi community (the indigeneous tribe), 43 per cent to the Garo community and about 23 per cent to the non-tribal population, consisting mainly of Bengalis. However, taking only group-A hamlets, the proportion of Khasis to the total (group) population is about 83 per cent. The non-tribals (about 17 per cent) in this hamlet group are confined mainly at two places, viz., Sohlap (Shella bazar) and Pyrkan. It is also important to note that in group-B hamlets the Garos constitutes about 73 per cent of the total (group) population. The non-tribals in this group of hamlets concentrate mainly at Kalatek while the rest of the hamlets are pre-dominantly Garo inhabited.

Literacy and educational level: According to the census record of 1981, the literacy rate for the village was 22.67 per cent only, which is thus much lower than the district level (42.60) and the state level (33.21). The census also shows that the male literacy rate (29.05) is higher than the female literacy rate (16.57). Hamlet-wise, the literacy rate in group-A hamlets (39.13) is much higher than in group-B hamlets (11.38). Further,

the census data show a big variation in literacy rates between males and females in both the hamlet groups. For instance, the variation between males and females is about 10.57 percentage points and 12.60 percentage points in group-A and group-B hamlets respectively.

Comparing with the 1971 census level, it is noted that the percentage of literacy in the village has remained more or less at the same level during the seventies. Hamlet-wise, the literacy in group-A hamlets has gone down from the level of 52.69 in 1971 to 39.13 per cent in 1981, whereas in group-B hamlets the literacy has gone up from the level of 7.65 in 1971 to 11.38 per cent in 1981. The sample data collected by the present investigator, however, shows that the literacy level in the village has gone up during the period. In group-A hamlets the literacy rate was 65.14 per cent and in group-B hamlets, it was 12.29 per cent. Again, the sample data show no significant difference between males and females literacy rate in group-A hamlets, while it shows a significant difference in group-B hamlets.

Table 4.6 : Literacy Rates According to 1971 and 1981 Censuses.

	1971			1981		
	Persons	Males	Females	Persons	Males	Females
Group-A hamlets	52.69	58.63	46.35	39.13	44.37	33.80
Group-B hamlets	7.65	12.38	2.70	11.38	17.96	5.36
Both hamlet groups	22.28	27.50	16.78	22.67	29.05	16.57

East Khasi Hills*	33.46	37.11	29.57	42.60	45.73	39.28
Meghalaya	29.49	34.12	24.56	33.21	36.98	29.28

Source: Census records, 1971 and 1981.

* The figures for 1971 relates to the United Khasi & Jaintia Hills.

On the educational level, the sample data reveal that the bulk of the literates belong to the lowest category of education, viz., primary and middle schools level. In group-A hamlets the literates with primary and middle school levels constituted about 82 per cent of the total literates, while those with high school and college level constituted about 13 per cent and 5 per cent respectively. In group-B hamlets, the literates with primary and middle school levels constituted about 97 per cent and those with high school level constituted about 3 per cent only. None of the literates in group-B hamlets reported to have attained any education beyond the high school level.

A higher literacy rate in group-A hamlets than in group-B hamlets is possibly due to the existence of educational facilities in the former as well as the feeling of the parents that their children could be freed from poverty and casual employment in the village if they are educated and thereby employed in government services. However, it is noted that school facilities

Table 4.7: Literacy and Educational Levels, 1983.

Literacy/Educational Level	Group-A Hamlets			Group-B Hamlets		
	P	M	F	P	M	F
1. Percentage of Literates	53.80	58.78	49.72	11.11	16.24	5.36
2. Of whom:						
a) literates upto primary level.	62.32	58.00	67.16	89.19	89.47	88.24
b) literates upto middle level.	20.07	24.67	14.94	8.11	7.02	11.76
c) literates upto high school level	12.68	13.33	11.94	2.70	3.51	---
d) literates upto college level.	4.94	4.00	5.97	---	---	---
Total(a - d)	100.00	100.00	100.00	100.00	100.00	100.00

Note: 'P' stands for Persons, 'M' for Males and 'F' for Females .

are not only inadequate but also unevenly distributed among the hamlets. Of the 11 total primary schools and 1 middle school available in the village, only 3 primary schools are located in group-B hamlets, and the rest are in group-A hamlets. Students wishing to pursue their education beyond the primary and middle level have to attend schools at Cherrapunjee, Shillong and other places. It is therefore obvious that students coming from the poor families can rarely go beyond what is locally available for them, unless relatives or any religious groups lend a helping hand for them for pursuing education out side their own village.

Ammenities : In addition to school facilities mentioned above, other infrastructural facilities available in the village include the branch of a nationalised bank, viz., the United Commercial Bank, a dispensary, a bi-weekly market, electricity and a branch post office. Some government offices are also located at this village, viz., the Forest Beat House, the Custom & Central Excise, a Veterinary field assistance office, and others. Again, it is to be mentioned that most of those amenities available in the village are confined in group-A hamlets. (see table 4.8)

Table 4.8 : Distribution of Important Ameneties and Services
in the Village, 1983

Sl. No.	Ameneties	Group-A hamlets	Group-B hamlets	Total
1.	<u>Nos. of schools</u>			
	a) Primary schools	11	3	14
	b) Middle schools	1	-	1
2.	Post Offices	2	-	2
3.	Banks	1	-	1
4.	Dispensary	1	-	1
5.	Vety. field asstt.	1	-	1
6.	Market	1	-	1
7.	Nos. of hamlets electrified.	10	-	10

APPENDIX TABLE TO

CHAPTER 4

Table 4.A : Percentage Distribution of Sample Population
by Sex and Age-Groups.

Age groups	Group-A Hamlets			Group-B Hamlets		
	P	M	F	P	M	F
0 - 14	35.55	33.17	37.78	42.52	41.88	43.26
15 - 19	10.55	9.95	11.11	7.31	7.50	7.09
20 - 24	9.86	9.48	10.22	6.98	6.25	7.80
25 - 29	8.72	8.53	8.89	8.97	9.38	8.51
30 - 39	11.47	13.27	9.78	12.46	12.19	12.77
40 - 49	12.16	12.80	11.56	7.31	7.50	7.09
50 - 59	8.26	8.53	8.00	7.97	8.12	7.80
60 +	3.44	4.26	2.67	6.48	7.19	5.67
Total	100.00	100.00	100.00	100.00	100.00	100.00
Sample size	436	211	225	602	320	282

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CHAPTER 5LAND ASSET

According to the Reserve Bank of India's Rural Debt and Investment Survey 1971 - 72 data, land and buildings are the two major forms of asset in the rural areas of Meghalaya. They constitute about 55 per cent and 25 per cent of the total value of assets respectively.¹ But buildings in the rural areas of the state are largely used for residential purposes only. Taking this fact into consideration, it can, therefore, be said that land is the only major form of productive asset in the rural areas of the state. The owners of this asset not only enjoy higher incomes than the landless, but the traditional ties of dominance and dependence enable the former to control the lives of the latter in a multitude of ways.² It is a source of prestige and social identity among the people.³ Land is also the main form of asset desired to be held by man.

"Depreciation being negligible the costs of holding land are low; it generally maintains its capital value over time and offers more security than most other assets; and if leased out it also yields a rent".⁴ It is, therefore, of significance to study the pattern of ownership and distribution of this asset among the sample households in the area.

The chapter is divided into five sections.

In Section I we present a brief account on the ownership system of land in Khasi Hills in general and Shella village in particular, followed by a note on the reliability of land data in Section II. In Sections III and IV, we deal with the distribution of land holdings and land concentration respectively. The last Section summarises the important points emerging from the first four sections.

Table 5.1 : Assets Composition In Rural Meghalaya (Percentage)

Sl. No.	Type of Asset	Percentage to the total
1.	Land	55.52
2.	Buildings	24.59
3.	Livestock	9.03
4.	Implements and Machinery	2.84
5.	Others	8.02
&		
	Total	100.00

Source : Rural Debt and Investment Survey, 1971-72,
Reserve Bank of India.

I

Land Ownership System

From the point of ownership system, land in Khasi Hills is generally classified into two main types; viz., Ri Raid or Community lands and Ri Kynti or private lands. Ri Raid lands are those lands set apart for the community over which no persons have proprietary, heritable or transferable right excepting the right of use and occupancy. Such rights revert to the community when a person ceases to occupy or use the land for a period of three years consecutively. Heritable and transferable rights over Ri Raid lands accrue only when the occupants have made permanent improvement on land. But even these rights lapse if he completely abandons the land over such a period as the Raid Durbar deems long enough.⁵

Ri Kynti lands, on the other hand, are lands set apart from the time of the founding of the elaka for certain clans upon whom were bestowed the proprietary, heritable and transferable rights over such lands. They also include any part of the Ri Raid lands which at later time were bestowed upon a person or a family or a clan for certain yoeman's service rendered to the elaka. The same rights devolved on Khasis to whom such lands are disposed off by the original owners by way of sale, transfer on receipt of full consideration for the same.⁶

Ri Kynti lands may be sub-divided into Ri Kur (or clan) lands and family (or individual) lands. In the Ri Kur all members of the Kur (Clan) are entitled to use it, but it can not be sold nor transferred without the consent of the Durbar Kur. In the case of family or individual lands, the owner has the right of permanent, heritable possession and the right to transfer. However, the right of transfer is confined within the Khasi community only.⁶

Further, it may be noted that a Ri Raid lands may be owned by a village, a group of villages or elaka, and that only a member of that particular village or group of villages or elaka can occupy the Ri Raid lands. A Khasi who is not a member of a village or villages or elaka of the Raid can not claim or occupy any Ri Raid lands, unless "he submits himself to the jurisdiction of the village or Raid or elaka and has been accepted and recognised as one belonging to it".⁵ An outsider, that is, a non-Khasi, has no right of use and occupancy on the Ri Raid land of the community. No one including the chief of the elaka or headmen of the village has any authority to allow an outsider the right of use and occupancy on the Ri Raid lands. The customary practice has been that only the Durbar Hima (Assembly of State) was competent to grant or refuse such rights to a non-Khasi.⁷

Ri Raid lands are prevalent mostly in the Bhoi Areas of Khasi Hills. In this regard, Rev. Fr. Sngi Lyngdoh observes that in our traditional land system, "there can not be any private land as such in the Bhoi Areas".⁸ It thus shows that all lands in the Bhoi areas of Khasi Hills are communal lands. In other parts of Khasi Hills, land is either communal lands or private lands. Again within private lands, a mixture of clan lands and individual lands exist. However, in the Ri War (Southern) region in general and in Shella and surrounding villages in particular, land belongs mostly to the individual owners. Although small pockets of Ri Raid land are reported to exist in some villages, it is insignificant compared with the land owned by individuals.⁹ No Ri Kur are found in Shella village and its vicinity.

II

Reliability of Land data

No cadastral survey about the size of land owned or occupied by a clan or a family or individual has yet been undertaken in Khasi Hills Districts. As such one does not know how much land is actually owned or occupied by a clan, or a family or individual. Existing data on land use for any investigation in Khasi Hills are based on rough methods for

approximation. Generally, the owning households -- with the assistance of village headmen or elders -- are asked about the optimum quantity of seeds in terms of standard kerosene tin (KT) which, under the given techniques of cultivation, enables the farmer to maximise output of a particular crop.¹⁰ To know the optimum quantity of seeds is not a sufficient condition to know the size of land owned by the households or individuals, because the optimum quantity of seeds depend on the fertility of the land. The more fertile the land, the lesser the quantity of seeds needed and vice versa. As such, 1 kerosene tin (KT) of land in a most fertile land is not the same as 1 KT in a relatively less fertile land. However, by taking the fertility of the lands and the optimum quantity of seeds into account, the size of land owned/operated may be estimated. This is possible if lands were first classified into different categories according to their fertility, and through measurement of some plots of land in each category, one could establish the relationship between KT of seeds and the size of land in standard unit, say, an acre, in different categories of land. For example, the measurement of some plots of land yield the following relationship between KTs of seeds and size of land:

The 1st category of land	requires	1KT	of seeds	per acre	of land				
" 2nd	"	"	"	"	"	1.5KT	"	"	"
" 3rd	"	"	"	"	"	2 KT	"	"	"

and so on.

If a person or a household reported to own land requiring of 1 KT of seeds in a 1st category, 3 KT of seeds in 2nd category and 4 KT of seeds in 3rd category, etc. then the total area of land owned by a person or a household may be taken as equivalent to (1 acre + 2 acres + 2 acres) 5 acres. In this way, one should convert the size of land reported in terms of KT of seeds into standard unit.¹¹ But this method cannot be applied to measure all types of land owned by a person or a household. It can not be used to measure the area of land used under fruits and orchards, arecanut plantations or waste lands. Therefore, in cases where such method is not applicable, the respondents were always asked to approximate the size of land either in terms of KTs of seeds or in standard units like acre by using eye-estimation method. As such land data collected from the owning households may have some deviation from the actuals. This problem also applies in the case of Shella Village, with the exception of paddy-fields where the owners recorded the size of their land in terms of a 'kiar' which is equivalent to a 'bigha'.

Since our study requires data on the size of land owned by the households, we have been left with no alternative but to use the approximation method. However, fortunately the landowners in the area of our study were found to be familiar with the size of a 'kiar'. They were, therefore, asked to eye-approximate the area owned or operated by them in terms of a

'khar. Limitation in the accuracy of land ownership data notwithstanding, we feel that because of our close knowledge of the area that the data collected through our field investigation will closely approximate the actuals.

III

Distribution of Landholdings

Landholdings may be of ownership and or operational holdings. Ownership holdings include all lands owned by the members of a household, whether under own cultivation or under cultivation by tenants. An operational holding, on the other hand, is the one which includes all lands used wholly or partially for agricultural production operated as a single technical unit by a single household. The ownership holding is confined among the Khasi households only, because, as mentioned earlier, the land system does not entitle a non-khasi to own land. However, partly due to ignorance in wet land cultivation, and partly perhaps due to a recurrence of petty crime¹² along the international border close to which the wet lands are situated, most of the land-owners leased-out their paddy-fields to the non-khasis whose settlements are located in and around their fields. Leasing of land has thus served as a means of livelihood to the non-khasis, who would perhaps otherwise have not immigrated into the Khasi Hills, Because of land leasing system, the pattern of distribution of land-holdings would

obviously differ from what is indicated by the ownership holdings. Therefore, the pattern have been examined for both ownership and operational types.

Distribution of ownership holdings :- The land ownership data reported by the sample households and presented in table 5.2 shows that :-

- (i). A significant proportion of the households (about 13 per cent) are not owning any plot of land.
- (ii). A bulk of households in the area belongs to the categories of small-landholders. For instance, about half of the households are owning land measuring less than 15 bighas each. The area owned by these households accounted for about one-fifth of the total area reported.
- (iii). Bulk of the land is concentrated in the larger size groups land-holders. For instance, it is observed that only 13 per cent of the households owning land of more than 35 bighas each accounted for more than half of the total area reported.

The above phenomena refer to all types of lands owned by the households. Paddy-fields in the area are relatively scarce and considered as more valuable than other types of land. Even though the owners do not keep their paddy-fields under their own cultivation, they are nevertheless considered as more valuable because they yield rental income to the owners in terms of paddy. Therefore, the ownership of paddy-fields is also

**Table 5.2 Percentage Distribution of Ownership Holdings
by Size (All type of lands).**

Sl. No.	Size class (in bighas)	Percentage of households	Percentage of area owned	Average holding per owning households
1.	Landless	12.64	-	-
2.	- 5	11.49	2.17	3.40
3.	5 - 10	26.44	9.34	6.37
4.	10 - 15	11.49	6.60	10.35
5.	15 - 20	13.79	13.32	17.42
6.	20 - 25	8.05	9.88	22.14
7.	25 - 30	2.30	3.25	25.50
8.	30 - 35	1.15	1.91	30.00
9.	35 - 40	1.15	2.23	35.00
10.	40 - 50	1.15	3.12	49.00
11.	50 - 75	5.75	20.08	63.00
12.	75 - 100	3.45	18.23	95.33
13.	100 +	1.15	9.88	155.00
	All	100.00	100.00	18.03

Distribution of Operational holdings: The distribution of operational holdings is given in table 5.4. The following are the important points emerging from the tables:

(i). In Group-A Hamlets, the proportion of households who are not operating land is identical with that who are not owning any land. This shows the absence of leasing-in land among households in the hamlet groups.

Contrary to this, about two-fifth of the households in Group-B Hamlets who were customarily not entitled to own land were able to lease-in land and thus reached the rank of tenant-cultivators. However, more than three-fifth of the households in Group-B Hamlets fail to lease-in land and thus remains landless.¹⁵

(ii). The pattern of distribution of holdings among the operating households is characterised by the dominance of small holdings and the concentration of land in the relatively bigger sizes. For instance, in Group-A Hamlets about two-third of households operate land of less than 15 bighas each and together accounted for about one-third of the total operational holdings, while 9 per cent of households with an operational holdings of more than 35 bighas

separately presented in table 5.3. One of the most striking feature on the pattern of ownership of paddy-fields is that a very large proportion of households are not owning any plot of paddy-fields. If land ownership is to be defined in terms of paddy-fields, about two-fifth of the households will belong to rank of the landless. Further, among the owning households, the pattern of distribution is found to be similar with the distribution pattern of total land-ownership, that is, the ownership pattern is characterised by the dominant of small land holdings and concentration of land in bigger sizes. However, the dominant of small holdings is more sharp in the case of paddy-fields than in total land-ownerships.

The occurrence of high proportion of landless households and the dominant of small land-holders among the owning households is to a large extent associated with the system of inheritance prevailing in the area.¹³ According to the inheritance practice in the Shella Village and its neighbourhood, all children, sons and daughters receive "equal shares" of ancestral and self-acquired property of the parents "after their death".¹⁴ If the population is relatively small and land is abundant, the equal share of property by all children may not result in landlessness or in the emergence of small land holdings. But in an area where land is relatively scarce, equal share which involves continual division of ancestral

Table 5.3 : Percentage Distribution of Ownership Holdings by Size.
(Paddy-fields only).

Sl. No.	Size-class (in bighas)	Percentage of House-holds	Percentage of area owned	Average holding per owning household
1.	Landless	40.23	-	-
2.	- 5	25.29	13.85	3.14
3.	5 - 10	13.79	16.63	7.17
4.	10 - 15	9.19	17.20	11.12
5.	15 - 20	4.60	11.80	15.25
6.	20 - 25	2.30	9.09	23.50
7.	25 - 35	2.30	11.80	30.50
8.	35+	2.30	20.12	52.00
	All	100.00	100.00	9.94

property among the heirs will ultimately result, with the passage of time, in the emergence of small land holdings. Some of these holdings may be too small and fragmented, which may not be productive to its owners. Such owners may have disposed off their tiny plots of land and invest their money in other activities.¹⁶ This may result in the emergence of the landlessness in the area. During our field investigation, we have come across such households who are landless because they have disposed off their small plots of land inherited from their parents. Of the 11 landless households in our sample, 9 households belong to this category.

We also found another category of "landless" persons. They are strictly not landless inasmuch as their parents are owning small plot of land. But since the area is not just sufficient to maintain all the members, the elder members of the family prefer not to bank on this meagre source for their livelihood. Thus the landless in our study consists of two sets of households: Those who inherit no land or have disposed off their land; and those who own no land at present but likely to inherit land property in the future.

**Table 5.4 : Percentage Distribution of Operational Holdings
by size.**

Size-class (in bighas)	Group-A Hamlets			Group-B Hamlets		
	house holds (%)	area operated (%)	average holding per hh. (in bighas)	house holds (%)	area operated (%)	average holding per hh. (in bighas)
1	2	3	4	5	6	7
1. Landless	12.64	--	--	63.00	--	--
2. < 5	21.84	5.51	3.18	6.00	3.47	4.00
3. 5 - 10	32.18	16.44	6.45	6.00	5.50	6.33
4. 10 - 15	12.64	11.66	11.64	6.00	9.26	10.67
5. 15 - 20	6.90	9.02	16.50	5.00	12.50	17.00
6. 20 - 25	1.15	2.09	23.00	5.00	15.05	20.80
7. 25 - 30	1.15	2.55	28.00	1.00	3.76	26.00
8. 30 - 35	2.30	5.83	32.00	3.00	13.31	30.67
9. 35 - 40	1.15	3.37	37.00	2.00	10.42	36.00
10. 40 - 50	2.30	8.83	48.50	2.00	13.89	48.00
11. 50 - 75	3.45	17.58	64.33	--	--	--
12. 75 +	2.30	17.12	94.00	1.00	13.03	90.00
All	100.00	100.00	14.33	100.00	100.00	18.68

**Table 5.5 : percentage Distribution of Operational Holdings
by size. (Consolidated table)**

Size-Class (in bighas)	Group-A Hamlets			Group-B Hamlets		
	house holds (%)	area operated (%)	average holding per hh.	house holds (%)	area operated (%)	average holding per hh.
1	2	3	4	5	6	7
1. Landless	12.64	—	—	63.00	—	—
2. < 10	54.02	21.95	5.13	12.00	8.97	5.17
3. 10 - 15	12.64	11.66	11.64	6.00	9.26	10.67
4. 15 - 35	11.49	19.49	21.40	14.00	44.43	21.93
5. 35 +	9.19	46.90	64.37	5.00	37.34	51.60
All	100.00	100.00	14.33	100.00	100.00	18.68

Note:- The marginal, small, medium and big farm households may be taken as equivalent to the size class (< 10), (10 - 15), (15 - 35) and (35 +) bighas respectively.

each, accounted for as much as 47 per cent of the total operated area. Similarly, about one-half of the operating households in Group-B Hamlets operate less than 15 bighas each, and together accounted for about 18 per cent of the total area, while 5 per cent of the households operate land of more than 35 bighas each and claimed as much as 37 per cent of the total area.

(iii). Comparing the ownership holdings and the operational holdings (Group-A Hamlets) only we found that the proportion of households with smaller holdings is more marked in the latter than in the former. This is due to leasing out of land by owners (in Group-A Hamlets). However, as we will see later (Sec. IV of the present chapter) the degree of inequality in land holding between the two types (of holding) is not significant.

(iv). The average size of land per operating household is 14.33 bighas in Group-A Hamlets and 18.68 bighas in Group-B Hamlets, which are comparable with the State average (about 13 bighas) and the all-India average (15 bighas).

Land Concentration

Measures of Inequality: Let y_1 be the size of land holding (or income of the i^{th} household where $i = 1, 2, 3, \dots, n$, n and \bar{y} be the arithmetic mean of land holdings (or incomes) per household. The inequality in the distribution of land (or income) may be measured in terms of the following measures : 16

i. Relative Mean Deviation

$$M = \frac{\sum |\bar{y} - y_i|}{n \cdot \bar{y}}$$

ii. Variance

$$VR = \frac{\sum (\bar{y} - y_i)^2}{n}$$

iii. Coefficient of Variation

$$CV = \frac{(VR)^{\frac{1}{2}}}{\bar{y}}$$

iv. Standard Deviation of Logarithms.

$$L = \left[\frac{\sum (\log \bar{y} - \log y_i)^2}{n} \right]^{\frac{1}{2}}$$

V. Gini-coefficient

$$\begin{aligned}
 G &= (1/2^2 \frac{1}{\bar{y}}) \sum_i \sum_j |y_i - y_j| \\
 &= 1 - (1/n^2 \bar{y}) \sum_i \sum_j \min(y_i, y_j) \\
 &= 1 + 1/n - (2/n^2 \frac{1}{\bar{y}}) (y_1 + 2y_2 + 3y_3 + \dots + ny_n)
 \end{aligned}$$

where $y_1 \geq y_2 \geq y_3 \dots \dots \dots \geq y_n$

Each of the above measures suffer from some limitations or other. For example, the Relative mean deviation is insensitive to any transfer if the transfer takes place on the same side of the mean. The co-efficient of variation or the standard deviation of logarithms are independent of the mean level but are not sensitive enough either to reflect the shifts or to indicate the shape of the curve. Thus for example, it is possible that the coefficient of variation would be the same for a higherly peaked and reasonably low plateau distribution so long as the mean of the former is half of the latter though the latter distribution is much less unequal than the former. Standard deviation of logarithms also basically distorts the original distribution patterns to the extent that a large concentration in the upper groups is not reflected in the measure. Gini-coefficient is the most widely used measure of inequality. One reason for this perhaps is that it has a very close relationship with the Lorenz curve, which is

a diagrammatic representation of the distribution. Another reason may be that it measures inequality by taking note of the differences of each household's holding (or income) from everyone else's holding (or income) rather than from the mean, which may be nobody's holding (or income) and as such corresponds to a more natural meaning of inequality. However, it may be noted that this measure is helpless if the Lorenz curves intersect each other. To obtain a more realistic picture of the actual distribution pattern as also to arrive at measures more sensitive to change overtime and space several alternatives have been suggested from time to time and of these the most adopted one is the share of the different fractile/percentiles groups in the total land holding or income.

The inequality in land distribution in our study has been examined in terms of Gini co-efficient, standard deviation of logarithms, co-efficient of variation and share of the decile groups of households in total land holding. The result of these measures are presented in table 5.6. As indicated in the values of these measures, the following are the important inferences :-

1. Land concentration among the owning households is reasonably high, which thus implies that a large number of households in the village have negligible over land;

Table 5.6 : Concentration of Landholdings.

Sl. No.	Measures	Owning Households**		Operating Households	
		All lands	Paddy-fields only	Group-A Hamlets	Group-B Hamlets
1	2	3	4	5	6
1.	Gini-coefficient	.546	.481	.551	.443
2.	Standard deviation of logarithms	.422	.368	.409	.364
3.	Co-efficient of variation(%)	130	109	135	91.7
4.	Shares of -				
	Bottom 30%	6.56	8.70	7.24	7.82
	Middle 40%	22.44	25.14	21.54	31.40
	Top 30%	71.00	66.16	71.22	60.78

** Owning households referred to Group-A Hamlets only.

- ii. Comparing the degree of inequality between ownership holdings and operational holdings (Group-A Hamlets only), we observed no significant difference between the two. This implies that tenancy has no significant impact on the relative position of households with respect to land holdings in the village; and,
- iii. Comparing the degree of inequality (operational holdings) between Group-A and Group-B Hamlets, the inequality among the operating households is relatively higher in Group A than in Group-B Hamlets.

v

Summary

The upshot of the foregoing sections may be summarised as follows : Firstly, in Shella and surrounding villages land belongs mostly to the individual owners. No clan land is found in the area. Secondly, the ownership pattern of land in the area is characterised by the dominance of small land holdings with concentration of land in the hands of a few households. As table 5.6 indicates, the top 30 per cent households own about 71 per

cent of the total land area reported, whereas the bottom 30 per cent households own only 6.56 per cent of all land reported. This phenomenon is more visible in case of paddy lands. The measures of inequality also shows that land concentration (both ownership and operational) in the areas is reasonably high, which thus implies that large number of households in the area have negligible control over land. Thirdly, we note that landlessness and the dominance of small land holdings is to a large extent associated with the system of inheritance prevailing in the area. Fourthly, households in Group-A Hamlets do not lease in land. Contrary to this, households in Group-B Hamlets who were customarily not entitled to own land were leasing-in land. However, the majority of the households in Group-B Hamlets fail to lease-in land. Lastly, the pattern of distribution of holdings among the operating households is similar to the one observed in the ownership pattern. That is, the majority of the households belong to the rank of small land holders and land is concentrated in a few households.

Notes and References

1. See Table 5.1 : Assets composition in rural Meghalaya.
2. Betaille, Andre (1974), "Studies in Agrarian Structure", Oxford & IBH Publishing Co., New Delhi, P.65.
3. Ibid, p.199
4. Raj.K.N.(1970), "Ownership and Distribution of Land", Indian Economic Review, Vol.V(New Series), No.1.
5. Meghalaya, Govt.of (1975), "Report of the Land Reform Commission for Khasi Hills, 1975". Shillong p.17
6. Ibid, p
7. Ibid, p.19
8. Lyngdoh, Sngi Rev.Fr(1966) "The Bhoi Land Tenure System", in Man in India, Vol.46, No.2 reproduced 1.
- Vincent K.(1978), "A Socio-economic Study of Bhoilymbong A Village in Meghalaya", C.I.S.R.S. Social Research Series No.14, Bangalore, 0.36.
9. At present this Raid land is reported to be under permanent cultivation (occupation), and therefore, practically speaking it is not longer a Raid Land.
10. Measurement of land in terms of KT of seeds is very common in Khasi Hills. Nakane (1967), Vincent (1978) and Guhatha, kurta (1983) among others have also observed that land in Khasi Hills is measured in terms of KT of seeds.

- Chie Nakane (1967), "Garos and Khasis", Mouton & Co., Paris.
- Vincent, K.(1978), Op cit.
- Guhathakurta, S.M.(1983), "Poverty, Unemployment and Development Policy in North-Eastern Region: A case study with reference to ten villages in East and West Khasi Hills of Meghalaya", NEHU, Shillong.

11. Vincent (1978), in his study of a village in Meghalaya has adopted this method to arrive at the size of land owned/operated by the households, see, Vincent, K(1978), op cit p.180.
12. Most of the Khasis do not take up wet land cultivation, partly due to their ignorance and partly due to a false vanity. Also due to robbery (viz, cattle lifting, etc) that use to take place along the informational border with Bangladesh, the local Khasis prefer to stay away from such area and entrust the immigrants for cultivation.
13. In the rest of Khasi Hills, however, the causes of the emergence of small land holdings is due to either lack of funds or initiative among the cultivators see : Nair, M.K.S.(1986), "Constraints on the Development of Land Market in Meghalaya", Economic and Political Weekly, Review of Political Economy, No.30.

14. Meghalaya, Govt. of (1975), "Report of the Land Reform Commission for Khasi Hills", op cit p.38
15. Although all households in Group B Hamlets are very anxious to operate land, but it is reported that only the settlers who migrated earlier than their present neighbours have strong influence on the land owners. It is because of this reason that a small proportion of households were able to lease-in land in the village.
16. Osmani, S.R. (1982), "Economic Inequality and Group Welfare", Clarendon Press, Oxford, p.39.

CHAPTER 6HOUSEHOLD INCOME

Though land represents the basic resource for subsistence, yet it is felt that household income is the better indicator of household's economic position. This is for the obvious reason that "income represents not only the net outcome of household productive resources and capabilities but also determines the command of household over the range of available goods and services".¹ Therefore, the objective of this chapter is to examine the structure and distribution of income between the two hamlet groups in the area. The chapter is divided into four sections. The first section deals with the definition of income as adopted in our study. The second examines the sources and composition of income, while the third section deals with the distribution of households by income sizes and concentration of income. The last section sums-up the main points emerging from the three sections.

I

Definition

Household income: Household income includes earnings of members of the household from all sources during the reference period, that is, during the last 365 days preceeding the date of survey. The various sources of income for the household were classified into the following groups:

- i. Agricultural income: This includes earnings received from the cultivation of agricultural crops like areca-nut, fruits, paddy, vegetables and other cash crops.
- ii. Agricultural wage income: This includes earnings from wage-employment in farm activities like cultivation, plantations, fruits, vegetables, livestocks and all allied activities.
- iii. Non-agricultural wage income: This includes earnings from wage-employment in non-farm activities like quarrying, carpentry, trading and all other non-farm activities.
- iv. Income from trade and commerce: This includes only income earned from self-employment in trade and

commerce, such as retail trade in foodstuffs, beverages, fishes, meat, etc. and income from export of limestones and other products to Bangladesh.

- v. Rental income: means earnings from leasing-out of agricultural land, limestone quarries and other assets.
- vi. Other incomes: all other earnings which have not been included in the above groups.²

In computing income from any sources, the gross income was first ascertained and then the expenses incurred in a particular activity were deducted from the gross income. For example, in computing income received from the cultivation of crops, the total receipts were first ascertained and then the expenses on cultivation like wages paid to hired labour and other expenses were deducted from the gross receipts. Similarly, while computing income earned from trade and commerce or any other self-employment activities, the gross receipts were first ascertained and then from the gross receipts total expenses incurred in these activities were deducted. But in all the cases, the imputed value of household's labour has not been deducted. It may also be noted that in this study we have not included the imputed values of receipts relating to rental value of house property occupied by the household itself, production for home consumption, and goods and services received free from any sources.³

Reliability of income data: Before proceeding with our analysis, we shall say a few words about the reliability of income data. Income data generally suffer from two main problems, viz., the response bias and the recollecting error. It is widely believed that income surveys almost everywhere suffer from a distinct response bias to the extent that people in the upper income groups tend to under-state their incomes, whereas people in the lower income groups over-state their income. Another problem associated with income surveys is a larger reference period. The reference period for income survey is generally one year. As such, it is felt that the accuracy of the data may be seriously affected. This is because in the rural areas most of the people do not keep any written records of their earnings and expenses, and therefore the income thus reported may not be equal to the actual income earned by them during the reference period. The problem could not be solved by adopting a smaller reference period because such a period would bring the effects of seasonal variation in income reported. For instance, the respondents would report a relatively higher income if the reference period is during the peak season and a relatively lower income during the slack season. Therefore, as far as income data are concerned, the smaller reference period is not an alternative to a larger reference period. In order to get a statistically reliable data, the respondents should be enabled

to report a true value of their income as far as possible. This requires the co-operation and sincerity of both parties, that is, the respondents and the interviewers. In our case, all efforts have been made to enable the respondents to provide a reliable information on income earned by all members of the households from various sources during the reference period. Although the data reported may not be altogether free from the two possible errors mentioned above, yet it is presumed that they are reliable, at least from the statistical point of view.

II

Sources and Composition of Income

Multiple sources of income: In table 6.1 we present the distribution of households by the number of sources of income. A glance at the table reveals that on an average, households in group-A hamlets are in a better position than their counterparts in group-B hamlets as far as the multiplicity of sources of income is concerned. For instance, more than half of the households in group-A hamlets derive income from at least three sources whereas in group-B hamlets the proportion of such households is only 15 per cent of the total households. If multiplicity of sources of

Table 6.1 : Distribution of Households by Number of Sources of Income.

Household Categories	Number of Sources of Income				
	One Source	Two Sources	Three Sources	Four + Sources	Total
1	2	3	4	5	6
<u>Group-A Hamlets</u>					
1. Landless	2 (18.18)	5 (45.45)	4 (36.36)	--	11 (100.00)
2. Marginal	2 (4.26)	14 (29.79)	20 (42.55)	11 (23.40)	47 (100.00)
3. Small	--	4 (36.36)	5 (45.45)	2 (18.18)	11 (100.00)
4. Medium	2 (20.00)	3 (30.00)	2 (20.00)	3 (30.00)	10 (100.00)
5. Big	1 (12.50)	2 (25.00)	1 (12.50)	4 (50.00)	8 (100.00)
Total(2 - 5)	5 (6.58)	23 (30.26)	28 (36.84)	20 (26.32)	76 (100.00)
Total(1 - 5)	7 (8.05)	28 (32.18)	32 (36.78)	20 (22.99)	87 (100.00)

..... Contd. next page.

Table 6.1 :(Contd.)

	1	2	3	4	5	6
	<u>Group-B Hamlets</u>					
1. Landless	13 (20.63)	39 (61.90)	11 (17.46)	--	--	63 (100.00)
2. Marginal	2 (16.67)	8 (66.67)	2 (16.67)	--	--	12 (100.00)
3. Small	5 (83.33)	1 (16.67)	--	--	--	6 (100.00)
4. Medium	8 (57.14)	4 (28.57)	1 (7.14)	1 (7.14)	--	14 (100.00)
5. Big	--	5 (100.00)	--	--	--	5 (100.00)
Total (2 - 5)	15 (40.54)	18 (48.65)	3 (8.11)	1 (2.70)	--	37 (100.00)
Total (1 - 5)	28 (28.00)	57 (57.00)	14 (14.00)	1 (1.00)	--	100 (100.00)

Note:- Figures in parentheses are percentages.

income helps the household to 'escape the vagaries of the seasons and market fluctuation', then the table suggests that on an average, households in the former group of hamlets are in a better position than those in the latter group. Further, the distribution of different categories of households by the number of sources of income reveals that in group-A hamlets, the number of sources of income is highly associated with the household farm-sizes. For example, in group-A hamlets, 63.64 per cent of the landless households derive income from at most two sources while the corresponding percentage among the landed is only 36.84. Again the table shows that among the landed, the proportion of households who derive income from at least four sources tends to increase with the increase in household farm-sizes. This clearly indicates that the number of sources of income is associated with household farm-sizes. However, the association between the number of sources of income and household farm-sizes is not observed in group-B hamlets. This may be due to two reasons: the land ownership system which, as we have seen in Chapter 5, prevent the non-Rhasis to own land; and, secondly, the degree of diversification of economic activities, which we shall see in the next Chapter, is not high as in group-A hamlets.

Composition of income: Although on an average, households in group-A hamlets have more sources of income than their counterparts in group-B hamlets and income-sources are more diversified among the landed than among the landless, but the importance of the different sources of income differs not only between the two hamlet groups but also between the different categories of households. Therefore, in the paragraphs that follow, we shall examine the composition of income among the different categories of households in both the hamlet groups. The composition of household income by sources is presented in table 6.2. The important points emerging from the table may be briefly stated as follows:

1. About two-fifth of total income in both the hamlet groups come from earnings received from cultivation of agricultural crops. Wage income, on the other hand, shows significant variation between the two hamlet groups. Whereas in group-A hamlets wage income constitutes about 24 per cent of total income, in group-B hamlets it is about 44 per cent. Significant variation is also observed in the proportion of income received from trade and commerce, rent and other sources which together account for 37 per cent of total income in group-A hamlets as against 12 per cent in group-B hamlets. This suggests that economy of group-A hamlets

is relatively diversified and oriented towards market. The latter is presumably due to the production of cash crops like arecanut, oranges, pineapples, etc. and the growing importance of export of limestones and other products to Bangladesh in recent years.

- ii. Agricultural income constitutes the major part of the operating households' income in both the hamlet groups. However, between the two hamlet groups the share of agricultural income to total income is more marked in group-I hamlets than in group-A hamlets. For instance, while the share of agricultural income in group-A hamlets ranges between 35 to 60 per cent of total income; in group-B hamlets it ranges between 65 to 98 per cent. This implies that the operating households in group-A hamlets, unlike their counterparts in group-B hamlets who derived a major part of income from agricultural activities, derived income not only from agricultural activities but also from sources other than agriculture.
- iii. As expected, household wage income tends to decline and ultimately disappears with the increase in household farm sizes, which is possibly due to increasing opportunity of self-employment in one's own farm. For instance, in group-I hamlets wage income as a proportion of total income is

their respective categories of households decline from about 54 per cent in the case of landless to about 12 per cent in the case of medium farm households. In case of group-B hamlets, wage income declines from about 83 per cent in case of landless to about 2 per cent in case of medium farm households. It may be noted that in both the hamlet groups wage income does not figure among the big farm households. Further, within wage income, the importance of agricultural wage and non-agricultural wage income differs between the two hamlet groups. In group-A hamlets, non-agricultural wage income is relatively important than agricultural wage income in all categories of households, whereas in group-B hamlets the opposite is observed. Even if we consider these two component of wage income as two separate sources of income, we found that in group-A hamlets non-agricultural wage income is the most important component of income among the landless and marginal farm households, whereas in group-B hamlets agricultural wage income is the most important one.

iv. Income from trade and commerce seems to accrue primarily in group-A hamlets than in group-B hamlets. In group-A hamlets the source appears to occupy an important position in the income basket of the landless, medium and big farm households, constituting about 41, 30 and 22 per cent of their respective total income. Contrary to the above, in group-B hamlets only the landless households are reported to have derived income from this source, and constitutes about 10 per cent of their total income.

v. In group-A hamlets, rental income and other incomes taken together constitute a sizeable proportion (19.24 per cent) of total households income. In group-B hamlets, on the other hand, rental income does not figure at all, and other incomes constitutes only 7 per cent of the total income.

Mean income: As we have seen in the preceding paragraphs, households generally derived income from more than one source. Naturally therefore one is tempted to enquire which one is the most remunerative source of income and which others are less remunerative. In order to enable us to identify the most remunerative source of income for different categories of households (by farm sizes), we may compute mean income by each source of income. The mean income for each source has been calculated by dividing the

total income of households from a particular source by the number of households reported income from a particular source. The most remunerative source of income is defined as the one having the highest mean value. The least remunerative, on the other hand, is the one with the lowest mean value. Table 6.4 presents the mean income of households by specified sources and households farm-sizes. This table may be read along with table 6.3 which shows the proportion of households having different sources of income by farm-sizes. This is necessary because the importance of each source may not be judged from its mean value only but also from the proportion of households who derived income from that particular source. For example, in group-A hamlets, we find that although on an average, trade and commerce has the highest mean value, meaning thereby the most remunerative source of income, but the proportion of households who derived income from this source is about 22 per cent only. Similarly, agricultural income has the highest mean value in group-B hamlets but the proportion of households deriving income from this source is about 37 per cent only. On the other hand, the wage income which is the source of about 57 per cent of households in group-A hamlets and 68 per cent in group-B hamlets, is found to be the less remunerative source. In other words, the most remunerative

Table 6.3 : Percentage of Households Having Specified Sources of Income by Household Farm-Sizes.

Sl. No.	Sources of income	Landless	Marginal	Small	Medium	Big	All
<u>Group-A Hamlets</u>							
1.	Self-employment in agriculture	-	100.00	100.00	100.00	100.00	87.36
2.	Wage-employment in agriculture	63.64	48.94	18.18	30.00	-	40.23
3.	Wage-employment in non-agricultural activities	72.73	46.81	36.36	40.00	-	43.68
	All Wage-income	81.82	65.96	45.45	50.00	-	57.47
4.	Trade and Commerce Income.	45.45	10.64	18.18	30.00	50.00	21.84
5.	Rental Income	-	10.64	36.36	30.00	50.00	18.39
6.	Other Incomes	27.27	57.45	63.64	20.00	87.50	52.87
<u>Group-B Hamlets</u>							
1.	Agricultural Income	-	100.00	100.00	100.00	100.00	37.00
2.	Agricultural Wage Income	80.95	50.00	-	14.28	-	59.00
3.	Non-agricultural Wage Income.	71.43	-	-	7.14	-	46.00
	All Wage-income	95.23	50.00	-	14.28	-	68.00
4.	Trade and Commerce Income	15.87	-	-	-	-	10.00
5.	Rental Income	-	-	-	-	-	-
6.	Other Incomes	23.81	50.00	16.67	42.86	100.00	33.00

Table 6.6 Mean Income of Households Reporting Income from the Specified Sources by Household Farm-Sizes.

Sl. No.	Source of Income	Landless	Marginal	Small	Medium	Big	All
		<u>Group-A Hamlets</u>					
1.	Agricultural Income	-	2418.83	2653.64	4404.00	7201.25	3217.45
2.	Agricultural Wage Income	1035.71	1660.87	1225.00	1600.00	-	1505.71
3.	Non-agricultural Wage Income	3437.50	2495.45	1525.00	1800.00	-	2528.95
	All Wage-income	3861.11	3003.23	1790.00	2400.00	-	2976.00
4.	Trade and Commerce Income	5280.00	4810.00	5360.00	101666.67	5250.00	5930.00
5.	Rental Income	-	2960.00	6125.00	2833.33	2225.00	3543.75
6.	Other Incomes	1000.00	1356.41	1342.86	2900.00	1250.00	1382.02
	All Sources	5931.82	6005.49	7523.64	10084.00	12032.50	7193.48
		<u>Group-B Hamlets</u>					
1.	Agricultural Income	-	2833.33	5083.33	8178.57	14400.00	6729.73
2.	Agricultural Wage Income	2496.08	1966.67	-	750.00	-	2383.05
3.	Non-agricultural Wage Income	2411.11	-	-	800.00	-	2376.08
	All Wage Income	3930.00	1966.67	-	1150.00	-	3675.00
4.	Trade and Commerce Income	2860.00	-	-	-	-	2860.00
5.	Rental Income	-	-	-	-	-	-
	All Sources	4487.30	4341.67	5166.67	8514.29	16270.00	5663.50

source of income is confined to a few households only, whereas the majority of the households depend on sources which are less remunerative.

Further, the data (table 6.4) shows that, as expected, mean income from 'all sources' tends to increase with the increase in household farm-sizes. This is found in both the hamlet groups, which thus implies that farm-sizes is an important factor determining the (mean) income levels of households.

Secondly, the mean income from self-employment in agriculture corresponds to the household farm-sizes. That is, mean income increase with the increase in household farm-sizes.⁴ It is also observed that the mean income from this source is relatively higher in group-B hamlets than in group-A hamlets. This denotes that agricultural activity is more rewarding in the latter group of hamlets than in the latter.⁵ It is also noted that agricultural activity is the most remunerative source of income for the big farm household in group-A hamlets while it is the most remunerative for all operational households in group-B hamlets.

Thirdly, as usual, the mean income from wage employment tends to decrease with the increase in farm-sizes. This is because the increase in farm size gives member

in the household opportunity to utilise their labour power in their own farms. They do not need to sell their labour outside.

Fourthly, the mean income from self-employment in trade and commerce shows that for group-A hamlets, it is the most remunerative source irrespective of any categories of households, except for the small and big farm households where it is the second most remunerative.

Lastly, the mean income from rent and other sources highlights the importance of those sources as supplementary sources of income in group-A hamlets. It is also worth mentioning that some households derived a major share of their income from leasing-out their assets. It is because of this reason that rental income is found to be the most remunerative among the small farm households.

III

Distribution of Households by Income Sizes

The distribution of households by income sizes is presented in table 6.5. It is evident from the table that the proportion of households which earned an annual income upto Rs 6000 accounted for nearly half of the households in group-A hamlets and more than three-fourth of the households in group-B hamlets. On the other hand, the proportion of the households with an annual income of Rs 15,000 and above constituted about 6 per cent of the households in group-A hamlets and about 3 per cent in group-B hamlets. Again, as we have already seen earlier (table 6.4), on an average households in group-A hamlets earned a relatively higher income than their counterparts in group-B hamlets. This is also reflected in the distribution of households by income sizes. That is, the proportion of households in the lower income brackets is relatively higher in group-B hamlets than in group-A hamlets.⁶

Household income is determined by several factors.⁷ But it is widely believed that of all the factors, land is the most important one for the rural households. Hence in table 6.6 we present the distribution of households in different income groups by the household farm sizes. As expected, it is noted that the bulk of the households in the lower income brackets are

from the landless and marginal farm households. It is also observed that the proportion of the landless and marginal farm households tends to decline with the increase in the income sizes. On the other hand, the proportion of the relatively bigger farm households (medium and big farm households) tends to increase with the increase in income sizes. This phenomenon, though present in both the hamlet groups, is more sharp in case of group-B hamlets than in group-A hamlets, which thus implies that households' farm-size as a factor influencing income is relatively stronger in the case of group-B hamlets than in the case of group-A hamlets.⁸

Further, it is observed that some households operating no land or at best with marginal land are falling in the higher income brackets and some households operating a larger plot of land in the lower income brackets. Such discrepancy indicates that although land is the main resource whose unequal distribution happens to be mirror - reflection of unequal distribution of income, yet there may be a few cases in which one may be more unequally distributed than the other. This is because of the fact that a host of factors may simultaneously influence the income level of the household.

Concentration of income: The concentration in households income may also be measured in terms of Gini-coefficient, coefficient of variation, standard deviation of logarithms of income, and the shares of income of the different decile groups of households to total income. The computed values of these measures are presented in table 6.7. It is evident from the table that income in the area is unequally distributed among the households. Comparing the income concentration between the two hamlet groups, it is found that although income is more unequal in group-A hamlets, the disparity in income distribution in both the hamlet groups is more or less the same. However, it may be noted that the concentration of income in the area is not as high as the all-India level, for instance, according to the all-India household income data collected by the National Council of Applied Economic Research in 1975 - 76, the computed values of the Lorenz ratio, coefficient of variation(%), standard deviation of logarithms, share of 1st quintile(%) and the last quintile(%) to total income are 0.416, 149, 0.312, 5.8 and 49.3 respectively,⁹ which are higher than our values presented in table 6.7.

Table 6.7 : Concentration of Household Income.

Measures of Concentration	Group-A Hamlets	Group-B Hamlets
Gini coefficient	0.270	0.240
Co-efficient of Variation	0.561	0.554
Standard Deviation of Log	0.205	0.177
Shares of: Bottom 30%	16.32	19.25
Middle 40%	35.27	39.08
Top 30%	48.41	48.41
Top 10%	23.90	24.08

IV

Summary

The main points which come out from the appraisal on the structure and distribution of household income may be summarised as follows:

- i. On an average, households in group-A hamlets have more sources of income than their counterparts in group-B hamlets. The latter derive income from one or two sources only. In case of group-A hamlets, the number of sources of income is associated with household farm-sizes, whereas such association is not observed in group-B hamlets.
- ii. The importance of the various sources of income, as revealed in their shares to total income and mean income, differs not only between the two hamlet groups but also differ between the different categories of households in the same group of hamlets.
- iii. The majority of the households in both the hamlet groups belong to the lower income brackets, and the proportion of low income households is relatively more in group-B hamlets than in group-A hamlets.
- iv. The level of disparity in household income is more or less same in both the hamlet groups.

APPENDIX TABLES TO

CHAPTER 6

Table 6.A_{3b} Distribution of Population by Household Income Sizes and Per Capita Income Sizes.

Group-B Halets.

Sl. No.	Per Capita Income (₹)	Upto 3600	3601 - 4800	4801 - 6000	6001 - 7500	7500 - 10000	10001 - 15000	15001 *
1	2	3	4	5	6	7	8	9
1.	Upto 600	12.31	5.07	10.53	-	-	-	-
2.	601-800	44.62	25.81	18.05	-	-	-	-
3.	801-1000	-	33.88	30.08	45.24	16.92	-	-
4.	1001-1200	12.31	18.89	10.53	-	44.62	-	-
5.	1201-1500	23.08	7.37	17.29	42.86	-	23.41	-
6.	1501-1800	7.69	8.29	4.51	-	33.85	39.57	45.56
7.	1801-2500	-	1.38	9.02	11.90	-	17.02	35.35
8.	2501-3200	-	-	-	-	4.62	-	-
9.	3201-400	-	-	-	-	-	-	18.18
10.	4001 +	-	-	-	-	-	-	-
All		100.00	100.00	100.00	100.00	100.00	100.00	100.00

* This Household Income Class correspond to (15001 - 20000). There is no observations beyond this Income Class.

Notes and References

1. Bajaj, J.L and Shastri, C. (1985), "Rural Poverty: Issues and Options", Print House (India), Lucknow, p.88
2. 'Other incomes' include all incomes not included elsewhere. They consists on income derived from livestocks, fishing, salary, remittances, interest, etc.
3. The National Council of Applied Economic Research (NCAER) in its definition of income has also included the imputed income relating to family labour engaged in capital formation activities, house property occupied by the household itself and birth of livestocks. This type of definition, if adopted in our study, would bring a lot of difficulties which may affect the reliability of income reported by the respondents. Hence, the imputed household income have not been included in our study.
See, NCAER (1980), "Household Income and Its Disposition", New Delhi, p.52
4. A similar relationship between income and farm-sizes has also been observed by Bhalla and Chadha in their study of income distribution in Punjab agriculture.
See, Bhalla, G.S. and Chadha, G.K. (1982), "Green Revolution and Small Peasants: A study of income distribution in Punjab agriculture", Economic and Political Weekly, Nos. 20 & 21.

5. It is possible that agricultural activity is more rewarding in group-B hamlets than in group-A hamlets because of the differences in types of land and crops cultivated. For instance, all lands in group-B hamlets are plain lands which are intensively used for the cultivation of paddy and vegetables, while in group-A hamlets all lands are dry lands with heterogeneous features. These lands are used for cultivation of arecanut, betel leaf, oranges and other kind of fruits.
6. Assuming household income level as a measure of a well being of a household may be inadequate since by doing so we ignore the influence of household size on the level of household income. The evidences from various income studies in the country indicate that, on an average, household income tends to increase with the increase in household sizes. However, in terms of per capita income, it is possible that small size households with relatively low income may be relatively better-off than what is being indicated by their household income level. Similarly, the opposite may also occur with big size households with higher income. In short, the distribution of income would undergo a change when per capita income is taken as a unit of analysis. Therefore, in Appendix tables (6.A₁ to 6.A₃), we have captured the changes in income distribution arising from the influence

of household sizes. It may be noted that although group-A hamlets stand better than group-B hamlets in both household and per capita income, the gap between the two hamlet groups is more marked in case of per capita income than household income.

Evidences on the relationship between household income and per capita sizes may be found in the following studies:

Vaidyanathan, A. (1974), "Some Aspects of Inequality in Living Standards in Rural India", in Srinivasan, T.N. and Bardhan, P.K (ed), "Poverty and Income Distribution in India", Statistical Publishing Society, Calcutta.

Kuznets, Simon (1976), "Demographic Aspects of the Size Distribution of Income: An Exploratory Essay", Economic Development and Cultural Change, No. 1

NCEAR (1980), op cit.

Parthasarathy, G. et al (1982), "Character of Poverty Among Rural Poor: A Study of West Godavari District", In Madras Institute of Development Studies (ed), "Poverty: An Inter-disciplinary Approach", Madras.

7. Besides land, other factors which may have significant influence on income are the family size, number of workers in the household, number of days worked per worker in the household, and the presence of non-land based assets. Further, differences in land productivity itself will influence the household income. For instance, if a more fertile land is operated by a small farm household, its income may be more than the one with a relatively bigger in size but less fertile land.
8. Among other reasons, it is perhaps because of the absence of any alternative sources of income (other than agricultural activity and wage employment activity) which makes land as a factor influencing income stronger in group-B hamlets than in group-A hamlets.
9. NCEAR(1980), op cit, p.120

CHAPTER 7THE WORKING FORCE

Since 1961, the census has adopted the concept of 'labour force' approach for collecting data on the workers. According to this approach, the population is classified into two broad categories, viz., those in the labour force and those outside it. The term 'labour force' refers to all those persons who are gainfully employed, say for a prescribed number of days in a year in one or more productive economic activities, and those who are without work but seeking or available for work at current rates of remuneration in prevailing local condition. In short, the term 'labour force' refers to the 'working force' and the 'unemployed'. However, it is to be noted that in a poor and predominantly agricultural economy, the concept of labour force is very blurred. It is well known that there is a wide difference between the working age of the poor and that of the rich. While the poor are more likely to enter the labour force at a very young age and retire at a very old age, the rich

may not do so. Again, the seasonal variations in the demand for labour also affect the size of the labour force. The 'discouraged workers' cease to look for work when they think that there is no chance of finding any. The presence of the large number of self-employed and unpaid helpers in family farms and enterprise creates problem in determining whether they are fully employed or under-employed through out the year. Further, in a subsistence economy, the demarcation between the members of labour force and dependants is not very clear. In such economy, all able members of a household do take part in economic activities. Even if some of the members are not earning, yet they lend a helping hand and thus enable the earning members to earn as much as possible.¹ It is because of these problems related with the 'labour force' approach that the concepts and definitions used for the measurement of the working force have frequently changed from census to census.

The present chapter seeks to examine the structure and the employment situation of the working force in the area under study. The chapter is divided into six sections. We begin with the concept and definition of worker in Section I followed by a brief discussion on workers' participation rates as revealed in the 1971 and 1981 censuses as well as in our field investigation data (1983) in Section II. In Section III and IV we present the distribution of workers by industry and

activity status respectively. The employment situation in the state in general and the area under study in particular is presented in section V. The last Section summarises the main points emerging in the first five sections.

I

Concept and Definition

The changes in the concept and definition of worker from census to census pose problem for intercensal comparability of data. Therefore, before we proceed to examine the different characteristics of the working force in the area under study, a brief review of the concepts and definitions of worker as adopted by the 1971 and 1981 censuses is given. This, it is hoped, will help to give a clue about the expected direction of shift in the worker participation rates as well as the distribution of workers among the different sectors of the economy during the last decade.

A 'worker' is defined as "a person whose main activity was participation in any economically productive work by his physical or mental activity. Work involved not only actual work but effective supervision or direction of work".² On the basis of this definition, persons

were identified as 'workers' and 'non-workers'. The 1971 census sought to classify workers by main (or primary) and secondary activities. Persons covered in main activity are those who had participated in any 'regular' activity such as trade, profession, service or business during any one of the day of the reference week, or, in case of certain other types of work which are not carried out through out the year such as cultivation, plantation, livestock and some type of household work, those who had participated in any such activities during the last one year. Thus 1971 census used a dual reference period — one for 'regular' activities (a week) and the other for seasonal activities (a year). To ensure comprehensive coverage persons classified as non-workers by main activity were asked whether they were engaged in any productive activities as secondary work.

Unlike the 1971 census, the reference period in 1981 census was one year to classify one as a worker. The reference period in 1981 census was quite liberal compared to 1971 census, and it left open the possibility of netting a larger number of population as workers, even if a person works for a few days during the year preceeding the day of enumeration. However, the 1981 census sought to distinguish between main workers who worked for six months or more during the year from those who are marginal workers.

Thus both the census of 1971 and 1981 provide two categories of workers: that is, in 1971 census we have (i) the main (or primary) workers and (ii) the secondary workers, and in 1981 (i) the main workers and (ii) the marginal workers. The difference in reference period notwithstanding, we may conceptually compare the main (or primary) workers of 1971 with the main workers of 1981, and the secondary workers of 1971 with the marginal workers of 1981.

II

Workers' Participation Rates

Main Worker-Population Ratio (MWPR): Table 7.1 compares the MWPR as obtained from the census records of 1971 and 1981. As mentioned in the preceding section, the definition of worker is relatively liberal in the 1981 census. Hence, the 1981 census is expected to show a higher rate of MWPR than the 1971 census. While the MWPR in group-B hamlets seems to have changed in the expected direction, in group-A hamlets it

Table 7.1: Main Worker-Population Ratio (MWR).

Year	<u>Group - A Hamlets</u>		<u>Group - B Hamlets</u>	
	<u>Males</u>	<u>Females</u>	<u>Males</u>	<u>Females</u>
1971	59.15	25.55	56.98	18.52
1981	55.31	17.33	64.84	35.03
1983	59.72	46.22	60.00	36.17

Source : Census Records for 1971 and 1981, and Field Investigation for 1983.

moves in the opposite direction. In group-A hamlets, the male MWPR declined by about 6 percentage points, that is, from the level of 59.15 per cent in 1971 to 53.31 per cent in 1981; and the female MWPR declined by about 8 percentage points, that is, from the level of 25.55 in 1971 to 17.33 per cent in 1981. However, our field investigation data of 1983 show the possibility of under-reporting with respect to female MWPR in group-A hamlets. Some comment with respect to a dip in female MWPR in 1981 in group-A hamlets may now be offered. In tribal households where usually both males and females jointly take part in economic activities the decline in the female MWPR by about 8 percentage points gives rise to doubt of under-reporting. Household work usually gets mixed up with participation in family enterprises, especially in the case of women. This plausibility explains somewhat under-reporting bias in the female MWPR. Such under-reporting arises due to the invisibility of females' economic contribution,³ particularly in the rural areas where traditional interpretations, such as 'work', 'economic activities', 'work place', etc. are difficult to apply. The nature of women's work (viz., preparation of meals, food processing, storage, fetching of water, etc.) is such that there is no clear demarcation as to where her occupation ends and work for the home begins.⁴ Besides, although the 1981 census instructions clearly specified that questions be put,

especially to women and children, whether they work as cultivator agricultural labourers or in household industry or other works, but since these categories were not built into the questionnaire itself, a correct enumeration depended on the efficiency in the implementation of census instruction. That the census enumeration could not or did not correctly enumerate the female working force in 1981 due to some under-reporting bias has been reported to us during the course of our field investigation.

Unlike group-A, group-B hamlets are inhabited by the non-indigenous population group (Bengalis, Garos, and Hajongs all immigrants from the erstwhile East Pakistan). The invisibility characteristics of women should be equally applicable in group-B hamlets as it was in group-A. However in the case of former, a variety of agricultural work (in addition to household activities) is performed by women labour who supplement or complement their male counterparts in family farm activities. Further, in group-B hamlets, given the pressure on limited land resource it is likely that some of such activities done by females workers form marginal or subsidiary occupation.

MWPR by age-groups: In table 7.2 we present the MWPR of the sample workers by age-groups. It is observed from the table that the female MWPR is relatively lower than the male MWPR in almost all age-groups. This is, however, a universal phenomena. Apart from the invisibility characteristics of women participation

Table 7.2 : Main Workers-Population Ratio (MWPR) according to Age-Groups.

Age-Groups	Group-A Hamlets		Group-B Hamlets	
	Males	Female	Males	Female
0 - 14	12.86	5.88	20.90	10.66
15 - 19	76.19	52.00	100.00	45.00
20 - 24	85.00	60.87	100.00	54.54
25 - 29	94.44	70.00	93.33	75.00
30 - 39	92.86	95.45	97.44	66.67
40-49	85.18	88.46	100.00	60.00
50 - 59	83.33	72.22	80.77	63.64
60 +	33.33	16.67	39.13	-
All	59.72	46.22	60.00	36.17

in rural areas, as explained earlier, there are various other reasons such as pregnancy and lactation, care of children, domestic chores and the nature of work opportunities available in the village which tend to reduce the participation rates (MWPR) of females in the 0 - 29 age group in particular and in all age-groups in general. It is also noted that the participation rate (MWPR) in the 0 - 14 age group is relatively lower in group-A than in group-B hamlets for both males and females. This is possibly due to the presence of full-time students in the former, whereas the number of school going children in the latter group of hamlets is negligible.

The male participation rates (MWPR) in group-A hamlets increase somewhat at a diminishing rate with an increase in age-groups, and it is noted that the maximum rate lies in the age-group (25 - 29) years. In group-B hamlets, on the other hand, the increase in participation rate is not very smooth with the increase in age-groups. Taking the possibility of errors in age-reporting, it may be reasonably presumed that the maximum rates are concentrated in the 15 - 49 age group. In the case of females, the concentration in the participation rates appears to be in the age groups of 30 - 39 years in group-A hamlets and 25 - 29 age-group in group-B hamlets.

MWPR by household farm-sizes: Further, if the distribution of worker participation rates (MWPR) is arranged according to the household farm-sizes (table 7.3), it is seen that in group-A hamlets,

**Table 7.3 : Main Workers-Population Ratio (MWPR) by Household
Farm-Sizes.**

Sl. Household No. Farm-Sizes	Group-A Hamlets			Group-B Hamlets		
	Males	Females	Persons	Males	Females	Persons
1. Landless	53.85	35.71	44.44	66.06	46.20	56.35
2. Marginal	59.68	48.62	54.51	57.89	22.22	40.54
3. Small	75.00	43.24	54.39	61.90	46.67	55.56
4. Medium	53.33	63.64	59.46	52.94	26.33	41.88
5. Big	57.69	37.93	47.27	42.86	4.17	25.00
All	59.71	46.22	52.75	60.00	36.14	48.84

the MWPR tends to increase upto a point after which it starts declining with the increase in the household farm-sizes, whereas in group-B hamlets the MWPR tends to decrease with the increase in the household farm-sizes. This is more sharp in case of females. It may be noted that households in the bigger farm-sizes, on an average, belong to the higher income brackets (see Chapter 6). Therefore, the decline in females MWPR with the increase in household farm-sizes perhaps corroborates the generally held belief that the participation of females in gainful activities is considered permissible only in case of dire necessity.⁶

In brief, the evidences on the worker participation rates reveal that a high proportion of (both) males and females in the area take part in economic activities. Although a good number of persons in the 0 - 14 age group participate in economic activities, the proportion of such population is relatively higher in group-B hamlets than in group-A hamlets. This implies a relative deprivation in the matter of schooling for the group-B hamlets. The participation rates according to the household farm sizes show that in group-A hamlets, the participation rates tend to increase upto a point after which it starts declining with the increase in household farm-sizes. In group-B hamlets, on the other hand, the participation rates, particularly among females, tend to decrease with the increase in household farm-sizes.

III

Distribution of Workers by Industry

In this section an attempt is being made to examine the inter-temporal changes in the composition of the working force in the area under study. Since the 1981 census does not provide detail information on the industrial distribution of workers,⁷ the comparison is being made between the 1971 census data and our sample data collected in 1983.

Sectoral composition : As table 7.4 indicates, a big shift of workers from primary to secondary and tertiary sectors has taken place during the period 1971 - 1983. This feature is more prominent in group-A than in group-B hamlets. For instance in group-A hamlets, the percentage of working force engaged in primary sector went down from 74.89 in 1971 to 45.22 in 1983, while during the same period the percentages in secondary and tertiary sectors rose from 2.06 to 24.77 and 23.05 to 30.01 respectively. In group-B hamlets, the share of the primary sector declined from 98.22 to 79.93 and the share of the secondary and tertiary sectors increased from 0.33 to 10.54 and 1.45 to 9.52 respectively.

Table 7.4 : Industrial Distribution of Workers (%), 1971 and 1983.

Industry Group	Group-A Hamlets		Group-B Hamlets	
	1971	1983	1971	1983
1. Primary Sector	74.89	45.22	98.22	79.93
i. Cultivators.	25.51	0.87	62.07	34.35
ii. Agricultural Labourers.	23.66	-	35.93	31.97
iii. Allied Activities.	25.72	44.35	0.22	13.61
2. Secondary Sector	2.06	24.77	0.33	10.54
iv. Mining and quarrying	-	21.30	-	10.54
v. Manufacturing	1.65	2.17	0.22	-
vi. Construction	0.41	1.30	0.11	-
3. Tertiary Sector	23.05	30.01	1.45	9.52
vii. Trade & Commerce	9.88	16.96	-	3.74
viii. Transports, etc.	0.41	3.48	-	-
ix. Other services	12.76	9.57	1.45	5.78
All	100.00	100.00	100.00	100.00

Source: Census Data for 1971, and Field Survey Data for 1983.

The share of the secondary sector has gone up during the period because of the growing importance of mining and quarrying activity in the area. It is important to note that although mining and quarrying (limestones excavation) has been taking place from time immemorial,⁸ but no workers were reported to have been engaged in this activity during 1971 census. This is possibly due to the suspension of limestones excavation (which is almost exclusively meant to meet the demand in Sylhet district, now in Bangladesh) during the period of the Bangladesh liberation war in early seventies. However, few years after Bangladesh attained its independence, export of limestones from this area was resumed. The growing demand of limestones in Bangladesh and their abundant deposits in the area has enhanced the importance of limestones excavation in the area. As on 1983, about 21 per cent and 10 per cent of workers in group-A hamlets and group-B hamlets respectively were engaged in limestones quarries.

In the tertiary sector, only 'trade and commerce' registered and upward movement in both the hamlet groups. During the period 1971 - 83, the share of this activity went up by about 7 percentage points in group-A hamlets and about 4 percentage points in group-B hamlets. The increase in the proportion of workers engaged in this activity is partly due to the improvement of road transport and marketing during the period and partly due to the

resumption of export of limestones and horticultural products to Bangladesh. However, it may be noted that although a shift in working force has taken place from primary sector to secondary and tertiary sectors, but this shift has not been able to make a significant change in the composition of working force in group-B hamlets as it has been in group-A hamlets. During 1983, about 80 percent of workers in group-B hamlets have been found to be depending on primary sector activities.

The differences in the inter-sectoral shift between the two hamlet groups suggest, firstly, that notwithstanding the legal ownership of land asset, group-A households do not seem to take much active interest in agricultural activities other than plantation and horticultural activities. Most of their paddy lands have been leased out to group-B hamlets for cultivation. In group-A hamlets, almost the entire working force in primary sector is engaged in plantation etc (allied activities), whereas in group-B, out of 80 per cent primary workers, as many as 34 and 32 per cent are engaged as cultivators and agricultural labourers respectively. In chapter 6 (section II) we have seen that source-wise, agriculture (in the context of group-A hamlets, it is plantations) yields the highest proportion of income followed by wage and trade income. It has also been seen

that the highest mean value of income for group-A households comes from trade and commerce followed by rental income. All these suggests a sort of specialised activities in plantation (by employing wage labour whenever necessary) and in trade and commerce.

Secondly, households in group-B hamlets on the other hand, because of legal and institutional constraint in the ownership of land asset, are left with fewer opportunities to fall back on. Some decline in the proportion of agricultural workers as well as of cultivators is suggestive of spilling of the excess manpower in agriculture to some non-agricultural activities. It is also to be recalled that in case of group-B hamlets, income from agriculture and wages form the two most important sources of income, whether one looks from the mean value or from the source-composition of income (Chapter 6, Section II).

IV

Distribution of Workers by Activity

The distribution of workers by activity status is considered important for and relevant to the measurement and study of working force as well as the level of unemployment. In particular, it is necessary to distinguish the unpaid family workers from others because the unpaid family workers tend to be predominantly females and young children and are not always available for work outside their family enterprises. The same is probably true of the self-employed, although perhaps to a lesser extent, because 'prima facie', a self-employed person might be able to change his vocation and status more easily than a family worker who has other obligation.¹⁰

In this section, an attempt is being made to examine the distribution of workers according to their activity status. For this purpose, workers were classified into the following categories:

1. those workers who are engaged in self-employed activities ,

- ii. those who are working as wage-labourers on daily basis,
- iii. those who are working as unpaid helpers in family farms or enterprises, and
- iv. those who are working as salaried workers.

Quantitatively, the last category is not very important for our study since a negligible proportion of workers are reported to belong to this category in group-A hamlets and in group-B hamlets none is reported as salaried workers.

The distribution of workers according to the above categories is presented in tables 7.5a and 7.5b. It is seen from the tables that in group-A hamlets, the proportion of workers in self-employed activities is numerically the most important, followed by wage labourers and unpaid family helpers. In group-B hamlets, the proportion of workers engaged as wage labourers is numerically the most significant, followed by self-employed workers and unpaid helpers. However, if the data on the distribution of the activity of the workers are examined by the land possession status of the households, an interesting feature of the working force emerge. As expected, it is seen that among the landless the majority of the workers are engaged as wage-labourers.

Table 7.5 ^a : Activity Distribution of Workers by Household Farm-Sizes.(Group-A Hamlets)

Sl. No.	Household Farm-Sizes	Self employed Activities	Wage employed Activities	Unpaid Family Helpers	Total
<u>MALES</u>					
1.	Landless	3(21.43)	10(71.43)	1(4.17)	14(100.00)
2.	Marginal	30(40.54)	33(44.59)	8(10.81)	74(100.00)
3.	Small	7(46.67)	4(26.67)	2(13.33)	15(100.00)
4.	Medium	5(62.50)	3(37.50)	-	8(100.00)
5.	Big	13(86.67)	-	2(13.33)	15(100.00)
	ALL	58(46.03)	50(39.68)	13(10.32)	126(100.00)
<u>FEMALES</u>					
1.	Landless	-	10(100.00)	-	10(100.00)
2.	Marginal	19(35.85)	22(43.32)	12(22.64)	53(100.00)
3.	Small	9(56.25)	3(18.75)	4(26.75)	16(100.00)
4.	Medium	7(50.00)	4(28.57)	2(14.29)	14(100.00)
5.	Big	6(54.55)	-	4(36.36)	11(100.00)
	ALL	41(39.42)	39(37.51)	22(21.15)	104(100.00)
<u>PERSONS</u>					
1.	Landless	3(12.50)	20(83.33)	1(4.17)	24(100.00)
2.	Marginal	49(38.58)	55(43.31)	20(15.75)	127(100.00)
3.	Small	16(51.61)	7(22.58)	6(19.35)	31(100.00)
4.	Medium	12(54.55)	7(31.82)	2(9.09)	22(100.00)
5.	Big	19(73.03)	-	6(23.08)	26(100.00)
	ALL	99(43.04)	89(38.70)	35(15.22)	230(100.00)

Note : Figures in parenthesis are percentages.

** In some cases the total is not equal to 100.00, because the salaries have not been tabulated.

Table 7.5_b : Activity Distribution of Workers by Household
Farm sizes .

(Group-B Hamlets)

Sl. No.	Household Farm-size	Self employed activities	Wage employed activities	Unpaid family helpers	Total
<u>MALES</u>					
1.	Landless	9(8.26)	98(89.91)	2(1.83)	109(100.00)
2.	Marginal	14(63.64)	4(18.18)	4(18.18)	22(100.00)
3.	Small	7(53.85)	-	6(46.15)	13(100.00)
4.	Medium	15(41.67)	1(2.78)	10(55.56)	36(100.00)
5.	Big	8(66.67)	-	4(33.33)	12(100.00)
	ALL	53(27.60)	103(53.64)	36(18.76)	192(100.00)
<u>FEMALES</u>					
1.	Landless	9(12.33)	64(87.67)	-	73(100.00)
2.	Marginal	1(12.50)	-	7(87.50)	8(100.00)
3.	Small	-	-	7(100.00)	7(100.00)
4.	Medium	-	1(7.69)	12(92.31)	13(100.00)
5.	Big	-	-	1(100.00)	1(100.00)
	All	10(9.80)	65(63.73)	27(26.47)	102(100.00)
<u>PERSONS</u>					
1.	Landless	18(9.89)	162(89.01)	2(1.10)	182(100.00)
2.	Marginal	15(50.00)	4(13.33)	11(36.67)	30(100.00)
3.	Small	7(35.00)	-	13(65.00)	20(100.00)
4.	Medium	15(30.61)	2(4.08)	32(65.31)	49(100.00)
5.	Big	8(61.54)	-	5(38.46)	13(100.00)
	ALL	63(21.43)	168(57.14)	63(21.63)	294(100.00)

Note Figures in parentheses are percentages.

For instance, among the landless about 83 per cent of the workers in group-A hamlets and about 89 per cent in group-B hamlets are reported to be engaged as wage-labourers. This implies that the resource-less households in both the hamlet groups depend on wage employment activities, and therefore, are vulnerable to seasonal variation in employment and hence on their earnings.

Among the operating households, the proportion of workers engaged in self-employed activities and as family helpers tends to be numerically important with the increase in household farm-sizes; and the proportion of wage-labourers declines with the increase in farm sizes.

Further, the proportion of workers engaged as unpaid helpers in family farms or enterprises is relatively higher in group-B hamlets than in group-A hamlets. In group-A hamlets, the proportion of male and female workers engaged as unpaid helpers is about 10 per cent and 21 per cent respectively. The respective percentages in group-B hamlets are about 19 and 26. A relatively higher proportion of workers, in particular females, engaged as

helpers in group-B hamlets reflects the unwillingness of workers (unless economically compelled) to work outside their own farms.¹¹ It may also be noted that the predominance of self-employed and helpers in family farms and enterprises among the operating households may be the reason, as we shall see in the next section, for a relatively higher employment level (or duration of employment) among the operating households, particularly for those in the bigger farm sizes. Conversely, a relatively lower level of employment among the landless may be due to their dependence on wage employed activities,

Employment SituationCriteria for identifying the unemployed and the under-

employed : According to Raj Krishna, there are four major criteria by which a person may be identified as unemployed or under-employed. These are:

- i. The Time Criterion : according to which a person is considered as unemployed or under-employed if he is gainfully occupied during the year for a number of hours (or days) less than some normal or optimal hours (or days) defined as full employment hours or days;
- ii. The Income Criterion : according to which a person is considered as unemployed or under-employed if he earns an income per year less than some desirable minimum;
- iii. The Willingness Criterion : according to which a person is considered as unemployed or under-employed if he is willing to do more work than

he is doing at present, he may either be actively searching for more work or be available for more work if it is offered on terms to which he is accustomed; and,

- iv. The Productivity Criterion : according to which a person is considered as unemployed or under-employed if he is removable from his present employment in the sense that his contribution to output is less than some normal productivity, and therefore, his removal would not reduce output if the productivity of the remaining workers is normalised with minor changes in techniques and/or organisation.¹²

Each of the above criteria would throw different estimates of unemployment or under-employment and a combination of two or more of these would give us many more estimates. However, the basic approach adopted by the National Sample Survey Organisation (NSS) in its labour force surveys was the combination of the Time and Willingness criteria. For instance, the NSS 27th and the 32nd rounds have adopted the following alternative approaches in measuring unemployment and under-employment:

- i. Usual status approach : which is meant to measure the usual activity status -- employed or unemployed or outside the labour force of those covered by the survey. Thus the activity status is determined with reference to a longer period than a day or a week.¹³ Persons reported to be unemployed in terms of their usual activities were likely to be 'chronically unemployed', and as such estimation of their numbers was considered important.
- ii. Weekly status approach : where the activity status is determined with reference to a period of preceding seven days. A person who reports having worked at least for one hour on any day during the reference week while pursuing a gainful occupation was deemed to be employed. A person who did not work even for one hour during the reference week but was seeking or available for work was deemed to be unemployed.
- iii. Daily status approach : under which persons classified as 'employed' during the reference week were asked about their activities during each day of the reference week. A person who worked at least for one but less than four hours was considered having worked for half a day. If worked for four hours or more during a day, he was considered as

employed for the whole day. This approach gives a more comprehensive measure of unemployment and under-employment of the 'currently employed'. Once again, we can estimate the person-days of unemployment according to various usual status of the labour force or different categories of households.

Estimates of unemployment in rural Meghalaya: Table 7.6 shows the incidence of unemployment according to three alternative approaches, as well as the labour force participation rates for rural areas of the state and India. As seen from the table, the labour force situation in the state is different from the all-India situation. The participation rates in the state is higher than the all-India level and they are significantly higher in case of females. Because of high participation rates, the unemployment problem in the state is much less compared to the all India level. It may be noted that data on the percentage distribution of working persons by intensity of work in the state (Table 7.7) also corroborates this. Considering the fact that the majority of the Christians do not work on sundays, and therefore their full-time working days are only 6 days in a week, the proportion of workers who suffered from not having full-time work is found to be insignificant.¹⁴ In short, we may say that the problem of unemployment and under-employment in the state is not acute compared to the all-India situation.

Table 7.6 : Incidence of Unemployment in Rural Areas of Meghalaya and India, 1977 - 78.

Sex	<u>Usual Activity Status</u>		<u>Weekly Activity Status</u>		<u>Daily Activity Status</u>	
	Meghalaya	India	Meghalaya	India	Meghalaya	India
<u>(A) Incidence of Unemployment</u>						
Males	0.21	2.22	0.21	3.57	0.30	7.12
Females	0.15	5.52	-	4.13	0.50	9.18
<u>(B) Percentage of Unemployed</u>						
Males	0.14	1.41	0.14	2.23	0.18	4.33
Females	0.10	1.68	-	1.16	0.02	2.28
<u>(C) Labour Force Participation</u>						
Males	66.55	63.66	65.77	62.43	60.96	60.88
Females	62.83	30.51	60.00	28.06	51.92	24.84

Source: Government of Meghalaya, 32nd Round NSS on Employment and unemployment in Meghalaya and India, July, 1977 - June, 1978, Directorate of Economics, Statistics and Evaluation, Meghalaya - 1984.

Table 7.7 : Percentage Distribution of Working Persons by Intensity of Work in a Week : Rural Meghalaya.

Nos. of days worked during the week	Males	Females	Persons
upto 3 days	1.23	2.45	1.74
3 - 4 days	2.83	5.49	3.92
4 - 5 "	4.89	9.38	6.74
5 - 6 "	25.85	26.13	25.96
6 - 7 "	65.20	56.55	61.64
Total	100.00	100.00	100.00

Source: NSS, 38th Round, Quick Tabulation, quoted in Government of Meghalaya, Seventh Five Year Plan, 1985-90, Vol.I, page-40.

Employment situation in the border areas: In the forgoing sections, it was established that the majority of the landless and the marginal farm households depend (their living) on wage-occupations, while households with adequate land base depend on self-employment activities. For households depending on wage-occupation, their level of living (or income) is directly related not only with wage rates but also on the number of days the earning members of the households are employed. It is, however, an acknowledged fact that employment opportunities in the rural areas in general, and wage employment opportunities in particular, are highly uncertain and discontinuous. During the peak season, the demand for labour is in general high enough to provide adequate wage employment. But during the lean season, the demand for labour is too low with the result that wage labour gets employment for limited number of days only. Our investigation into the labour force situation in the area, although it reveals the absence of the 'wholly unemployed' persons, shows that a good number of persons could not find adequate employment through out the reference period of one week. They get some work on some days and are looking for work on other days during the same week. Still others reported that even though they were looking for work (wage-employment), but during the days when work was not available, engaged themselves in some other gainful but less remunerative

activities. Such persons who reported about the lack of adequate employment opportunities, however, were found to be more frequent among the non-indigenous (group-B hamlets) than among the indigenous population (group-A hamlets); within a hamlet group, they are more frequent among the landless and the marginal farm households; and between seasons, they are more frequent during the lean season than in the peak season. In other words, although there is no 'wholly unemployed', yet some workers in the area suffered from lack of adequate employment opportunities. This section, therefore, seeks to examine the employment situation in the border areas of Khasi Hills, in the light of our field investigation data. But unlike the available estimates on the incidence of unemployment and the percentage of the unemployed, our study confined itself only with the level of employment among the different categories households during the reference week. The employment level is examined not from the level of individual worker but from the employment level of household. This is done because it is felt that the standard of living (or earning) of the households depend much on the level of household income, which is directly related with the level of employment of the working members in the household. But larger household with relatively more workers will

obviously have higher level of employment than smaller households with relatively fewer workers. Therefore, to standardise the influence of family size on the household employment level, the latter is expressed in terms of person-days employment per working member in the household.

For this purpose, households belonging to different farm-sizes were first classified into two occupational categories, viz., the self-employed and the wage-employed households. The classification of households into these two occupational groups is based on the income-sources composition of the households. If the annual household income from self-employment activities is higher than income from wage-employment activities, the household is categorised as self-employed. On the other hand, if income from wage-employment is higher than income from self-employment, the household is classified as wage employed. However, if the income from two sources are equal, the occupation of the most senior earning member is taken as the household occupation. Having classified the households into the two occupational groups, the average level of employment is then ascertained for each category of households (i. e., by farm size). The employment level for

each category of households is arrived at by dividing the total person-days employed by the total number of workers in the given category. One person-day employment is defined as a whole day employment for a worker, which is approximately equivalent to 8 hours a day; and half day employment is taken as half person-day employment. On the distribution of household by level employment, first we computed the average employment per working member in the household, which is arrived at by dividing the total person-days employed by all working members in the household. The levels of employment under which households have been classified as less than 4 days, 4 days but less than 4.5 days, 4.5 days but less than 5 days, and 5 days and above. Following the above methodology, the person-days employed and the distribution of households by level of employment are presented in tables 7.8 and 7.9 respectively. The important inferences emerging from the tables are the following;

- i. Although the employment level in the area is reasonably high in both the rounds of survey it is relatively higher during the second round than in the first round of survey. This feature is observed in all categories of households. Such a phenomena reflects that seasonal variation in employment opportunities in the area affect all categories of households.
- ii. On an average, the employment level per working member in both the hamlet groups is more or less

**Table 7.8 : Person-Days Employed Per Worker During A Reference Week
By Household Occupation and Farm-Sizes.**

Sl. Household No. Farm-Sizes	Group-A Hamlets			Group-B Hamlets		
	Self employed occupation	Wage employed occupation	Total	Self employed occupation	Wage employed occupation	Total
<u>First Round of Survey</u>						
1. Landless	4.75	4.37	4.50	4.73	4.30	4.35
2. Marginal	4.28	4.51	4.36	5.04	4.80	5.00
3. Small	4.71	-	4.71	4.55	-	4.55
4. Medium	4.23	-	4.23	4.69	-	4.69
5. Big	4.69	-	4.69	5.23	-	5.23
All	4.44	4.48	4.45	4.80	4.31	4.53
<u>Second Round of Survey</u>						
1. Landless	4.62	4.81	4.75	5.14	4.53	4.61
2. Marginal	4.75	4.67	4.72	4.84	5.60	4.97
3. Small	4.87	-	4.87	4.95	-	4.95
4. Medium	5.00	-	5.00	4.76	-	4.76
5. Big	4.92	-	4.92	5.46	-	5.46
All	4.83	4.71	4.80	4.94	4.57	4.74

Table 7.9 ^a : Percentage Distribution of Households by Level of Average Employment Per Working Member During a Reference Week.

(Group-A Hamlets)

Sl. Categories No.	Less than 4.00 days	4.00 -- 4.49 days	4.50 -- 4.99 days	5.00 + days	All
<u>First Round of Survey</u>					
1. Landless	9.09	27.27	18.18	45.45	100.00
2. Marginal	12.77	36.17	17.02	34.04	100.00
3. Small	-	18.18	36.36	45.45	100.00
4. Medium	20.00	10.00	30.00	40.00	100.00
5. Big	12.50	12.50	12.50	62.50	100.00
6. Self-employed	10.77	27.69	20.00	41.54	100.00
7. Wage-employed	13.69	27.27	22.73	36.36	100.00
8. All households	11.49	27.59	20.69	40.23	100.00
<u>Second Round of Survey</u>					
1. Landless	-	9.09	45.45	45.45	100.00
2. Marginal	4.44	15.56	26.67	53.33	100.00
3. Small	-	18.18	27.27	54.55	100.00
4. Medium	-	-	20.00	80.00	100.00
5. Big	-	-	25.00	75.00	100.00
6. Self-employed	1.56	10.94	25.00	62.50	100.00
7. Wage-employed	4.76	14.29	38.10	42.86	100.00
All households	2.35	11.76	28.24	57.65	100.00

Table 7.9, Percentage Distribution of Households by Level of Average Employment Per Working Member During a Reference Week.

(Group-B Hamlets)

Sl. No.	Household categories	Less than 4.00 days	4.00 - 4.49 days	4.50 - 4.99 days	5.00 + days	Total
<u>G First Round of Survey</u>						
1.	Landless	15.87	22.22	20.63	41.27	100.00
2.	Marginal	-	8.33	8.33	83.33	100.00
3.	Small	16.67	16.67	16.67	50.00	100.00
4.	Medium	7.14	21.43	28.57	42.86	100.00
5.	Big	-	-	20.00	80.00	100.00
6.	Self-employed	6.82	11.36	18.18	63.64	100.00
7.	Wage-employed	16.07	25.00	21.43	37.50	100.00
	All households	12.00	19.00	20.00	49.00	100.00
<u>Second Round of Survey</u>						
1.	Landless	16.95	13.56	18.64	50.85	100.00
2.	Marginal	8.33	16.67	8.33	66.67	100.00
3.	Small	-	-	50.00	50.00	100.00
4.	Medium	14.29	7.14	14.29	64.29	100.00
5.	Big	-	20.00	-	80.00	100.00
6.	Self-Employed	4.54	9.09	20.45	65.91	100.00
7.	Wage-employed	21.15	15.38	15.38	48.08	100.00
	All Households	13.54	12.50	17.71	56.25	100.00

iii

the same. However, if comparison is made between the self-employed and the wage-employed households, it is seen that in general, employment level is higher in the former than in the latter group of households. This feature is more sharp in group-B hamlets than in group-A hamlets.

iii. The tables also show that the proportion of households with low employment level is relatively higher in case of wage-employed than among the self-employed households. This feature too is more sharp in case of group-B hamlets than in group-A. For instance, in group-A hamlets the proportion of the self-employed and the wage-employed households with less than 4 days employment level in a week is 10.77 and 13.64 per cent respectively during the first round, and 1.56 and 4.76 per cent respectively during the second round of survey. The respective percentages in group-B hamlets is 6.82 and

16.07 during the first round and 4.54 and 21.15 during the second round survey

iv. The distribution of households by level of employment (table 7.9) indicates that although the majority of the households irrespective of any category had a high level of employment per working member, yet a good number of households particularly in group-B hamlets, reported a low level of employment. For instance, the proportion of households in group-A hamlets whose employment level per working member is less than 4 days in a week is 11.49 and 2.35 per cent during the first and second round of survey respectively; the respective proportions of such households in group-B hamlets are 12.00 and 13.54 per cent respectively.

VI

Summary

We may now briefly summarise the important points emerging from the foregoing sections. Firstly, we note that unlike group-A, in group-B hamlets there was relatively a higher labour participation rates among the age group 0 - 14, the group which should normally be in the schools. This implies a relative deprivation in the matter of education of school going children for group- B hamlets.

Secondly, during the period 1971 - 83, a big shift of workers from primary to secondary and tertiary sectors has taken place. However, this shift has not been able to make a significant change in the composition of working force in group-B hamlets as has been the case in group-A hamlets. During 1983, about 80 per cent of workers in group-B hamlets have been found to be depending on primary sector activities compared to 45 per cent in group-A hamlets.

Thirdly, the distribution of workers by activity status shows that in group-A hamlets the proportion of workers in self-employed activities is numerically the most important, followed by wage labourers and unpaid family helpers.

In group-B hamlets, on the other hand, the proportion of workers engaged as wage labourers is numerically the most important, followed by workers engaged in self-employed activities and unpaid family helpers. Almost as a corollary, the distribution of workers by land possession status of households shows that the majority of workers among the landless are engaged as wage labourers. This indicates that the resource-less people in the area (particularly in group-B hamlets) depend on wage employment activities, and are therefore more vulnerable to seasonal variation in employment opportunities and hence in their earnings and poverty level. On the other hand, the majority of the workers among the landed (mostly in group-A hamlets), particularly in the upper classes of land holdings are engaged as self-employed and family helpers.

Fourthly, a reasonably high level of employment in both the hamlet groups notwithstanding, it is noted that in group-B hamlets the proportion of unpaid family workers is relatively higher than in group-A hamlets.

Lastly, while generally employment is relatively higher in case of self-employed than among the wage-employed households, a comparison between the two categories at lower (less than 4 days a week) level of employment shows that the proportion of such low employment level households is relatively higher in case of wage-employed, and further that such difference is more sharp in case of group-B hamlets than in case of group-A hamlets (Sec. V). In other words, the wage employment which happens to be the major source of income for the majority of households in group B hamlets is found to be more subjected to the lower duration of employment and, therefore, to lower income.

Bases and References:

1. See (a) Vincent.H(1978), "Socio-economic study of Bhailyanang A village in Nagbhalaya", CISSS social Research Series, No. 16, Bangalore, pp. 48-50.
 (b) Nathov. P(ed)(1981), "Rural Development in India", Agricole, New Delhi, p.10.
 (c) Gubothkurta.S.H.(1983), "Preverty, Unemployment and Development Policy in East central Region: A case study with reference to four villages in East and West Ghadi Hills Districts of Nagbhalaya", mimeo, WNU, Stallong, p. 136.
2. Saha.J.N.(1982), "1981 Census Economic Data-A note", EPJ, p.195 and, Krishnaswamy.J(1984), "Change in the India workforce", EPJ, p.2121.
3. The invisibility characteristics of women employment can be understood from the fact that in 1978 it is estimated that out of 88.9 million women workers, only 2.5 million are employed in the organised sector, and are visible as working women.-Government of India, "Revised Draft Sixth Five Year Plan, 1978-83", Planning Commission, p. 142.

4. Eshra Sunder, "Characteristics of Female Employment: Implications of Research and Policy", EPJ, 1981, pp.863-71.
5. Sinha, J.N. (1982), op cit p.196.
6. Visaria, P(1970), "The Farmers' Preferences for Work on Family Farms", in India, Government of, "Report of the Committee of Experts on Unemployment Estimates", Planning Commission, p.185.
7. Unlike the 1971 census which gives detail information on the industrial distribution of workers in all nine activities, the 1981 census provides information on the following four broad groups only, viz., cultivators, agricultural labourers, manufacturing and other workers. At least this was the position till the time of correcting this thesis.

See: Census, 1981: Series, 14: District Census Hand Book, Parts - XIII (A&B), East Khasi Hills District.
8. Dehar, S.H. (1984), "Economic Situation During Tiroi Singh's Time", in a souvenir, published on the celebration of 150th Death Anniversary of U Tiroi Singh, Syiem of Nongkhaw, sponsored by the Khasi Cultural Society, Meghalaya Shillong, p. 4.

9. However, if we define agricultural workers so as to include also those workers who are engaged in plantations, orchards, etc. we found that in 1983 about 15 per cent of workers in group-A and about 46 per cent in group-B halets are agricultural labourers.
10. India, Govt. of. (1970), "Report of the Committee of Experts on Unemployment Estimates", op cit., p.78
11. Vicaria, P. (1970), op cit., p.185
12. Krishna, Raj. (1973), "Unemployment in India", Indian Journal of Agricultural Economics, No.3
13. In the NSS 27th round, the 'usual status' was defined as the status which the respondent pursued over a long period in the past and which is also likely to continue in future. In the 32nd round, the reference period was restricted to the preceeding 365 days.
see, (1) NSS, 27th round, Draft Report, 255/10.
(ii) Meghalaya, Govt. of. (1984), "32nd round NSS on Employment and Unemployment in Meghalaya and India, 1977 - 78", Directorate of Economics Statistics and Evaluation, Meghalaya.
14. According to the 1981 census the Christians constituted 52.62 per cent of the total population in the state. See, Meghalaya, Govt. of. (1984), "Statistical Hand Book, 1984", Directorate of Economics, Statistics and Evaluation, Meghalaya.

CHAPTER 8INCIDENCE OF POVERTY AND SOME RELATED VARIABLES

In Chapter 1, we have mentioned that there is very little information on the problem of poverty in the hill region of North-East India, and therefore, not much is known about the problem of poverty in the region. The present study which is based on primary data provided by the sample households drawn from two groups of hamlets (or census villages) in the border areas of East Khasi Hills attempts to examine the different issues related with the problem of poverty in the area. It may also be recalled that the two hamlet groups represent two different population groups whose access to productive resources (and hence income) are different from each other. The Group-A Hamlets represent the indigenous population group, and Group-B Hamlets represent the non-indigenous population group. The former own and control all land and common properties in the area, where as the latter are customarily not entitled to

own such properties. As such, the poverty incidence between the two sets of population groups may differ from each other. Further, the poverty incidence is also believed to depend on several variables whose influences vary not only between the two hamlet groups but also between seasons of the year, with the result that poverty incidence between the two hamlet groups may vary from season to season. Therefore, the estimate of poverty in the area and the association of poverty with selected socio-economic variables have been given separately for each hamlet groups in both rounds of survey.

The Chapter is divided in four sections. After presenting the methodology we followed for the study on the incidence of poverty in Section I, we set forth in Section II, on the basis of our field investigation, some evidences on the magnitude of poverty. The focus in Section III is on certain factors or variables affecting poverty. The last section sums up the major findings in the first three Section.

I

Methodology

In this section a brief description on the data used in the study, the poverty lines adopted and the measures of poverty is attempted.

The Data: As mentioned earlier, the information on the quantity of food-items consumed by the households as well as the consumption expenditure on various items was collected on a recall basis. It is a well-known fact that the information on consumption data is always subjected to problem of memory-gap of the respondents with the result that, unless the recalling period is short enough, the data collected may suffer from large deviation from the true figures. This is perhaps applicable in the case of those items available out of home-grown stock, gifts and exchanges, and items freely collected by the members of the households.³ Therefore, to overcome this problem and minimise the recalling error, the recall period we have adopted in the case of consumption data was only one month preceeding the date of survey. Further, our schedule has been framed in such a way that it includes all possible kinds of major and minor food-items available in the area.

Basing on the household consumption data, the per capita calorie consumption of each sample households is worked out with the help of information on the caloric content per unit quantity of food items.¹ In this process, items reported in

quantities consumed with the calories contained per unit of the item. Those items which were reported in terms of expenditure were first converted into quantities on the basis of average price prevailing in the area, and then the quantities derived were converted into calories. When the expenditure was given for a group of commodities such as pulses, vegetables, fishes, etc. the average retail price of the representative item for a group was used in arriving at the quantities, which were then converted into calories.

The total calories consumed by a household during the reference period of 30 days from all food items were divided by 30 to arrive at the calorie intake of the household per day, which was then divided by the household size expressed in terms of adult equivalent consumer units to give us the consumption of calories per day per consumer unit. The adult equivalent units have been worked out by using the Lusk coefficient² which removes distortions due to differences in age and sex composition of the members of the household. Similarly, the per capita consumption expenditure of households is expressed in terms of adult equivalent units.

Poverty lines: In quantifying the incidence of poverty, two criteria have been adopted in selecting the poverty lines. The first criterion relates to the actual calorie intake per consumer unit, and the second relates to the per capita monthly consumption

expenditure that ensures the selected calorie intake levels. In chapter 3 we have seen that no consensus has been reached among the experts on the minimum per capita intake of calories, with the result that the minimum necessary calorie intake is defined variously usually ranging between 1800 to 2400 calories per persons per day. This is for the obvious reason that a person of a particular age and sex on a particular day in a particular part of the country and carrying on a particular activity has a basic need vector defined by certain physical quantities of food and other essential items of consumption. The vector changes with age and sex, seasonality, type of activity and geographical and climatic features of the place".³ The debate among the statisticians and nutritionists in the country suggest that "the problem is almost intractable" and the problem can be circumvented by applying multiple poverty lines, corresponding to different calorie intake norms".⁴

Actual Calorie-intake Of the various calorie levels recommended by different experts, we have selected the following two levels as our caloric norm poverty lines. These are : 2200 and 2400 calories per day per consumer unit. The first level was adopted by Guhathakurta⁵ in his study of poverty in Khasi Hills and the second is being adopted by the Planning Commission⁶ for the estimate of poverty in rural areas of the country. The

measurement of poverty on the basis of caloric norm should not be interpreted as a measurement of under-nutrition, since it does not take into consideration many other nutritional needs. It is an economic measurement, and represents an attempt to reduce an element of arbitrariness in the specification of a minimum desirable level of living. For a measure of under-nutrition one should perhaps consider the least-cost balanced diet which provides all the required nutrients besides calories.⁷

For our study of caloric-based poverty, we have as usual made the following assumptions. Firstly, the intra-household distribution of food is assumed to be strictly in accordance with physiological needs, and that there is no discrimination against women and children or any member of a household in respect of food-intake.⁸ Secondly, items of different qualities contain the same amount of calories per unit of item.

Expenditure Levels: The next task is to find out the monthly consumption expenditure of an amount per consumer unit with which, on the average, a person can afford to buy the required amount of food that ensured the selected calorie-intake levels besides other minimum necessities. For this purpose, we regressed the household's per capita calorie intake against the corresponding per capita monthly total consumption expenditure of households by using calorie-expenditure function of the form $C = aE^b$, where C

is the calorie per capita intake of the households, E the per capita monthly total consumption expenditure of the households, a is the intercept and b is the co-efficient which shows the calorie elasticity.⁹ The above equation can also be written as : $E = (C/a)^{1/b}$. On the basis of this fitted form, the per capita monthly expenditure levels E_1 and E_2 corresponding to the calorie levels of 2200 and 2400 respectively is worked out. The estimated poverty lines corresponding to the above two calorie levels are Rs.128 and Rs.170 respectively, at current prices.¹⁰

Measures of Poverty: Having determined the poverty lines, the incidence of poverty is measured in terms of Head-count ration(H) and Sen's Index of poverty (P). The first measures shows the proportion of population who live below the specified poverty line and the second shows the severity of poverty in the area. It may be recalled that Head-count and Sen's index are respectively defined as follows :-

$$H = q^*/n; \text{ and,}$$

$$P = \frac{2}{(q^* + 1) n^2} \sum (Z - y_i)(q^* + 1 - i)$$

where q^* is the number of population below the poverty line Z, \sum stands for summation sign, n stands for the total population and y_i is the expenditure of calorie intake of the i-th unit arranged in ascending order of magnitude.¹¹

II

Magnitude of Poverty

The estimates on the magnitude and severity of poverty in the area based on both caloric norm and expenditure norms are presented in tables 8.1 to 8.3. The important points emerging from these tables are the following :-

1. A glance at tables 8.1 and 8.2 reveals that a very high proportion of population on both the hamlet groups live in poverty. For instance, with a lower norm of 2200 calories per day per consumer unit, the proportion of population in poverty ranges between 51 to 60 per cent during the slack season (first round of survey) and 48 to 55 per cent during the busy season (second round of survey). With a monthly consumption expenditure of Rs.128 per consumer unit, the proportion of population in poverty ranges between 44 to 64 per cent during the slack season and 18 to 39 per cent during the busy season. At a higher level of poverty norm of 2400 calories, the proportion of population in poverty ranges between 68 to 86 per cent during the slack season and about 72 per cent during the busy season. With a monthly expenditure of Rs.170

Table 8.1 : Incidence of Poverty - Caloric NormHead Count Ratio(H) and Sen's Index(P)

Poverty Norm	First Round of Survey		Second Round of Survey	
	H	P	H	P
<u>Group- A Hamlets</u>				
1. Caloric norm of 2200 calories per day per consumer unit.	0.514	0.076	0.546	0.067
2. Caloric norm of 2400 calories per day per consumer unit.	0.681	0.134	0.716	0.136
<u>Group- B Hamlets</u>				
1. Caloric norm of 2200 calories per day per consumer unit.	0.603	0.116	0.483	0.081
2. Caloric norm of 2400 calories per day per consumer unit.	0.861	0.190	0.728	0.137

Table 8.2 : Incidence of Poverty - Expenditure NormHead Count Ratio(H) and Sen's Index(P)

Poverty Norm	First Round of Survey		Second Round of Survey	
	H	P	H	P
<u>Group-A Hamlets</u>				
1. Expenditure norm of Rs 128 per month per consumer unit.	0.438	0.099	0.184	0.024
2. Expenditure norm of Rs 170 per month per consumer unit.	0.724	0.260	0.598	0.151
<u>Group-B Hamlets</u>				
1. Expenditure norm of Rs 128 per month per consumer unit.	0.646	0.287	0.394	0.095
2. Expenditure norm of Rs 170 per month per consumer unit.	0.895	0.469	0.619	0.235

per consumer unit, the proportion of poor ranges between 72 to 90 per cent during the slack season and 60 to 62 per cent during the busy season. It may be recalled that the proportion of the poor in rural areas of the State was 66.75 per cent during 1983.¹² Thus, compared with the State level whether or not the poverty incidence in the border areas of East Khasi Hills is higher would depend on what level we would like to measure poverty. For example, if we measure poverty at a caloric norm of 2200 or its equivalent expenditure norm, we cannot say that in the border areas the incidence of poverty is high.

- ii. Comparing the magnitude and severity of poverty in Group-A with those of Group-B Hamlets, we observe that poverty incidence is both higher and severe in the latter group of hamlets than in the former. The difference in the poverty incidence between the two hamlet groups is more sharp during the slack season than during the busy season. In the latter period, poverty incidence, particularly ~~was found~~ according to the upper norm (both under caloric norm and expenditure norm) is found to be more or less of the same magnitude in both the hamlet groups.

- iii. A higher incidence of poverty in Group-B Hamlets than in Group-A Hamlets is also observed in table 8.3. According to this table, the proportion of the 'under-fed and poor' is higher in Group-B than in Group-A Hamlets in both rounds of survey. For instance, the proportion of population deficient in both calories and expenditure levels in Group-A Hamlets and Group-B Hamlets is found to be 40 per cent and 58 per cent respectively during the slack season, and about 18 per cent and 39 per cent respectively during the busy season.
- iv. According to table 8.3, the incidence of poverty is in general higher on caloric norm than on expenditure norm. This has been found in both the rounds of survey in Group-A Hamlets and in the second round in Group-B Hamlets. If the households spent their income in accordance with their nutritional requirement, the two norms might have been expected to yield the same level of poverty incidence. However, in practice, food consumption is not entirely governed by nutritional requirement. Therefore, we observe the divergence in the poverty incidence between the two norms. It may be further be noted that higher incidence of poverty

Table 8.3 : Population Deficient and Not-Deficient in Calories and Expenditure.

(Caloric norm=2200 calories per day per consumer unit,
Expenditure norm = Rs.128 monthly consumption Expenditure per Consumer Unit.

	<u>Group-A Hamlets</u>			<u>Group-B Hamlets</u>		
	<u>Deficient in calories</u>	<u>Not-deficient in calories</u>	<u>Total</u>	<u>Deficient in calories</u>	<u>Not-deficient in calories</u>	<u>Total</u>
<u>First Round of Survey</u>						
Deficient in Expenditure	175 (40.14)	15 (3.44)	190 (43.57)	347 (57.64)	41 (6.81)	388 (64.45)
Not-deficient in expenditure	49 (11.24)	197 (45.18)	246 (56.42)	16 (2.66)	198 (32.89)	214 (35.55)
Total	224 (51.38)	212 (48.62)	436 (100.00)	363 (60.30)	239 (39.70)	602 (100.00)
<u>Second Round of Survey</u>						
Deficient in expenditure	79 (18.37)	0 (0.00)	79 (18.37)	222 (38.14)	7 (1.20)	229 (39.35)
Not-deficient in expenditure	156 (36.28)	195 (45.35)	351 (81.63)	59 (10.14)	294 (50.51)	353 (60.65)
Total	235 (54.65)	195 (45.35)	430 (100.00)	281 (48.28)	301 (51.72)	582 (100.00)

under caloric norm than on expenditure norm indicates that there are some households who, even though they have adequate expenditure (or income) level, fail to buy sufficient amount of food items containing the required amount of calories. This could happen if the households attached more importance on other necessities than food, or if they lack nutritional knowledge, and/or rigidity in the consumption of traditional food items.¹³ On the other hand, a higher incidence of poverty on expenditure norm rather than on caloric norm indicates that some households, even though they do not have sufficient amount of expenditure (or income), managed to buy food sufficient enough to meet their caloric requirement. This could happen if the households attached more importance on food than in other necessities and buy relatively cheaper but more nutritive food items. In this connection, it would be worthwhile to recall the observation by Dandekar when he said: "There would certainly be some households among the poor, defined by a certain expenditure level, who with better household management and better priorities of expenditure did provide for themselves diets adequate at least in respect of calories. The

contrary is also true. There would be some households who were not poor by the same definition but nevertheless, by mismanagement of their households and wrong priorities of expenditure, failed to provide for themselves diets adequate even in respect of calories".¹⁴

v. The tables also show that poverty incidence varies with changes in seasons, and the variation seems to be more prominent when poverty is measured in terms of expenditure norm. For instance, the percentage of persons below the poverty line of a monthly consumption expenditure of Rs.128 per consumer unit went down from a level of about 44 per cent during the slack season to a low level of 18 per cent during the busy season in Group-A Hamlets, and from a level of about 65 per cent to about 39 per cent during the same period in Group-B Hamlets. In other words the difference in the incidence of poverty level during the two seasons is about 25 percentage points in both the Hamlet groups. This implies that the effect of seasonality in poverty is more or less the same in both the Hamlet groups.

A dip in poverty level (to 18 per cent) in Group-A Hamlets during the busy season apparently seems a bit unusual. However, as the wage rate given in Appendix A will reveal, a lower

level of poverty in Group-A Hamlets seems to be due to a relatively high wage rate applicable to wage labourers in Group-A Hamlets. We should add here that although the wage rate seems apparently high, the activities being very much seasonal one, the dip in poverty may therefore, be of a very temporary phenomenon.

Coming back to the variation in poverty incidence, we observed that if poverty is measured in terms of caloric norm, seasonality has no impact on poverty incidence in Group-A Hamlets, which thus reflect that food habits, etc., does not undergo any perceptible change because of possible seasonal variation in expenditure (or income) level of households. In Group-B Hamlets, on the other hand, there is a shift (about 12 percentage points) in the proportion of the poor with changes in seasons, although the shift is not that sharp as in case of expenditure norm.

Further, if we define the 'poor' as those persons who were deficient in both calorie-intake and expenditure levels (table 8.3), it is observed that seasonality has more or less and equal effect on the poverty incidence in both the Hamlet groups. For instance, the percentage of the 'poor' in Group-A Hamlets declined from the level of about 40 per cent during the slack season to about 18 per cent during the busy season ---

a fall of about 22 percentage points; and in Group-B Hamlets, the percentage of the poor⁴ fell down from the level of 58 per cent to about 38 per cent during the two period----- a fall of about 20 per-centage points. In short, we may conclude that seasonality has the same impact on the poverty incidence in both the hamlet groups.

III

Factors Affecting Poverty

Having indicated the magnitude of poverty in the area, our next task would be to identify the poor and examine the causes of poverty. These two issues can be inter-related and hence may be generally taken up together. It is widely believed that poverty is influenced by a host of factors such as asset position of the household, number of members and workers in the household, number of days employed per working member in the household, wage rates, educational level of the earners in the household, type of occupation the household etc. This section attempts to examine to what extent poverty (both under caloric norm and expenditure norm) may be attributable some of the above variables. For this purpose, we have adopted two types of analysis, viz., the Chi-square test and the multiple regression and partial correlation analysis.

To examine the association between poverty with other variables through the Chi-square test, two-by-two contingency tables have been constructed (see Appendix 8.Aa and 8Ab). The variables selected for examining the association and the mode of classification of the variables are as follows:-

<u>Name of a Variable</u>	<u>Mode of classification</u>
1. Land possession.	i. Landless; and ii. Landed.
2. Possession of limestone quarries.	i. Yes, and ii. No.
3. Possession of livestock	i. Yes; and ii. No.
4. Number of dependants per working members in a household.	i. Two and below; and, ii. Above two.
5. Family size	i. Four and below; and, ii. Above four.
6. Number of days employed per working member in a household during the reference week.	i. Four days and below; and, ii. Above four days.
7. Educational level.	i. Illiterate; ii. Primary and middle level; and, iii. High School and above.
8. Household occupation.	i. Self-employed households; and, ii. Wage-employed households.

The association is examined separately for each hamlet group in both rounds of survey. The Chi-square test value is computed by the following formula:

$$\chi^2 = \sum \frac{(f_o - f_e)^2}{f_e}$$

where, f_o = the observed frequencies, and,
 f_e = the expected frequencies.

The computed values of the Chi-square are then compared with the theoretical value (table value) for a given degrees of freedom at .05 level of significance. If the theoretical value is less than the computed value, the association between poverty and the variable considered is taken as significant. On the other hand, if the theoretical value is greater than the calculated value, the association is taken as insignificant. The computed Chi-square values are presented in tables 8.4a and 8.4b. The results that emerged from the Chi-square test are as follows :-

1. In group-A Hamlets, the association of poverty (either measured in terms of caloric norm or expenditure norm) with possession of limestone quarries, family size, level of employment, educational level and household occupation is found to be insignificant in both rounds of survey.

Table 8.4_a : Association of Poverty With Other Variables
(Group-A Hamlets)

Sl. No. with	Association of Poverty Degree of freedom	Chi-square values calculated				
		poverty norm =2200 calories per day per consumer unit		poverty norm =Rs.128 monthly expenditure per consumer unit		
		First round	Second round	First round	Second round	
1.	Land possession	1	4.14	3.09	8.56	0.00
2.	Possession of Lime stones.	1	28.05	31.11	22.32	13.91
3.	Possession of Livestocks.	1	1.55	1.56	0.06	0.03
4.	Nos. of dependants per working member in a household	1	0.08	0.67	1.19	0.48
5.	Family size	1	68.74	33.08	39.96	28.51
6.	Nos. of days employed per worker in a household per week.	1	88.67	40.86	86.41	174.11
7.	Educational level	2	10.93	35.60	12.08	6.40
8.	Household occupation	1	12.86	6.31	9.99	10.32

Note:- The table values of Chi-square for one and two degrees of freedom at selected probability levels are :

Values of P					degree of freedom
.05	.025	.01	.005	.001	
3.841	5.024	6.635	7.879	10.827	1
5.991	7.378	9.210	10.597	13.815	2

Table 8.4, Association of Poverty With Other Variables.(Group-B Hamlets)

Sl. No.	Association of Poverty with	Degree of Freedom	poverty norm =2200 calories per day per consumer unit		poverty norms =128 monthly expenditure per consumer unit	
			First Round	Second Round	First Round	Second Round
1.	Land Possession	1	132.85	120.11	147.00	137.34
2.	Possession of Live-stocks.	1	73.32	129.26	73.79	77.66
3.	Nos. of dependants per working member in a household	1	30.92	42.86	16.74	9.77
4.	Family Size	1	6.05	14.32	0.83	35.09
5.	Nos. of days employed per worker in a house-hold per week.	1	20.18	86.67	6.74	102.61
6.	Household occupation	1	182.10	150.98	181.02	175.51

Note:- The table values of χ^2 for one degree of freedom at selected probability levels are :-

Values of P					degree of freedom.
.05	.025	.01	.005	.001	
3.841	5.028	6.635	7.879	10.827	1

The association between poverty and possession of livestock and number of dependants per working member in the household is found to be insignificant in both rounds of survey. The association with land possession is found to be significant only during the first round of survey.

ii. In Group-B Hamlets, the test shows that, with the exception of family size which does not have a significant association with poverty, all variables considered are found to be significantly associated with poverty in both the rounds of survey.

Although the Chi-square test is widely used to examine the significance of association between two variables in question, however, the test is beset with the following two important limitations. Firstly, the tests are likely to be dependent upon the choice of the poverty line and the way in which the variable considered is classified into two levels. For instance, G. Parthasarathy et al. in their study of "Character of poverty among the rural poor" found that with a poverty line of Rs.450, only size of operational holding is associated with poverty. But with a lower poverty line of Rs.300 it is found that poverty is significantly associated with land holding, family size, worker dependent ratio and the level of employment.¹⁵ What is true of poverty line is also equally true with other variable selected.

Secondly, in the Chi-square test the association is being examined between two variables at a time, that is, between poverty and another variable. It is possible that the variable examined is itself being influenced by some other variables, and therefore, the Chi-square test may not be able to detect the true degree of association between poverty and the variable considered.

If poverty is simultaneously influenced by many independent variables, it is through multiple and partial correlation analysis rather than Chi-square test that we hope to detect the influences of each independent variable. Hence an attempt has been made in this section to detect the relationship between poverty (calorie-intake) and other variables, using the following step-wise regression functions :-

1. $X_0 = f(X_1)$
2. $X_0 = f(X_1, X_2)$
3. $X_0 = f(X_1, X_2, X_3)$
4. $X_0 = f(X_1, X_2, X_3, X_4)$

where X_0 stands for the per capita calorie intake per day per consumer unit, X_1 the monthly per capita consumption expenditure per consumer unit, X_2 the level of employment per working member in a household during a period of 30 days, X_3 the size of household operational land holding per consumer unit, and X_4 is the family size expressed in terms of adult equivalent units.

The purpose behind using the stepwise regression functions is to explore the influence of additional variable on the dependent variable. That is to know whether the additional regressor has significantly improved the explanation in the variation of X_0 . Secondly, the use of of stepwise regression function enables us to capture the influence of inter-correlation among the explanatory variables on the stability or significance of the net regression co-efficients.

The inclusion of independent variable in the stepwise regression is determined from the degree of correlation with dependent variable X_0 . Thus in the first step (function), X_1 is chosen because it is the most highly correlated variable with X_0 (see table 2.Ac). For selecting the second variable we calculated the first-order partial correlation co-efficients between X_0 and the remaining three independent variables, keeping X_1 constant. Based on the values of first-order correlation co-efficients X_2 is selected as the second explanatory variable. Similarly, in the next step we computed the second-order correlation co-efficients between X_0 and the remaining two independent variables, keeping X_1 and X_2 constant. The values of the second-order partial correlation co-efficients shows that X_3 is relatively more correlated than X_4 . Therefore, X_3 is included in the third stage, followed by X_4 in that next step.

The correlation co-efficients are computed by using the following formulae:

Zero-order correlation co-efficients:

$$r_{01} = \frac{\sum x_0 x_1}{\sqrt{\sum x_0^2} \sqrt{\sum x_1^2}}$$

$$r_{02} = \frac{\sum x_0 x_2}{\sqrt{\sum x_0^2} \sqrt{\sum x_2^2}}$$

$$r_{03} = \frac{\sum x_0 x_3}{\sqrt{\sum x_0^2} \sqrt{\sum x_3^2}}$$

$$r_{04} = \frac{\sum x_0 x_4}{\sqrt{\sum x_0^2} \sqrt{\sum x_4^2}} ; \text{ where } x = x_1 - \bar{x}$$

First-order correlation co-efficients:

$$r_{02.1} = \frac{r_{02} - r_{01} r_{12}}{\sqrt{1 - r_{01}^2} \sqrt{1 - r_{12}^2}}$$

$$r_{03.1} = \frac{r_{03} - r_{01} r_{13}}{\sqrt{1 - r_{01}^2} \sqrt{1 - r_{13}^2}}$$

$$r_{04.1} = \frac{r_{04} - r_{01} r_{14}}{\sqrt{1 - r_{01}^2} \sqrt{1 - r_{14}^2}}$$

Second-order correlation co-efficients:

$$r_{03.12} = \frac{r_{03.1} - r_{02.1} r_{23.1}}{\sqrt{1 - r_{02.1}^2} \sqrt{1 - r_{23.1}^2}}$$

$$r_{04.12} = \frac{r_{04.1} - r_{02.1} r_{24.1}}{\sqrt{1 - r_{02.1}^2} \sqrt{1 - r_{24.1}^2}}$$

It may be noted that other correlation co-efficients are also computed in the similar manner.

The various correlation and regression measures adopted in this analysis are:

- i. An estimating equation which describes the functional relationship between the variables chosen;
- ii. A measure of the divergence of the actual values of the dependent variable from their estimated values, or the standard error of estimate;
- iii. A measures of the degree of relationship between the variables and the relative amount of variation in the dependent variable which has been explained by the estimating equation; and,
- iv. Tests of significance.

The Estimating Equations:

$$1. X_0 = b_{0.1} + b_{01}X_1$$

$$2. X_0 = b_{0.12} + b_{01.2}X_1 + b_{02.1}X_2$$

$$3. X_0 = b_{0.123} + b_{01.23}X_1 + b_{02.13}X_2 + b_{03.12}X_3$$

$$4. X_0 = b_{0.1234} + b_{01.234}X_1 + b_{02.134}X_2 + b_{03.124}X_3 \\ + b_{04.123}X_4$$

The meaning of b's and their subscripts: The b's values indicate the effect on the dependent variable associated with a variation in the accompanying independent variable when allowance has been made for the other independent variable (s). As an example, $b_{01.2}$ estimates the variation in X_0 associated with a unit change in X_1 , keeping X_2 constant; and $b_{02.1}$ estimates the variation in X_0 associated with a unit change in X_2 keeping X_1 constant. The other coefficients may be interpreted in the same way, the figures to the left of the decimal point in the subscripts indicate the dependent and accompanying variable, whereas the figures to the right indicate variables that are held constant. The b_0 's are the hypothetical values of the dependent variable when the values of the independent variables considered have a value of zero.

The Beta Co-efficients: Since the b 's values are expressed in the original units of the variables, and the units of the variables considered are different, their respective variations are also different. As a result, the b 's do not indicate the actual relative importance of each independent variables. Consequently, we turn to a measure called the beta co-efficients, which recognize the dissimilarity of the units and their variances. These co-efficients are defined as follows :-¹⁶

$$\text{Equation 1: } B_1 = b_{01}(s_1/s_0)$$

$$\text{Equation 2: } B_1 = b_{01.2}(s_1/s_0)$$

$$B_2 = b_{02.1}(s_2/s_0)$$

$$\text{Equation 3: } B_1 = b_{01.23}(s_1/s_0)$$

$$B_2 = b_{02.13}(s_2/s_0)$$

$$B_3 = b_{03.12}(s_3/s_0)$$

$$\text{Equation 4: } B_1 = b_{01.234}(s_1/s_0)$$

$$B_2 = b_{02.134}(s_2/s_0)$$

$$B_3 = b_{03.124}(s_3/s_0)$$

$$B_4 = b_{04.123}(s_4/s_0)$$

where s stands for the sample standard deviation of the variable indicated by the subscript, and defined as :

$$s = \sqrt{\frac{\sum(x - \bar{x})^2}{n - 1}}$$

The total variation, standard error of estimate and the co-efficient of multiple variation: The total variation of the dependent series is the sum of two quantities --

- i. The explained variation or the variation in the estimated values of that series from their mean; and,
- ii. The unexplained variation or the variation of the actual values from the estimated values.

The total variation for the respective equations are, therefore, defined as follows :

Equation 1:
$$\sum x_0^2 = \sum \hat{x}_0^2 + \sum e^2;$$

where,
$$\sum x_0^2 = \sum (x_0 - \bar{x}_0)^2,$$

$$\sum \hat{x}_0^2 = \sum (\hat{x}_0 - \bar{x}_0)^2$$

$$= b_{01} \sum x_0 x_1$$

and,
$$\sum e^2 = \sum (x_0 - \hat{x}_0)^2$$

$$= \sum x_0^2 - \sum \hat{x}_0^2$$

Equation 2:
$$\sum x_0^2 = \sum \hat{x}_0^2 + \sum e^2,$$

where,
$$\sum \hat{x}_0^2 = \sum (\hat{x}_0 - \bar{x}_0)^2$$

$$= b_{01.2} \sum x_0 x_1 + b_{02.1} \sum x_0 x_2.$$

Equation 3: $\sum x_0^2 = \sum \hat{x}_0^2 + \sum e^2,$

where, $\sum \hat{x}_0^2 = \sum (\hat{x}_0 - \bar{x}_0)^2$
 $= b_{01.23} \sum x_0 x_1 + b_{02.13} \sum x_0 x_2 + b_{03.12} \sum x_0 x_3.$

Equation 4: $\sum x_0^2 = \sum \hat{x}_0^2 + \sum e^2$

where, $\sum \hat{x}_0^2 = \sum (\hat{x}_0 - \bar{x}_0)^2$
 $= b_{01.234} \sum x_0 x_1 + b_{02.134} \sum x_0 x_2$
 $+ b_{03.124} \sum x_0 x_3 + b_{04.123} \sum x_0 x_4$

The lower letter of x_1 are defined as follows :

$$x_0 = X_0 - \bar{X}_0 ;$$

$$x_1 = X_1 - \bar{X}_1 ;$$

$$x_2 = X_2 - \bar{X}_2 ;$$

$$x_3 = X_3 - \bar{X}_3 ;$$

and, $x_4 = X_4 - \bar{X}_4 .$

The standard error (S.E) of the function is defined as the square root of the mean variation of the actual values from the estimated values. That is,

$$S.E. = (\sum e^2 / N)^{1/2}$$

where N is the number of observations.

The coefficient of multiple determination (R^2) which shows the proportion of total variation that is present in the variation of the computed values and which has been explained by reference to the independent variables, is defined as:

$$R^2 = \frac{\sum x_0^2}{\sum x_0^2} .$$

Tests of Significance: The following tests are adopted in the analysis:

- (1) To ascertain whether a multiple coefficient of determination (R^2) significantly exceeds zero, we employed F - test which is defined as:

$$F^* = \frac{R^2}{1 - R^2} \cdot \frac{N - m}{m - 1};$$

with $v_1 = m - 1$, and $v_2 = N - m$, where m is the number of parameters in the equation.

The significance of the coefficients are tested as follows:

H_0 : Population $R^2 = 0$, i.e., there is no correlation in the universe; the observed R^2 occurred by chance.

H_1 ; Population $R^2 \neq 0$, i.e., there is correlation in the universe; the observed R^2 is significant.

Then, we used F table to apply a critical ratio which may subject to probability interpretation in order to decide between H_0 and H_1 . The criterion for our decision at the .05 level is:

Conclude H_0 if

$$F^* \leq F_{.05}$$

Conclude H_1 if

$$F^* > F_{.05}$$

If the calculated F^* value exceeds the theoretical F value at the .01 level, the correlation is said to be highly significant; if the calculated F^* value exceeds the theoretical F value at the .05 level but less than the .01 level, the correlation is significant but not highly significant.

- (ii) To ascertain whether the net regression coefficients (b 's) are statistically reliable, we employed the standard error test. According to this test, if the standard error is smaller than half the numerical value of the parameter estimate, the estimate is statistically significant. The standard error of the coefficients are defined as follows:¹⁸

Equation 1:

$$s(b_{01}) = [\text{var}(b_{01})]^{1/2}$$

$$= \left[\frac{\sum e^2}{(N-2) \sum x_1^2} \right]$$

Equation 2:

$$s(b_{01.2}) = \sqrt{\text{var}(b_{01.2})}$$

$$= \left[\hat{\sigma}_u^2 \frac{\sum x_2^2}{\sum x_1^2 \sum x_2^2 - (\sum x_1 x_2)^2} \right]^{1/2}$$

$$s(b_{02.1}) = \sqrt{\text{var}(b_{02.1})}$$

$$= \left[\hat{\sigma}_u^2 \frac{\sum x_1^2}{\sum x_1^2 \sum x_2^2 - (\sum x_1 x_2)^2} \right]^{1/2}$$

Where,

$$\hat{\sigma}_u^2 = \frac{\sum e^2}{N-3}$$

Equation 3:

$$s(b_{01.23}) = \sqrt{\text{var}(b_{01.23})}$$

$$\text{var}(b_{01.23}) = \hat{\sigma}_u^2 \frac{\begin{vmatrix} \sum x_2^2 & \sum x_1 x_2 \\ \sum x_1 x_2 & \sum x_3^2 \end{vmatrix}}{D}$$

$$s(b_{02.13}) = \sqrt{\text{var}(b_{02.13})}$$

$$\text{var}(b_{02.13}) = \sigma_u^2 \frac{\begin{vmatrix} \sum x_1^2 & \sum x_1 x_2 \\ \sum x_1 x_3 & \sum x_3^2 \end{vmatrix}}{D}$$

$$s(b_{03.12}) = \sqrt{\text{var}(b_{03.12})}$$

$$\text{var}(b_{03.12}) = \sigma_u^2 \frac{\begin{vmatrix} \sum x_1^2 & \sum x_1 x_2 \\ \sum x_1 x_2 & \sum x_2^2 \end{vmatrix}}{D}$$

where,

$$D = \begin{vmatrix} \sum x_1^2 & \sum x_1 x_2 & \sum x_1 x_3 \\ \sum x_1 x_2 & \sum x_2^2 & \sum x_2 x_3 \\ \sum x_1 x_3 & \sum x_2 x_3 & \sum x_3^2 \end{vmatrix}$$

and,

$$\sigma_u^2 = \frac{\sum e^2}{(N - 4)}$$

Equation 4:

$$s(b_{01.234}) = \sqrt{\text{var}(b_{01.234})}$$

$$\text{var}(b_{01.234}) = \frac{\sigma_u^2}{D} \begin{vmatrix} \sum x_2^2 & \sum x_2 x_3 & \sum x_2 x_4 \\ \sum x_2 x_3 & \sum x_3^2 & \sum x_3 x_4 \\ \sum x_2 x_4 & \sum x_3 x_4 & \sum x_4^2 \end{vmatrix}$$

$$s(b_{02.134}) = \sqrt{\text{var}(b_{02.134})} = \frac{\sigma_u}{\sqrt{D}} \begin{vmatrix} \sum x_1^2 & \sum x_1 x_3 & \sum x_1 x_4 \\ \sum x_1 x_3 & \sum x_3^2 & \sum x_3 x_4 \\ \sum x_1 x_4 & \sum x_3 x_4 & \sum x_4^2 \end{vmatrix}$$

$$s(b_{03.124}) = \sqrt{\text{var}(b_{03.124})} = \frac{\sigma_u}{\sqrt{D}} \begin{vmatrix} \sum x_1^2 & \sum x_1 x_2 & \sum x_1 x_4 \\ \sum x_1 x_2 & \sum x_2^2 & \sum x_2 x_4 \\ \sum x_1 x_4 & \sum x_2 x_4 & \sum x_4^2 \end{vmatrix}$$

$$s(b_{04.123}) = \sqrt{\text{var}(b_{04.123})}$$

$$\text{var}(b_{04.123}) = \sigma_u^2 \frac{D}{D}$$

$$D = \begin{vmatrix} \sum x_1^2 & \sum x_1 x_2 & \sum x_1 x_3 \\ \sum x_1 x_2 & \sum x_2^2 & \sum x_2 x_3 \\ \sum x_1 x_3 & \sum x_2 x_3 & \sum x_3^2 \end{vmatrix}$$

where,

$$D = \begin{vmatrix} \sum x_1^2 & \sum x_1 x_2 & \sum x_1 x_3 & \sum x_1 x_4 \\ \sum x_1 x_2 & \sum x_2^2 & \sum x_2 x_3 & \sum x_2 x_4 \\ \sum x_1 x_3 & \sum x_2 x_3 & \sum x_3^2 & \sum x_3 x_4 \\ \sum x_1 x_4 & \sum x_2 x_4 & \sum x_3 x_4 & \sum x_4^2 \end{vmatrix}$$

and,

$$\sigma_u^2 = \frac{\sum e^2}{N - 5}$$

(iii) The addition of new explanatory variable in the function tends to increase the value of R^2 .

However, to know whether the new regressor has significantly improved the explanation in the variation of X_0 , we used another test as shown below:¹⁹

Suppose we have the model

$$X_0 = f(X_1, X_2)$$

we first regress X_0 on X_1 , obtaining

$$\hat{X}_0 = \hat{b}_0 + \hat{b}_1 X_1,$$

with $\sum \hat{X}_0^2$ and $\sum e_1^2$ measuring the explained and unexplained parts of the total variation in X_0 respectively.

Next we introduce in the function the remaining explanatory variable X_2 , and obtained

$$\hat{X}_0 = \hat{b}_0 + \hat{b}_1 X_1 + \hat{b}_2 X_2,$$

with $\sum \hat{X}_0^2$ and $\sum e^2$ measuring the explained and unexplained variation.

The improvement in fit from the additional regressor(s) is being ascertained by F - ratio.

$$F = \frac{(\sum \hat{x}_0^2 - \sum \hat{x}_0^2) / (K - M)}{\sum e^2 / (N - K)}$$

where,

M = number of all bs in the first regression,

and,

K = number of all bs in the second regression.

The calculated F is then compared with theoretical F value at .05 level, with $v_1 = (K - 1)$ and $v_2 = (N * K)$ degrees of freedom.

If the $F > F_{.05}$, we conclude that the additional variable has significantly improved the fit, and the variable is an important explanatory variable. If however, $F < F_{.05}$, we conclude that the additional variable has not significantly improved the fit and the variable is not an important explanatory variable.

(iv) Since the explanatory variables (X_1, X_2, X_3, X_4) are multicollinear as can be seen from the values of simple correlation coefficients (table 8.Ac), it is required to find which variables are responsible for the multicollinearity. Therefore, we compute the partial correlation coefficients among the explanatory variables and test their statistical significance with the t -statistic.²⁰ The partial correlation coefficient between any two variables, say X_1 and X_2 , shows the degree of correlation between these two variables, while X_3 and X_4 are being kept constant. The partial correlation coefficients are calculated in the manner given previously.

The basic hypothesis here is:

$$H_0 : r_{1j.12} = 0$$

and is tested against the alternative hypothesis

$$H_1 : r_{1j.12} \neq 0.$$

The t - statistic is

$$t^* = \frac{(r_{ij.12})(N - K)^{\frac{1}{2}}}{(1 - r_{ij.12}^2)^{\frac{1}{2}}}$$

The observed value t^* is then compared with the theoretical t -value, with $v = (N - K)$ degrees of freedom at the chosen level of significance.

If $t^* > t_{.05}$, we accept that the partial coefficients between variables X_i and X_j is significant, that is, the variables X_i and X_j are responsible for multicollinearity in the function.

If $t^* < t_{.05}$, we conclude that X_i and X_j are not the causes of multicollinearity since their partial coefficient is not statistically significant.

Interpretation: The results of the different measures of multiple and partial correlation analysis are presented in tables 8.5 to 8.7. The major points emerging from these tables are the following:

- (1) The estimating equations (tables 8.5a & 8.5b) reveal that, with the exception of the regression coefficient between calorie-intake(X_0) and land holding(X_3) which is negative in group-A hamlets the signs obtained for all the regression coefficients are as expected. That is, calorie-intake is positively associated with monthly per capita consumption expenditure(X_1), level of employment per working member in the household(X_2) and land holding(X_3); but inversely correlated with family size(X_4). The negative sign in the regression coefficient between calorie-intake and land holding in case of group-A hamlets may be due to the fact that in this group of hamlets lands are mostly put under cash crops cultivation (the most important one is arecanut) and therefore the relationship between calorie-intake and land is relatively remote compared to the relationship obtained in group-B hamlets, where lands are mostly put under paddy cultivation and other horticultural crops.

Table 8.5a : The Estimated Parameters of the Regression Equations

(Group-A hamlets)							
Equation No.	\hat{b}_0	\hat{b}_1	\hat{b}_2	\hat{b}_3	\hat{b}_4	R^2	S.E
<u>First Round of Survey</u>							
I	1417.97	5.834 (0.405)	--	--	--	0.709 (F=207.1)	252.20
II	653.24	5.654 (0.372)	40.685 (9.732)	--	--	0.759 (F=132.3)	229.67
III	414.95	6.664 (0.473)	48.723 (9.613)	-25.399 (-7.874)	--	0.786 (F=101.6)	216.50
IV	470.12	6.564 (0.416)	47.800 (7.381)	-24.520 (-6.131)	-5.695 (-13.367)	0.786 (F= 75.3)	216.37
<u>Second Round of Survey</u>							
I	1515.19	4.128 (0.296)	--	--	--	0.700 (F=198.3)	200.40
II	1310.09	3.964 (0.333)	11.204 (10.694)	--	--	0.704 (F= 97.51)	199.14
III	1295.80	4.449 (0.401)	9.119 (8.605)	-10.389 (-6.463)	--	0.710 (F= 67.7)	197.09
IV	1386.34	4.263 (0.631)	8.294 (11.755)	- 8.436 (-10.02)	-10.470 (-19.667)	0.711 (F= 49.2)	196.64

Note: i) Figures in parentheses are standard errors of the b's.

ii) Equation I is $X_0=f(X_1)$; Equation II is $X_0=f(X_1, X_2)$;

Equation III is $X_0 = f(X_1, X_2, X_3)$ and Equation IV is

$X_0=f(X_1, X_2, X_3, X_4)$.

Table 8.5b : The Estimated Parameters of the Regression Equations.

(Group-B hamlets)							
Equation No.	\hat{b}_0	\hat{b}_1	\hat{b}_2	\hat{b}_3	\hat{b}_4	R^2	S.E
<u>First Round of Survey</u>							
I	1558.55	4.607 (0.319)	--	--	--	0.680 (F=208.2)	173.55
II	1138.89	4.408 (0.301)	21.658 (5.428)	--	--	0.725 (F=127.9)	160.85
III	1153.12	4.308 (0.327)	21.138 (5.398)	7.189 (9.889)	--	0.727 (F=85.2)	160.44
IV	1374.94	3.800 (0.340)	20.050 (5.157)	30.420 (11.284)	-34.080 (-9.064)	0.762 (F=76.1)	149.64
<u>Second Round of Survey</u>							
I	1519.98	4.258 (0.242)	--	--	--	0.767 (F=309.4)	137.10
II	1241.89	3.873 (0.241)	16.284 (3.886)	--	--	0.804 (F=190.7)	125.74
III	1263.23	3.614 (0.217)	16.149 (3.248)	20.620 (6.420)	--	0.819 (F=120.4)	120.77
IV	1265.41	3.606 (0.316)	16.180 (3.826)	20.890 (9.730)	-0.365 (-8.471)	0.819 (F=102.9)	120.75

- (ii) The values of the coefficient of multiple determination (R^2) are statistically significant in all the four functions considered. However, the result obtained from F - test on the significance of the improvement in the fit by the introduction of an additional variable (table 8. Ad) shows that in case of group-A hamlets, land holding and family size are not important explanatory variables. Even employment level is found to be statistically important only during the slack season (first round of survey). In group-B hamlets, on the other hand, except for land holding which is not statistically important during the slack season, all variables considered are important explanatory variables. That is, per capita monthly expenditure, level of employment and family size are the important explanatory variables of the per capita calorie-intake in both the rounds of survey.

(iii)

The standard error test of the regression coefficients shows that the most stable and reliable explanatory variable of the per capita calorie-intake is monthly per capita expenditure. The reliability of the value of the regression coefficient (b_1) is not affected either by changes in functional form or changes in season. The coefficients of other regressors are subjected either to high values of standard errors or severely affected by changes in season. For instance, in group-A hamlets, we observed that employment level (X_2) and land holding (X_3) are reliable regressors during the first round of survey but unreliable during the second round. In group-B hamlets, in addition to per capita monthly expenditure (X_1), the level of employment (X_2) is a reliable regressor in both the rounds of survey. But land holding (X_3) is reliable only in the fourth functional form during the first round and reliable in both the functional forms in the second round of survey. Family size is found to be reliable during the first round of survey only.

The relative importance of each independent variables is also captured in the values of the beta-coefficients given in tables 8.6a and 8.6b. These tables clearly show that per capita monthly expenditure is the most important variable explaining the variation in per capita calorie-intake in both rounds of survey.

At this stage, it may be noted that the explanatory variables are found to be inter-correlated (table 8.7) and the multicollinearity among the explanatory variables may affect the accuracy and stability of the parameter estimates, and hence the variation in calorie-intake (X_0) due to changes in monthly consumption expenditure, level of employment, land holding and family size cannot be sensibly investigated. It is also a well known fact that the presence of inter-correlation among the explanatory variables may increase the standard error of the regression coefficients, although the variable considered is an important determinant of the variation in the dependent variable.

Table 8.6a : The Estimated Beta Coefficients.

(Group-A Hamlets)

Functional Form	\hat{B}_1	\hat{B}_2	\hat{B}_3	\hat{B}_4
<u>First Round of Survey</u>				
$X_0 = f(X_1)$	0.842	---	---	---
$X_0 = f(X_1, X_2)$	0.816	0.223	---	---
$X_0 = f(X_1, X_2, X_3)$	0.962	0.267	-0.227	---
$X_0 = f(X_1, X_2, X_3, X_4)$	0.947	0.262	-0.219	-0.020
<u>Second Round of Survey</u>				
$X_0 = f(X_1)$	0.832	---	---	---
$X_0 = f(X_1, X_2)$	0.799	0.070	---	---
$X_0 = f(X_1, X_2, X_3)$	0.896	0.057	-0.120	---
$X_0 = f(X_1, X_2, X_3, X_4)$	0.859	0.052	-0.097	-0.046

Table 8.6b : The Estimated Beta Coefficients.

(Group-B Hamlets)

Functional Form	\hat{B}_1	\hat{B}_2	\hat{B}_3	\hat{B}_4
<u>First Round of Survey</u>				
$X_0 = f(X_1)$	0.825	---	---	---
$X_0 = f(X_1, X_2)$	0.789	0.220	---	---
$X_0 = f(X_1, X_2, X_3)$	0.771	0.215	-0.043	---
$X_0 = f(X_1, X_2, X_3, X_4)$	0.680	0.204	-0.181	-0.227
<u>Second Round of Survey</u>				
$X_0 = f(X_1)$	0.876	---	---	---
$X_0 = f(X_1, X_2)$	0.797	0.206	---	---
$X_0 = f(X_1, X_2, X_3)$	0.744	0.204	-0.134	---
$X_0 = f(X_1, X_2, X_3, X_4)$	0.742	0.204	-0.136	-0.003

Several solutions have been suggested when multicollinearity exists in a function. One of these is that if multicollinearity affect only a part of the b's, while other estimates remain fairly stable and reliable, the reliable b's may be used for any purpose, forecast or policy formulations.²¹ However, as far as the present study is concerned, multicollinearity and, to that extent, limitation of our primary data notwithstanding, we may perhaps broadly summarise our analysis by pointing out that:

- (i) In group-A hamlets, monthly per capita consumption expenditure is the most important and reliable explanatory variable of the variation in per capita calorie-intake of the household in both rounds of survey.
- (ii) In group-B hamlets, on the other hand, monthly per capita consumption expenditure and the level of employment per working member are the important explanatory variables in both rounds of survey. Land holding is an important variable only during the second round of survey, which coincide with the harvesting period in the area.

In the foregoing paragraphs, we have seen that per capita consumption expenditure is an important determinant of calorie-intake. Therefore, it is equally important to examine the relationship of per capita consumption expenditure with other variables. The partial correlation coefficients and the multiple coefficient of determination among the explanatory variables (table 8.7) provide some information on the relationship between per capita consumption expenditure and other variables, viz., level of employment, land holding and family size. The multiple coefficient of determination ($R^2_{1.234}$) shows that 61 to 75 per cent of the variation in monthly consumption expenditure in group-A hamlets and 32 to 53 per cent in group-B hamlets is explained by the above three variables.

On examining the relationship between per capita expenditure with other variables, we observed a significant relationship between per capita consumption expenditure with land holding and family size in both the rounds of survey. The relationship between per capita expenditure and employment level is statistically significant during the second round of survey only.

Table 8.7 : Partial Correlation Coefficients between Explanatory Variables.

	Group-A Hamlets		Group-B Hamlets	
	First Round	Second Round	First Round	Second Round
$r_{12.34}$	-0.22 (-1.81)	0.24 (2.48)	0.06 (0.61)	0.38 (4.63)
$r_{13.24}$	0.69 (11.29)	0.67 (10.50)	0.52 (7.35)	0.61 (9.37)
$r_{14.23}$	-0.52 (-6.84)	-0.48 (-3.53)	-0.39 (-3.24)	-0.60 (-4.55)
$r_{23.14}$	0.32 (3.54)	-0.05 (-0.44)	0.13 (1.37)	-0.10 (-0.91)
$r_{24.13}$	-0.28 (-2.25)	-0.25 (-2.01)	-0.05 (-0.48)	0.17 (1.79)
$r_{34.12}$	0.35 (3.96)	0.35 (3.91)	0.54 (7.80)	0.63 (9.93)
$R_{1.234}^2$	0.61 (F=43.58)	0.75 (F=81.00)	0.32 (F=15.06)	0.53 (F=34.58)

Note:- The figures in parentheses are the t-ratios.
 The theoretical t - values for $60 < n < 120$ are the following:
 $t_{.05} = 2.00$, and $t_{.01} = 2.66$

IV

Summary

The important points emerging from the analysis on the incidence of poverty and its association with some selected variables may be briefly summarised as follows:

- (i) A very high proportion of the population in the area live in poverty. The incidence is more severe in case of non-indigenous population groups than among the indigenous population.
- (ii) The incidence of poverty is in general higher according to caloric norm than to expenditure norm.
- (iii) Seasonality has in general a significant impact on poverty incidence in the area.
- (iv) The Chi-square test shows that in group-A hamlets, poverty is significantly associated with variables such as possession of limestone quarries, family size, level of employment, educational level and the type of occupation the household follows. The association with land possession is found to be significantly associated only during the first round of survey.

In group-B hamlets, on the other hand, the test reveals that with the exception of family size which is not significantly associated with poverty, poverty is significantly associated with possession of land, possession of livestock, number of dependants per working member in the household, family size, level of employment and the type of occupation the household follows.

- (v) The regression analysis shows that in group-A hamlets, per capita consumption expenditure is the only important determinant of calorie-intake. In group-B hamlets, in addition to consumption expenditure, land holding and employment level are found to be the important determinant of calorie intake.
- (vi) The variation in per capita consumption expenditure as explained by the level of employment, land holding and family size accounts for about 61 to 75 per cent in group-A hamlets and about 32 to 53 per cent in group-B hamlets. The correlation between per capita expenditure with land holding and family size are statistically significant during both rounds of survey, while the correlation with employment level is significant during the second round only.

APPENDIX TABLES TO

CHAPTER 8

**Table 8.Aa1 : Distribution of Population Below Poverty Line (BPL)
and Above Poverty Line (APL) by Land Possession.**

(Group-A Hamlets)

Position of Land Possession	Poverty norm = 2200 calories per day per consumer unit.			Poverty, norm = Rs.128 month expenditure per consumer unit		
	BPL	APL	Total	BPL	APL	Total
<u>First Round of Survey</u>						
Landless	35 (64.81)	19 (35.19)	54 (100.00)	34 (62.96)	20 (37.04)	54 (100.00)
Landed	189 (49.48)	193 (50.52)	382 (100.00)	156 (40.84)	226 (59.16)	382 (100.00)
Total	224 (51.38)	212 (48.62)	436 (100.00)	190 (43.58)	246 (56.42)	436 (100.00)
<u>Second round of Survey</u>						
Landless	24 (44.44)	30 (55.56)	54 (100.00)	10 (18.52)	44 (81.48)	54 (100.00)
Landed	211 (56.12)	165 (43.88)	376 (100.00)	69 (18.35)	307 (81.65)	376 (100.00)
Total	235 (54.65)	195 (45.35)	430 (100.00)	79 (18.37)	351 (81.63)	430 (100.00)

Table 8.Aa₂ Distribution of Population Below Poverty Line (BPL) and above Poverty Line (APL) by Possession of Lime-Stones Quarries.

(Group-A Hamlets)

Position of Quarries possession	Poverty norm = 2200 calories per day per consumer unit.			Poverty norm = Rs.128 monthly expenditure per consumer unit.		
	EPL	APL	Total	EPL	APL	Total
<u>First Round of Survey</u>						
Yes	29 (28.43)	73 (71.57)	102 (100.00)	20 (19.61)	82 (80.39)	102 (100.00)
No	195 (58.38)	139 (71.62)	334 (100.00)	170 (50.90)	164 (49.10)	334 (100.00)
Total	224 (51.38)	212 (48.62)	436 (100.00)	190 (43.58)	246 (56.42)	436 (100.00)
<u>Second Round of Survey</u>						
Yes	35 (34.31)	67 (65.69)	102 (100.00)	6 (5.88)	97 (94.12)	102 (100.00)
No.	200 (60.98)	128 (39.02)	328 (100.00)	73 (22.26)	255 (77.74)	328 (100.00)
Total	235 (54.65)	195 (45.35)	430 (100.00)	79 (18.37)	351 (81.63)	430 (100.00)

Table 8.Aa₃ : Distribution of Population Below Poverty Line (BPL) and Above Poverty Line (APL) by Possession of Livestocks Assets.

(Group-A Hamlets)

Position of Livestocks Possession	Poverty norm = 2200 calories per day per consumer unit.			Poverty norm = Rs.128 monthly expenditure per consumer unit		
	BPL	APL	Total	BPL	APL	Total
<u>First Round of Survey</u>						
Yes	46 (58.23)	33 (41.77)	79 (100.00)	35 (44.30)	44 (55.70)	79 (100.00)
No	178 (49.86)	179 (50.14)	357 (100.00)	155 (43.42)	202 (56.58)	357 (100.00)
Total	224 (51.38)	212 (48.62)	436 (100.00)	190 (43.58)	246 (56.42)	436 (100.00)
<u>Second Round of Survey</u>						
Yes	48 (60.76)	31 (39.24)	79 (100.00)	15 (18.99)	64 (81.01)	79 (100.00)
No	187 (53.28)	164 (46.72)	351 (100.00)	64 (18.23)	287 (81.77)	351 (100.00)
Total	235 (54.65)	195 (45.35)	430 (100.00)	79 (18.37)	351 (81.63)	430 (100.00)

Table 8.Aa₄ : Distribution of Population Below Poverty Line (BPL) and Above Poverty Line (APL) by Number of Dependents Per Worker in a Household.

(Group-A Hamlets)

Number of dependents per worker	Poverty norm = 2200 calories per day per consumer unit.			Poverty norm = Rs.128 monthly expenditure per consumer unit		
	BPL	APL	Total	BPL	APL	Total
<u>First Round of Survey</u>						
Two and below	192 (51.61)	180 (48.39)	372 (100.00)	158 (42.47)	214 (57.53)	372 (100.00)
Above two	32 (50.00)	32 (10.00)	64 (100.00)	32 (50.00)	64 (50.00)	64 (100.00)
Total	224 (51.38)	212 (48.62)	436 (100.00)	190 (43.58)	246 (56.42)	436 (100.00)
<u>Second Round of Survey</u>						
Two and below	203 (55.46)	163 (44.54)	366 (100.00)	65 (17.76)	301 (82.24)	366 (100.00)
Above Two	32 (50.00)	32 (10.00)	64 (100.00)	14 (21.88)	50 (78.12)	64 (100.00)
Total	235 (54.65)	195 (45.35)	430 (100.00)	79 (18.37)	351 (81.62)	430 (100.00)

Table 8.Aa₅ : Distribution of Population Below Poverty line(BPL) and Above Poverty Line(APL) by Family Size.

(Group-A Hamlets)

Family size	Poverty norm = 2200 calories per day per consumer unit			Poverty norm = Rs.128 monthly expenditure per consumer unit		
	BPL	APL	Total	BPL	APL	Total
<u>First Round of Survey</u>						
Four and below	17 (16.19)	38 (83.81)	105 (100.00)	18 (17.14)	87 (82.86)	105 (100.00)
Above Four	207 (62.54)	124 (37.46)	331 (100.00)	172 (51.96)	159 (48.04)	331 (100.00)
Total	224 (51.38)	212 (48.62)	436 (100.00)	190 (53.58)	246 (56.42)	436 (100.00)
<u>Second Round of Survey</u>						
Four and above	29 (29.29)	70 (70.71)	99 (100.00)	- (0.00)	99 (100.00)	99 (100.00)
Above four	206 (62.24)	125 (37.76)	331 (100.00)	79 (23.87)	252 (76.13)	331 (100.00)
Total	235 (54.65)	195 (45.35)	430 (100.00)	79 (18.37)	351 (81.63)	430 (100.00)

Table 8.Aa : Distribution of Population Below Poverty Line (BPL) and Above Poverty Line (APL) by Level of Employment Per Worker Per Week.

(Group-A Hamlets)

Level of employment per week	Poverty norm = 2200 calories per day per consumer unit.			Poverty norm = Rs.128 monthly expenditure per consumer unit.		
	BPL	APL	Total	BPL	APL	Total
<u>First Round of Survey</u>						
Four days and below	119 (77.27)	35 (22.73)	154 (100.00)	113 (73.38)	41 (26.62)	154 (100.00)
Above four days	105 (37.23)	177 (62.77)	282 (100.00)	77 (27.30)	205 (72.70)	282 (100.00)
Total	224 (51.38)	212 (48.62)	436 (100.00)	190 (43.58)	246 (56.42)	436 (100.00)
<u>Second Round of Survey</u>						
Four days and below	44 (100.00)	- (0.00)	44 (100.00)	40 (90.91)	4 (9.09)	44 (100.00)
Above four days	191 (49.48)	195 (50.52)	386 (100.00)	39 (10.10)	347 (89.90)	386 (100.00)
Total	235 (54.65)	195 (45.35)	430 (100.00)	79 (18.37)	351 (81.63)	430 (100.00)

Table 8.Aa, Distribution of Population Below Poverty Line (BPL) and Above Poverty Line (APL) by Educational Level.

(Group-A Hamlets)

Educational level	Poverty norm = 2200 calories per day per consumer unit.			Poverty norm = Rs.128 monthly expenditure per consumer unit		
	BPL	APL	Total	BPL	APL	Total
<u>First Round of Survey</u>						
Illiterate	93 (61.18)	59 (38.82)	152 (100.00)	81 (53.29)	71 (46.71)	152 (100.00)
Primary and middle.	112 (47.86)	122 (52.14)	234 (100.00)	95 (41.60)	139 (58.40)	234 (100.00)
High School and above	19 (38.00)	31 (62.00)	50 (100.00)	14 (28.00)	36 (72.00)	50 (100.00)
Total	224 (51.98)	212 (48.62)	436 (100.00)	190 (43.58)	246 (56.42)	436 (100.00)
<u>Second Round of Survey</u>						
Illiterate	96 (64.43)	53 (35.57)	149 (100.00)	35 (23.49)	114 (76.51)	149 (100.00)
Primary and middle	131 (56.71)	100 (43.29)	231 (100.00)	40 (17.32)	191 (82.68)	231 (100.00)
High School and above	8 (16.00)	42 (84.00)	50 (100.00)	4 (8.00)	46 (92.00)	50 (100.00)
Total	235 (54.65)	195 (45.35)	430 (100.00)	79 (18.37)	351 (81.63)	430 (100.00)

Table 0.008 : Distribution of Population Below Poverty Line(BPL and Above Poverty Line(APL) By Households Occupation.

(Group-A-Hamlets)

Household occupation	Poverty norm = 2200 calories per day per consumer unit			Poverty norm = Rs.128 monthly expenditure per consumer unit		
	BPL	APL	Total	BPL	APL	Total
<u>First Round of Survey</u>						
Self-employed occupations	154 (46.53)	177 (53.47)	331 (100.00)	130 (39.27)	201 (60.73)	331 (100.00)
Wage-employed occupations	70 (66.67)	35 (33.33)	105 (100.00)	60 (57.14)	45 (42.86)	105 (100.00)
Total	224 (51.38)	212 (48.62)	436 (100.00)	190 (43.58)	246 (56.42)	436 (100.00)
<u>Second Round of Survey</u>						
Self-employed occupations	169 (51.37)	160 (48.63)	329 (100.00)	49 (14.89)	280 (85.11)	329 (100.00)
Wage-employed occupations	66 (65.35)	35 (34.65)	101 (100.00)	30 (29.70)	71 (70.30)	101 (100.00)
Total	235 (54.65)	195 (45.35)	430 (100.00)	79 (18.37)	351 (81.63)	430 (100.00)

Table 8.A₁ Distribution of Population Below Poverty Line (BPL) and Above Poverty Line (APL) By Land Possession.

(Group-B Hamlets)

Position of land Possession	Poverty norm = 2200 calories per day per consumer unit.			Poverty norm = Rs.128 monthly expenditure per consumer unit.		
	BPL	APL	Total	BPL	APL	Total
<u>First Round of Survey</u>						
Landless	264 (81.73)	59 (18.27)	323 (100.00)	279 (86.38)	44 (13.62)	323 (100.00)
Landed	99 (35.48)	180 (64.52)	279 (100.00)	109 (39.07)	170 (60.93)	279 (100.00)
Total	363 (60.30)	239 (39.70)	602 (100.00)	388 (64.45)	214 (35.55)	602 (100.00)
<u>Second Round of Survey</u>						
Landless	212 (69.97)	91 (30.03)	303 (100.00)	188 (62.05)	115 (37.95)	303 (100.00)
Landed	69 (24.73)	210 (75.27)	279 (100.00)	41 (14.70)	238 (85.30)	279 (100.00)
Total	281 (48.28)	301 (51.72)	582 (100.00)	229 (39.35)	353 (60.65)	582 (100.00)

Table 8.Ab₂ : Distribution of Population Below Poverty Line(BPL) and Above Poverty Line(APL) by Possession of Livestocks Assets.

(Group-B Hamlets)

Position of Poverty norm = 2200 calories per day per consumer unit Poverty norm = Rs.128 monthly expenditure per consumer unit

livestock possession	BPL	APL	Total	BPL	APL	Total
<u>(First Round of Survey)</u>						
Yes	55 (32.93)	112 (67.07)	167 (100.00)	65 (38.92)	102 (61.08)	167 (100.00)
No	308 (70.80)	127 (29.20)	435 (100.00)	323 (74.25)	112 (25.75)	435 (100.00)
Total	363 (60.80)	239 (39.70)	602 (100.00)	388 (64.45)	214 (35.55)	602 (100.00)
<u>(Second Round of Survey)</u>						
Yes	19 (11.38)	148 (88.62)	167 (100.00)	19 (11.38)	148 (88.62)	167 (100.00)
No	262 (63.13)	153 (36.87)	415 (100.00)	210 (50.60)	205 (49.40)	415 (100.00)
Total	281 (48.28)	301 (51.72)	582 (100.00)	229 (39.35)	353 (60.65)	582 (100.00)

Table 8A₃ : Distribution of Population Below Poverty Line (BPL) and Above Poverty Line (APL) by Number of Dependents Per Worker in A Household.

(Group-B Hamlets)

Number of dependants per worker	Poverty norm = 2200 calories per day per consumer unit			Poverty norm = Rs.128 monthly expenditure per consumer unit		
	BPL	APL	Total	BPL	APL	Total

First Round of Survey

Two and below	326 (65.20)	174 (34.80)	500 (100.00)	340 (68.00)	160 (32.00)	500 (100.00)
Above two	37 (36.27)	65 (63.73)	102 (100.00)	48 (47.06)	54 (52.94)	102 (100.00)
Total	363 (60.30)	239 (39.70)	602 (100.00)	388 (64.45)	214 (35.55)	602 (100.00)

Second Round of Survey

Two and below	262 (54.58)	218 (45.42)	480 (100.00)	203 (42.29)	277 (57.71)	480 (100.00)
Above two	19 (18.63)	83 (81.37)	102 (100.00)	26 (25.49)	76 (74.51)	102 (100.00)
Total	281 (48.28)	301 (51.72)	582 (100.00)	229 (39.35)	353 (60.65)	582 (100.00)

Table 8.A₄ Distribution of Population Below Poverty Line (BPL) and Above Poverty Line (APL) by Family Size.

(Group-B Hamlets)

Family Size	Poverty norm = 2200 calories per day per consumer unit			Poverty norm = Rs.128 monthly expenditure per consumer unit		
	BPL	APL	Total	BPL	APL	Total
<u>First Round of Survey</u>						
Four and below	49 (49.00)	51 (51.00)	100 (100.00)	60 (60.00)	40 (40.00)	100 (100.00)
Above four	314 (62.55)	188 (37.45)	502 (100.00)	328 (65.34)	174 (34.66)	502 (100.00)
Total	363 (60.30)	239 (39.70)	602 (100.00)	388 (64.45)	214 (35.55)	602 (100.00)
<u>Second Round of Survey</u>						
Four and below	30 (30.93)	67 (69.07)	97 (100.00)	12 (12.37)	85 (87.63)	97 (100.00)
Above four	251 (51.75)	234 (48.25)	485 (100.00)	217 (44.74)	268 (55.26)	485 (100.00)
Total	281 (48.28)	301 (51.72)	582 (100.00)	229 (39.35)	353 (60.65)	582 (100.00)

Table 8. ad₅ : Distribution of Population Below Poverty Line(BPL) and Above Poverty Line(APL) by Level of Employment per Worker Per Week.

(Group-B Hamlets)

Level of employment per week	Poverty norm = 2200 calories Per day per consumer unit			Poverty norm = Rs.129 monthly expenditure per consumer unit		
	BPL	APL	Total	BPL	APL	Total
First Round of Survey						
Four days and below	110 (76.39)	34 (23.61)	144 (100.00)	106 (73.61)	38 (26.39)	144 (100.00)
Above four days	253 (55.24)	205 (44.76)	458 (100.00)	282 (61.57)	176 (38.43)	458 (100.00)
Total	363 (60.30)	239 (39.70)	602 (100.00)	388 (64.45)	214 (35.55)	602 (100.00)
Second Round of Survey						
Four days and below	111 (84.09)	21 (15.91)	132 (100.00)	102 (72.27)	30 (22.73)	132 (100.00)
above four days	170 (37.78)	280 (62.22)	450 (100.00)	127 (28.22)	323 (71.78)	450 (100.00)
Total	281 (48.29)	301 (51.72)	582 (100.00)	229 (39.35)	353 (60.65)	582 (100.00)

Table 8.A. : Distribution of Population Below Poverty Line(BPL) and Above Poverty Line(APL) by Households Occupation.

(Group-B Hamlets)

Household occupation	Poverty norm = 2200 calories per day per consumer unit			Poverty norm = Rs.128 monthly expenditure per consumer unit		
	BPL	APL	Total	BPL	APL	Total
<u>First Round of Survey</u>						
Self-employed occupations	102 (33.65)	201 (66.34)	303 (100.00)	116 (38.28)	187 (61.72)	303 (100.00)
Wage-employed occupations	261 (87.29)	38 (12.71)	299 (100.00)	272 (90.97)	27 (9.03)	299 (100.00)
Total	363 (60.30)	239 (39.70)	602 (100.00)	388 (64.45)	214 (35.55)	602 (100.00)
<u>Second Round of Survey</u>						
Self-employed occupations	72 (23.76)	231 (76.24)	303 (100.00)	41 (13.53)	262 (86.47)	303 (100.00)
Wage-employed occupations	209 (74.91)	70 (25.09)	279 (100.00)	188 (67.38)	91 (32.62)	279 (100.00)
Total	281 (48.28)	301 (51.72)	582 (100.00)	229 (39.35)	353 (60.65)	582 (100.00)

Table 8.Ac : Correlation Co-efficients

	<u>Group-A Hamlets</u>		<u>Group-B Hamlets</u>	
	<u>First Round</u>	<u>Second Round</u>	<u>First Round</u>	<u>Second Round</u>
<u>(I) Zero-Order Correlation Coefficients</u>				
r_{01}	0.842	0.837	0.825	0.876
r_{02}	0.317	0.444	0.334	0.512
r_{03}	0.484	0.586	0.420	0.466
r_{04}	-0.511	-0.467	-0.245	-0.181
r_{12}	0.116	0.467	0.166	0.381
r_{13}	0.664	0.765	0.431	0.401
r_{14}	-0.491	-0.487	-0.141	-0.317
r_{23}	0.270	0.272	0.190	0.164
r_{24}	-0.233	-0.450	0.001	-0.003
r_{34}	-0.158	-0.162	0.418	0.422

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Table 8.Ac: Correlation Coefficients (Contd. from last page)

	<u>Group-A Hamlets</u>		<u>Group-B Hamlets</u>	
	<u>First Round</u>	<u>Second Round</u>	<u>First Round</u>	<u>Second Round</u>
<u>(II) Selected Partial Correlation Coefficients</u>				
$r_{02.1}$	0.409	0.110	0.354	0.400
$r_{03.1}$	-0.186	-0.154	0.126	0.260
$r_{04.1}$	-0.293	-0.124	-0.230	-0.211
$r_{03.12}$	-0.332	-0.140	0.085	0.278
$r_{04.12}$	-0.235	-0.097	-0.255	-0.173

Table 8.Ad : The Analysis of Variance -- Summary Table

Source of variation in X_0	Sum of squares	Degrees of freedom	Mean square error	F*
1	2	3	4	5
<u>Group-A hamlets; First round of survey</u>				
Due to X_1	13486235.64	1		
Due to X_1 and X_2	14430926.88	2		
Additional variation from X_2	944691.24	1	944691.24	
Residual variation from $X_0 = f(X_1, X_2)$	4589304.59	84	54634.58	17.291**
Due to X_1, X_2 and X_3	14941722.14	3		
Additional variation from X_3	510795.26	1	510795.26	
Residual variation from $X_0 = f(X_1, X_2, X_3)$	4078509.33	83	49138.67	10.395**

Table 8.Ad: (Contd.)

	1	2	3	4	5
Due to X_1, X_2, X_3 and X_4		14947124.97	4		
Additional variation from X_4		5402.83	1	5402.83	
Residual variation from $X_0 = f(X_1, X_2, X_3, X_4)$		4073106.50	82	49672.03	0.199
Total variation		19020231.47	86		

Group-A hamlets: Second round of survey

Due to X_1		7971134.69	1		
Due to X_1 and X_2		8013760.59	2		
Additional variation from X_2		42625.90	1	42625.90	

Table 8.Ad : (Contd.)

	1	2	3	4	5
Residual variation from $X_0=f(X_1, X_2)$		3370995.06	82	41109.70	1.037
Due to X_1, X_2 and X_3		8082996.87	3		
Additional variation from X_3		69236.28	1	69236.28	
Residual variation from $X_0=f(X_1, X_2, X_3)$		3301758.78	81	40762.45	1.698
Due to X_1, X_2, X_3 and X_4		8097858.40	4		
Additional variation from X_3		14861.53	1	14861.53	
Residual variation from $X_0=f(X_1, X_2, X_3, X_4)$		13286897.25	80	41086.22	0.362
Total variation		11384755.65	84		

Table 8.Ad : (Contd.)

	1	2	3	4	5
<u>Group-B hamlets: First round of survey</u>					
Due to X_1		6412382.41	1		
Due to X_1 and X_2		6837207.10	2		
Additional variation from X_2		424824.69	1	424824.69	
Residual variation from $X_0=f(X_1, X_2)$		2587167.20	97	26671.83	15.928**
Due to X_1, X_2 and X_3		6850332.21	3		
Additional variation from X_3		13125.11	1	13125.11	
Residual variation from $X_0=f(X_1, X_2, X_3)$		2574042.09	96	26812.94	0.490

Table 8.Ad : (Contd.)

	1	2	3	4	5
Due to X_1, X_2, X_3 and X_4		7185053.74	4		
Additional variation from X_4		334721.53	1	334721.53	
Residual variation from $X_0 = f(X_1, X_2, X_3, X_4)$	2239320.56		95	23571.80	14.200**
Total variation		9424374.30	99		

Group-B hamlets: Second round of survey

Due to X_1	5948646.86	1		
Due to X_1 and X_2	6235357.57	2		
Additional variation from X_2	286710.71	1	286710.71	

Table 8. Ad : (Contd.)

	1	2	3	4	5
Residual variation from $X_0=f(X_1, X_2)$		1517746.87	93	16319.86	17.568**
Due to X_1, X_2 and X_3		6352929.25	3		
Additional variation from X_3		117571.68	1	117571.68	
Residual variation from $X_0=f(X_1, X_2, X_3)$		1400175.19	92	15219.30	7.725**
Due to X_1, X_2, X_3 and X_4		6353466.61	4		
Additional variation from X_4		537.36	1	537.36	
Residual variation from $X_0=f(X_1, X_2, X_3, X_4)$		1399637.83	91	15380.64	0.035
Total variation		7753104.44	95		

** Significant at 5 per cent level.

Notes and References.

1. For conversion into calories, we used the conversion method as adopted by Gopalan, C. et al (1984) "Nutritive Values of India Foods" Indian Council of Medical Research, Hyderabad.
2. The values of the coefficient are: Man above 14 years of age=1.00 consumption unit, women above 14 years of age=0.83 consumption unit, a boy as well as a girl of 10 years but below 14 years of age=0.83 consumption unit, a boy as well a girl of 6 years but below 10 years of age=0.73 consumption unit, and a boy or a girl of less than 6 years of age=0.50 consumption unit. These values have been recommended by the Nutrition Advisory Committee of the Indian Research Fund Association and are quoted in Government of India, Ministry of Labour (1965), "Report of the Agricultural Labour Enquiry", p.144.
3. Mukherjee, M (1981), "Concerning Poverty", a paper presented at the National Conference on Social Science Research and the Problem of Poverty, Indian Association of Social Science Institution, New Delhi, Jan. 1981, quoted in Prasad, K(1985), "Planning for Poverty Alleviation", Agricole, p.7.

4. Mundle, S(1983), "Effects of Agricultural Production and Prices on Incidence of Rural Poverty", Economic and Political Weekly, Review of Agriculture, No.26.
5. Gahathagurta, S.N.(1983), "Poverty, Unemployment and Development Policy in North-Eastern Region: A case study with reference to ten villages in East and West Khasi Hills Districts of Meghalaya," (mimeo), North Eastern Hills University, Shillong.
It may be noted that Panikar, P.G.K. (1978) and Centre for Development Studies (1975), among others have also adopted this level.(see Chapter- 3).
6. Government of India, "Sixth Five Year Plan, 1980-85", Vol. II, Planning Commission. This level has also been adopted by Chatterjee, Sankar and Paul, "A Note on the Variation in Dietary Levels of Households in Rural India", in Srinivasan, T.N. and Bardhan, P.K.(1974) (ed), "Poverty and Income Distribution in India", Statistical Publishing Society, Calcutta,
7. Gopalan, C(1983), "Measurement of Under-nutrition", Economic and Political Weekly, No. 15.
8. According to the findings of Vaidyanathan, "the discrimination against females in intra-family food allocation may not be as universal as it is generally supposed nor does it always get accentuated when the family's food supply relative to population is low and inadequate". This observation may be more relevant

especially in tribal societies where both men, women and children take part in productive activities.

See, Vaidyanathan, A. (1985), "Food Consumption and Size of People: Some Indian Evidence", Economic and Political Weekly, No. 30

9. This equation has also been used by Sastry in his study of poverty in Andhra Pradesh. See, Sastry, S.A.R. (1981), "Measurement of Poverty: Positive and Normative", in "Employment, Poverty and Public Policy", Sardar Patel Institute of Economics and Social Research, Ahmedabad.
10. The amounts (Rs 128 and Rs 170) are based on prices prevailing in the area at the time of our field investigation. In this connection, it may be mentioned that the state government of Meghalaya, following the caloric norm of 2400 for the rural areas as laid down by the Planning Commission, formulated a monthly expenditure of Rs 125 per person as the poverty line in rural areas of the state in 1983-84. According to our data, 1 person = 0.82 adult equivalent. Therefore, this poverty line of Rs 125, if expressed in terms of adult equivalent, comes to about Rs 152 per adult per month, which is lower than the one formulated by us (Rs 170) for the border areas of East Khasi Hills. Such variation is possible since a large proportion of goods available in the area are brought from Shillong and, therefore, command higher prices in the border area than in Shillong. It may also be noted that

a large proportion of consumption items in the area are bought from the market. Therefore, because of higher prices paid by them, the expenditure level derived by us is higher than the one formulated by the state government. However, a poverty line of Rs 128 is far below than the one formulated by the state government for the rural areas of the state.

See, Meghalaya, Govt. of (1984), "Seventh Five Year Plan, 1985-90", Vol. I, Planning Department, Shillong, p.7

11. Osmani, S.R. (1982), "Economic Inequality and Groups Welfare : A Theory of Comparison with Application to Bangladesh", Oxford, p.67
12. Meghalaya, Govt. of (1984), "Seventh Five Year Plan", op cit., p.7
13. It is observed that the average expenditure of the households increased considerably during the second round of survey compared to the average expenditure during the first round of survey. However, the increase of expenditure on food-items is not proportional to the increase in total expenditure. This is because of

the fact that during the second round of survey, which co-incide with the winter season, households spent relatively more on non-food items like clothing and footwear and other necessities. It may be due to this reason that the shift in the percentage of the poor according to caloric norm is not that sharp as under expenditure norm.

14. Dandekar, V.M. (1981), "On Measurement of Poverty", Economic and Political Weekly, No. 30
15. Parthasarathy, G. et al (1982), "Character of Poverty Among Rural Poor", in "Poverty: An Interdisciplinary Approach", Madras Institute of Development Studies, Madras.
16. Leabo, A. Dick (1972), "Basic Statistics", Richard D. Irwin, Inc., Homewood, Illinois, p. 473
17. Koutsoyianis, A (1977), "Theory of Econometrics", Second edition, The Macmillan Press Ltd., p. 156
18. Ibid., p. 80
19. Ibid., p. 158
20. Ibid., p. 245
21. Ibid., p. 249

CHAPTER 9ECONOMIC CONDITION OF THE POVERTY GROUPS

In the foregoing chapters, we have examined some major factors influencing poverty such as access to land resource and other non-land assets, occupation, employment, etc. and we have seen that, on an average, population in group-A hamlets are in a better position than their counterparts in group-B hamlets in almost all important factors considered. We have also seen that poverty is more severe in the latter group of hamlets than in the former. However, we have not examine in detail those characteristics of the poor which affect their material well being. Therefore, this chapter attempts to examine the economic condition of the poor vis-a-vis the non-poor. The characteristics considered are with respect to land resource and other assets, number of dependants per working member in a household, family size, educational level and other characteristics.

The identification of the poor from the non-poor on the basis of two poverty norms, viz., calorie intake and expenditure norm, enables us to re-group the population into four categories:

- i. those who are deficient in both calories and expenditure level (DC&DE),
- ii. those who are deficient in calories but not deficient in expenditure (DC&NDE),
- iii. those who are not deficient in calories but deficient in expenditure (NDC&DE), and
- iv. those who are neither deficient in calories nor in expenditure (NDC&NDE).

The first group (DC&DE) therefore comprised of persons who were poor on the basis of both the poverty norms, the second and third groups comprised of persons who were poor on the basis of one norm and non-poor on the basis of another, and the last group comprised of persons who were non-poor on the basis of both the norms. Strictly speaking, we should consider the first three groups as poor and the last as non-poor. However, for simplicity sake, in our analysis that follows, we have considered the first group (DC&DE) of population as 'poor' and compared their characteristics with those of the non-poor (NDC&NDE). This classification will not affect

much our analysis since a small proportion of population are found to fall in the intermediate or second and third categories.

Further, in the analysis that follows, we have utilised the data collected during the second round of field survey. This is because the second round of survey coincides with the busy season, and it is likely that the 'poor' during this season may consist also of the same set of persons who were poor during the first round of survey which coincides with the slack season.

The Chapter is divided into seven sections. Section I deals with the household mean income and income-sources of the 'poor' and the non-poor, and Section II with the evidences on the access to land resource and other assets among the 'poor' and non-poor. In Section III, we examine the occupational characteristics of the 'poor' and the non-poor households and in Section IV we compare the participation rates and employment level (or duration) between the 'poor' and the non-poor. The literacy and other demographic characteristics among the 'poor' and the non-poor are presented in Section V, followed by a comparison of the consumption level of the 'poor' with that of the non-poor in Section VI. The last Section summarises the important points emerging from the first six sections.

I

Household Income

The mean household income is an indicator of the material well being of the household in the sense that it provides the clue whether the income level is adequate enough to put the household above the subsistence level. From table 9.1, we notice that the mean income per household among the 'poor' in both the hamlet groups is too low compared with that of the non-poor. For instance, the mean income of the 'poor' as a percentage to the mean income of the non-poor is about 63 per cent and 68 per cent in group-A and group-B hamlets respectively. This variation in the income level between the 'poor' and the non-poor explains the difference in calorie and consumption expenditure between the two groups.

The reasons for the variation in income level are varied. Let us try to capture this variation by analysing the source composition of income among the diffe-

Table 0.1 : Average Household Income of Different Poverty Groups.

Sl. No. Poverty Groups	(Rs. at Current Prices)	
	A	B
1. DC & DE	5271.18	4566.67
2. DC & NDE	6051.31	4970.00
3. NDC & DE		4000.00
4. NDC & NDE	8400.44	6743.27
All	7198.48	5663.50
(DC & DE/NDC & NDE x 100)	62.83	67.72

Note:- 'A' stands for Group-A Hamlets and 'B' stands for Group-B Hamlets.

rent poverty groups. The composition of income (table 9.2) reveals that the major source of income among the 'poor' is wage income, while the non-poor derive a major part of their income from self-employment activities. A higher proportion of wage income among the 'poor' reflects that the 'poor', because of absence of adequate supplementary sources of income, has to depend much on wage-employment activities, which are generally less remunerative and more affected by seasonality.¹ The non-poor, on the other hand, derives their income from many diversified sources, with agriculture and trade and commerce as the two major sources of income. The presence of diversified sources of income enabled the households not only to escape from poverty but also from the adverse effects of seasonality on employment and other variables affecting food intake and consumption expenditure.

Table 9.2 : Income-Sources Composition of the Different Poverty-Group

Sources of Income	DC&DE	DC&NDE	NDC&DE	NDC&NDE
<u>Group-A Hamlets</u>				
1. Agricultural Income	26.44	45.77	-	38.53
2. Agricultural Wage Income	20.84	10.83	-	5.32
3. Non-Agricultural Wage Income	22.05	18.29	-	12.49
ALL WAGE INCOME	42.89	29.12	-	17.81
4. Trade and Commerce Income.	6.46	13.22	-	22.68
5. Rental Income	4.82	4.56	-	12.14
6. Other Sources	19.39	7.33	-	8.85
All Sources	100.00	100.00	-	100.00
<u>Group-B Hamlets</u>				
1. Agricultural Income	11.61	37.20	-	61.17
2. Agricultural Wage Income	39.88	17.72	75.00	17.22
3. Non-Agricultural Wage Income	43.13	29.54	15.00	6.82
ALL WAGE INCOME	83.01	47.26	90.00	24.04
4. Trade and Commerce Income	-	7.66	-	7.16
5. Rental Income	-	-	-	-
6. Other Sources	5.37	7.88	10.00	7.63
All Sources	100.00	100.00	100.00	100.00

II

Land and Other Assets

In chapter 6, we have seen that household income, on an average, tends to increase with the increase in household farm sizes. That is, access to land resource determines the income level of the households. In table 9.3, we present the average holding per operating household among the different poverty groups, as well as the distribution of population in different poverty groups by level of household farm sizes. As seen from the table, the average holding among the 'poor' is too low compared with the average holding of the non-poor. For instance, the average holding of the 'poor' as percentage of the average holding of the non-poor is about 20 per cent in group-A hamlets and 11 per cent in group-B hamlets. This feature indicates that the 'poor', especially in group-B hamlets, is in general characterised by a small holding compared with the non-poor. The distribution of population in different poverty groups by household farm-sizes also throws the same picture. That is, the 'poor' generally belongs to the landless and households with marginal land holdings.²

Table 9.3 : Average Operational Holding Per Operating Household and the Distribution of Population in Poverty Groups by Household Farm Sizes.

Poverty Groups	Average (in Bighas)	Distribution of population by household farm-size					Total
		Landless	Marginal	Small	Medium	Big	
1	2	3	4	5	6	7	8
<u>Group-A Hamlets</u>							
1. DC&DE	3.50	12.66 (18.52)	87.34 (30.40)	--	--	--	100.00 (18.3)
2. DC&NDE	9.72	8.97 (25.93)	67.31 (46.25)	12.18 (33.33)	5.77 (24.32)	5.77 (16.36)	100.00 (36.2)
3. NDC&DE	---	---	---	---	---	---	---
4. NDC&NDE	17.28	15.38 (55.55)	27.18 (23.35)	19.49 (66.67)	14.36 (75.68)	23.59 (83.64)	100.00 (45.3)
All	14.33	12.56 (100.00)	52.79 (100.00)	13.26 (100.00)	8.60 (100.00)	12.79 (100.00)	100.00 (100.00)
<u>Group-B Hamlets</u>							
1. DC&DE	1.30	81.53 (59.73)	12.16 (36.49)	2.70 (16.67)	3.60 (6.84)	--	100.00 (38.1)
2. DC&NDE	4.00	52.54 (10.23)	18.64 (14.86)	10.17 (16.67)	18.64 (9.40)	--	100.00 (10.1)
3. NDC&DE	---	100.00 (2.31)	---	---	---	---	100.00 (1.0)
4. NDC&NDE	11.69	28.57 (27.72)	12.25 (48.65)	8.16 (66.67)	33.33 (83.76)	17.69 (100.00)	100.00 (50.1)
All	18.68	52.06 (100.00)	12.71 (100.00)	6.19 (100.00)	20.10 (100.00)	8.93 (100.00)	100.00 (100.00)

However, income generates not only in land but from other assets as well. Therefore, the possession of other assets (other than land) is also equally important. In table 9.4, we present the distribution of households possessing limestone quarries in different poverty groups. It is seen from the table that about 91 per cent of those who are 'poor' are not owning any quarries. Further, among the possessing households, only 5.56 per cent are found to be 'poor' whereas more than 70 per cent of the households are non-poor.

Taking another important asset, viz., possession of livestock (table 9.5), we observed that the average value of livestock owned by the 'poor' is too small compared with that of the non-poor. For instance, on an average in terms of the market value at current prices, a 'poor' in group-A hamlets owns Rs 1000 worth of livestock against Rs 7528 worth owned by a non-poor. In group-B hamlets, on the other hand, the average works out to Rs 2667 for the 'poor' and Rs 6469 for the non-poor. Further, the distribution of population by asset groups indicates that the majority of population in relatively higher asset groups falls in the non-poor group. This feature is more prominent in group-B than

Table 9.4 : Distribution of Households Possessing Limestone Quarries by Poverty-Groups.

(Group-A Hamlets)

Sl. No.	Poverty Groups	Possession of Lime-Stones Quarries		
		Yes	No	Total
1.	DC&DE	9.09 (5.56)	90.91 (14.93)	100.00 (12.94)
2.	DC&NDE	13.79 (22.22)	86.21 (37.31)	100.00 (34.12)
3.	NDC&DE	-	-	-
4.	NDC&NDE	28.89 (72.22)	71.11 (47.76)	100.00 (52.94)
Total		21.18 (100.00)	78.82 (100.00)	100.00 (100.00)

Table 9.5 : Average Livestocks (value) Owned Per Household and Distribution of Population in Different Household Assets (Livestocks) Groups by Poverty Groups.

Sl. No.	Poverty Groups	Average per owning household	Distribution of Population in Households assets gr.				Total	
			No live- stocks	less than Rs.3000	3000 -5999	6000 -999		10000 +
<u>Group-A Hamlets</u>								
1.	DC&DE	1000.00	81.01 (8.23)	18.99 (44.12)	-	-	-	100.00 (18.37)
2.	DC&NDE	5466.67	78.85 (35.04)	7.69 (35.29)	5.77 (100.00)	1.92 (30.00)	5.77 (34.62)	100.00 (36.28)
3.	NDC&DE	---	---	---	---	---	---	---
4.	NDC&NDE	7528.57	84.10 (46.72)	3.59 (20.59)	---	3.59 (70.00)	8.72 (65.38)	100.00 (45.35)
	Total	5833.33	81.63 (100.00)	7.91 (100.00)	2.09 (100.00)	2.33 (100.00)	6.05 (100.00)	100.00 (100.00)

Group-B hamlets

1.	DC&DE	2666.67	91.44 (48.92)	2.70 (30.00)	5.86 (17.33)	---	---	100.00 (38.14)
2.	DC&NDE	6500.00	71.19 (10.12)	---	18.64 (14.67)	---	10.17 (15.38)	100.00 (10.14)
3.	NDC&DE	---	100.00 (1.69)	---	---	---	---	100.00 (1.20)
4.	NDC&NDE	6468.75	55.44 (39.28)	4.76 (70.00)	17.35 (68.00)	11.22 (100.00)	11.22 (84.62)	100.00 (50.51)
	Total	5928.57	71.31 (100.00)	3.44 (100.00)	12.89 (100.00)	5.67 (100.00)	6.70 (100.00)	100.00 (100.00)

Note : Value of assets are at current prices.

in group-A hamlets, thereby indicating that livestock asset is more important in the former than in the latter group of hamlets as a factor influencing poverty.

In brief, the evidence on the access of land resource and other income generating assets among the different poverty groups reveals that the 'poor' is generally characterised by inadequate access to land and other assets. On the other hand, the non-poor is generally in a relatively better position in both land and other assets. This differential in the possession of land and other assets explains the variation in income level between the 'poor' and the non-poor and hence on their level of calorie intake and expenditure level.

III

Occupational Characteristics

In table 9.6, we present the distribution of households belonging to different poverty groups by type of household occupation. Household occupation is determined from the list of gainful occupation pursued by the members of the respondent households as that which fetched the maximum earnings during the one year preceeding the date of survey. If the income from two occupations were equal the occupation of the most senior working member was recorded as the household occupation.³ As expected, the table shows that a higher proportion of households engaged in wage occupations is in poverty than those engaged in self-employed occupations.⁴ Though poverty still exists among the self-employed households, the proportion of these households living in poverty is much lower compared to those who are in the wage-employed occupations. This characteristic is more prominent in group-B than in group-A hamlets. A higher proportion of 'poor' among the wage-employed households implies that, on an average, their earnings are lower~~and~~ compared to the earnings of the self-employed.

Table 9.6 : Percentage Distribution of Households in Different Poverty Groups by Household Occupational Categories.

Sl. No.	Occupation	DC&DE	DC&N IE	NDC&DE	NDC&NDE	Total
<u>Group-A Hamlets</u>						
1.	Self-employed households	9.37	34.38	-	56.25	100.00
2.	Wage-employed Households	23.81	33.33	-	42.86	100.00
	All	12.94	38.12	-	52.94	100.00
<u>Group-B Hamlets</u>						
1.	Self-employed Households	11.36	11.36	-	77.27	100.00
2.	Wage-employed households	53.85	9.62	1.92	34.62	100.00
	ALL	36.37	10.42	1.04	54.17	100.00

Relatively lower earnings among the wage-employed households are due to several reasons. The wage-employed households, unlike the self-employed who own productive assets like land, quarries and other assets, in general own no or little productive assets, and, therefore, earn their living only by selling their labour power. In other words, their income level is influenced by factors like participation rates, level (or duration) of employment per working member and wage rates. If the participation rates, employment level and wage rates are reasonably high, the household may be able to earn income adequate enough to meet the required food-intake and other basic requirements. On the contrary, if any one of the above three factors is low the wage employed households may fail to earn adequate income. But, as we shall see in the next section, although there is not much difference between the 'poor' and the non-poor as far as the participation rates are concerned, but with regard to the level of employment the 'poor' do not compare favourably when viewed against the non-poor. Yet, even on this score the employment level does not appear to be too low, for it is observed that the employment level among the 'poor' in both the hamlet groups is about 4.2 or 4.3 days a week. We are therefore somewhat forced to conclude that wage received by the 'poor' is too low to allow them to earn adequate income.⁵

IV

Participation Rates and Level of Employment

Besides other factors, the level of participation rates in economic activities and the level (or duration) of employment are the important factors influencing income level, and hence poverty. Households with high level of participation rates and high level of employment, especially those who depend on wage-employment occupations, may earn income adequate enough to put them above the subsistence level, while the contrary may happen to those households with relatively lower participation rates and lower level of employment. In tables 9.7 and 9.8 we present respectively the participation rates and the level of employment among the different poverty groups. An examination of the above tables reveals that, in group-A hamlets, both participation rates and level of employment are relatively lower among the 'poor' than among the non-poor. In group-B hamlets, the participation rates among the 'poor' is relatively higher than among the non-poor, while the level of employment among the former is relatively lower compared with the latter

Table 9.7 : Participation Rates (MPR) of Different Poverty-Groups.

Sl. No.	Poverty Groups	Males	Females	Persons
<u>Group-A Hamlets</u>				
1.	DC&DE	48.78	50.00	49.37
2.	DC&NDE	61.54	44.87	53.21
3.	NDC&DE	-	-	-
4.	NDC&NDE	63.33	45.71	53.33
	All	59.81	46.15	52.79
<u>Group-B Hamlets</u>				
1.	DC&DE	61.82	41.07	51.35
2.	DC&NDE	66.67	44.00	52.54
3.	NDC&DE	50.00	-	28.57
4.	NDC&NDE	57.23	29.55	45.58
	All	59.68	35.29	48.28

A higher participation rate among the 'poor' seems quite likely and plausible. In the absence of adequate income generating assets, households attempt to earn income adequate enough to meet their minimum needs and other necessities by employing all able members of their households in gainful activities. By doing so, some resourceless households, particularly in group-A hamlets, were able to cross the poverty line. However, we found that in group-B hamlets the participation rates among the 'poor' is higher than that of the non-poor. Such phenomenon may arise because of the presence of children (0 - 14 years) in the workforce (Chapter 7) whose earnings are relatively lower than that of the adults. It may further be noted that the lower level (or duration) of employment among the 'poor' indicates that poverty and employment are inversely correlated.⁶ But what is more striking is that, despite the fact that a high proportion of poor are in the workforce and on an average a worker worked more than 4 days in a week (or more than 200 days in a year), they still live in poverty.⁷ This phenomenon reflects that no definitive conclusion can be drawn about a relation between participation rates, employment and poverty. An expansion of employment opportunities and even an increase in wage rate by non-economic or institutional forces need not solve the problem of poverty to any significant extent,⁸ unless employment is supplemented with income generating assets.

Table 9.8 : Persons-Days Employed Per Worker During a Reference Week by Different Poverty-Groups.

Sl. Poverty No. Groups	Males	Females	Persons
<u>Group-A Hamlets</u>			
1. DC&DE	4.70	3.63	4.18
2. DC&NDE	5.15	4.14	4.72
3. NDC&DE	-	-	-
4. NDC&NDE	5.51	4.48	5.04
ALL	5.24	4.21	4.78
<u>Group-B Hamlets</u>			
1. DC&DE	5.04	3.13	4.27
2. DC&NDE	5.55	4.09	5.03
3. NDC&DE	6.00	-	6.00
4. NDC&NDE	5.58	3.74	5.05
ALL	5.38	3.49	4.74

Note:- One person-day employed is referred to a whole day employment for a worker, which is equivalent to about 8 hours a day.

V

LiteracyandOther Demographic Characteristics

Table 9.9 presents the distribution of population of group-A hamlets in different poverty groups by literacy and educational level.⁹ As seen from the table, although the proportion of the literates is lower among the 'poor' than among the non-poor, on the whole literacy seems to be spreading among all categories of population.¹⁰ Another interesting feature emerging from the table is that the proportion of population with lower educational level is more or less identical between the 'poor' and the non-poor (see row 2 at table 9.9). However, the proportion of persons with higher educational level is relatively higher among the non-poor than among the 'poor'.¹¹ Such phenomenon implies that educational level has a significant influence on poverty, thus corroborating the general belief that "education affects consumption levels by enhancing the earning capacity of individuals".¹² Although education has a significant influence on poverty, yet in the absence of regular employment opportunities and lack of adequate income generating assets, its role in mitigating poverty is very limited

Table 9.9 : Per centage Distribution of Population in Different Poverty-Groups by Literacy and Level of Education.

(Group-A Hamlets)

Sl. No.	Educational Level	DC&DE	DC&NDE	NDC&DE	NDC&NDE
1.	Illiterates.	49.30	39.10	-	27.18
2.	Literates upto Middle School Level.	50.63	58.33	-	51.28
3.	Upto High School Level.	3.80	1.26	-	15.90
4.	Upto College Level.	1.27	1.28	-	5.64
	Total (2 - 4)	55.70	60.90	-	72.82
	Total	100.00	100.00	-	100.00

Table 9.10 presents some other demographic characteristics of different poverty groups. A glance at the table shows that the average size of the 'poor' households is larger than that of the non-poor. The differential in household size between the 'poor' and the non-poor is more marked in group-A than in group-B hamlets. For instance, the difference in the household size between the 'poor' and the non-poor is $(7.18 - 4.33)$ or 2.85 persons in group-A hamlets and $(6.72 - 5.73)$ or 0.99 persons in group-B hamlets.

A larger household need not necessarily have a low level of per capita calorie-intake and consumption expenditure. It may have a low level of per capita calorie intake and expenditure only if it has a large number of dependants per working member and (or) limited sources of income. However, if it has more earners and (or) multiple sources of income it should have, ceteris paribus, a high level of calorie intake and consumption expenditure. For those households who derived their income mostly from wage-employment activities, a large number of dependants per working member may push down their per capita calorie intake and expenditure level.

The data pertaining to population and worker dependency ratios bring out a contrast between group-A and group-B hamlets. In group-A hamlets, we observed that both the population and worker dependency ratios are higher among the 'poor' than among the non-poor. In group-B hamlets on the other hand, the non-poor households have a higher worker dependency ratio than the 'poor'. That is to say, in group-B hamlets the 'poor', unlike in group-A hamlets, have less dependants than the non-poor. This suggests that a large number of dependants per worker may be a contributory factor for poverty in group-A hamlets. In group-B hamlets on the other hand, large number of dependants may not be the reason for poverty. The reason perhaps lies with the fact that the earning capacity of a worker in a 'poor' household in group-B hamlets is relatively lower compared with a worker in the non-poor household. Therefore, even if the 'poor' have relatively less dependants than the non-poor, they could not cross the minimum level of calorie intake and expenditure level.

Table 9.10 Demographic Features of Different Poverty-Groups.

Sl. Poverty No. Groups	Average Household size	Population Dependency Ratio	Worker Dependency Ratio	Females per 100 males
<u>Group-A Hamlets</u>				
1. DC&DE	7.18	0.75	1.03	93
2. DC&NDE	5.38	0.61	0.88	100
3. NDC&DE	-	-	-	-
4. NDC&NDE	4.33	0.64	0.86	117
All	5.06	0.65	0.89	106
<u>Group-B Hamlets</u>				
1. DC&DE	6.72	0.96	0.95	101
2. DC&NDE	5.50	1.04	0.77	83
3. NDC&DE	7.00	0.75	2.50	75
4. NDC&NDE	5.73	0.95	1.22	79
All	6.06	0.96	1.07	88

The sex ratio, defined in terms of number of females per 1000 males, indicates that on an average, the 'poor' in group-A hamlets less females than males. In group-B hamlets on the other hand, we observed that although the number of females are less than males in both 'poor' and non-poor households, but relatively the 'poor' have more females than the non-poor. If the difference in sexes influences the earning capacity (or income level) of the household, then the above characteristic reflects that the earning capacity of females in group-A hamlets is higher than their counterparts in group-B hamlets. This is possible because the female participation rates in gainful activities, the number of days employed during a given week, wages, among other factors influencing poverty are relatively higher in group-A hamlets than in group-B hamlets.

Consumption Levels

In this section we shall attempt to give some indications of average consumption level in per capita terms by households belonging to different poverty groups. The relevant data are presented in tables 9.11 and 9.12. Per capita monthly consumption expenditure on food (row 1 - 9) and non-food items (row 10 - 13) are shown in tables 9.11a and 9.11b for group-A and group-B hamlets respectively. Of the total food consumption expenditure of about Rs. 100/- (row 14) as much as 57 per cent is spent by the 'poor' in group-A hamlets on cereals alone. Next in importance for the same poverty group in the same hamlet group is the consumption of fish and meat (animal protein) which accounts for about 23 per cent of total food consumption expenditure (row 5). As against this, in group-B hamlets cereals and animal protein account for about 64 and 17 per cent respectively of the total food expenditure. However, this differential in the proportion of expenditure between the two hamlet groups perhaps accounts for the differences in the terms of trade between them, for, as

Table 9.11a : Per Capita Monthly Consumption Expenditure
(Commodity-wise) by Poverty Groups.

(Group-A Hamlets) (Second Round of Survey)

Sl. Item No.	DC&DE	DC&NDE	NDC&NDE	All
1. Cereals.	56.66	58.26	68.20	62.46
2. Pulses.	1.50	1.43	1.63	1.53
3. Milk and Milk Products.	0.72	2.42	13.94	7.32
4. Edible Oils	4.16	6.08	9.01	7.05
5. Fishes, meat, etc.	23.03	27.09	38.25	31.40
6. Vegetables and Fruits.	6.14	10.64	12.89	10.87
7. Sugar and Gur	3.48	5.11	6.62	5.50
8. Salt and Spices.	1.36	1.75	2.19	1.88
9. Beverages.	2.83	4.03	5.94	4.67
10. Fuel and Light.	4.05	5.68	6.82	5.90
11. Clothing and Footwear	5.51	12.24	16.02	12.53
12. Other durable Goods.	0.76	6.76	23.41	13.19
13. Miscellaneous	6.27	11.40	11.75	13.33
14. Total (1-9)	99.88	116.79	158.75	132.67
15. Total (1-13)	115.46	152.85	222.75	177.63

Note: There is no observations in the Group NDC&DE.

Table 9.11b : Per Capita Monthly Consumption Expenditure
(Commodity-wise) by Poverty Groups.

(Group-B Hamlets) (Second Round of Survey)

Sl. No.	Items	DC&DE	DC&NDE	NDC&DE	NDC&NDE	All
1.	Cereals.	57.37	61.89	66.79	67.05	62.83
2.	Pulses.	2.50	3.01	4.64	3.55	3.11
3.	Milk and Milk Products.	1.16	4.52	5.57	14.96	8.54
4.	Edible Oils	2.96	4.26	2.97	6.92	5.10
5.	Fishes, meat, etc.	15.72	24.51	18.55	32.62	25.19
6.	Vegetables and Fruits.	6.49	9.08	4.45	9.10	8.05
7.	Sugar and Gur.	1.91	4.00	2.23	5.27	3.82
8.	Salt and Spices	0.98	1.57	0.93	1.91	1.51
9.	Beverages.	1.15	2.63	1.48	4.04	2.76
10.	Fuel and Light.	4.39	5.81	4.64	5.99	5.35
11.	Clothing and Footwear.	3.68	7.60	3.71	10.54	7.54
12.	Other durable goods.	0.77	9.25	0.00	24.65	13.71
13.	Miscellaneous.	3.87	5.92	4.64	7.58	5.96
14.	Total (1-9)	90.25	115.47	107.61	145.43	120.91
15.	Total (1-13)	102.96	144.05	120.59	194.18	153.47

table 9.12 indicates, the proportion of calories obtained by the 'poor' from the principal food items is almost the same in the two hamlet groups. Neither one finds much divergences between the two 'poor' groups in group-A and group-B hamlets in the proportion of expenditure on food (row 14, tables 9.11a and 9.11b) to total consumption expenditure (row 15, tables 9.11a and 9.11b). However, if one considers a lower proportion of expenditure on food to total consumption expenditure and a lower proportion of expenditure on cereals to total food expenditure is any index of development, a detailed examination of the figures in the tables indicate that, of the 'poors' in the two hamlet groups, the 'poor' in group-A hamlets is marginally better placed. Nevertheless, we feel that too much need not be read for this small discrepancies.

The substantive point that emerges is that about 86 - 87 per cent of total expenditure is spent on food by the 'poor' group in both the hamlets. Even the non-poor group spend as much as 75 - 79 per cent of their total consumption expenditure on food alone.¹³ And of the total food expenditure, the 'poor' in group-A and group-B hamlets spend respectively about 57 and 64 per cent on cereals alone. In spite of spending three-fourths to more than four-fifths of the 'poor' households' total expenditure on food alone, the

Table 9.12 : Per Capita Per Day Consumption of Calories (from important food items) by Poverty Groups.

Sl. No.	Items	DC&DE	DC&NDE	NDC&DE	NDC&NDE	Total
		<u>Group-A Hamlets</u>		<u>Second Round of Survey</u>		
1.	Cereals.	1605.44 (84.16)	1624.51 (79.83)	- -	1875.29 (73.90)	1734.45 (77.46)
2.	Fishes, meat and eggs.	51.12 (2.68)	58.93 (2.90)	- -	81.85 (3.23)	67.87 (3.03)
3.	Vegetables and fruits.	38.75 (2.03)	65.25 (3.21)	- -	87.66 (3.45)	70.54 (3.15)
4.	Other Items.	212.36 (11.13)	286.30 (14.07)	- -	492.78 (19.42)	366.16 (16.35)
5.	All items	1907.67 (100.00)	2035.00 (100.00)	- -	2537.58 (100.00)	2239.00 (100.00)
		<u>Group-B Hamlets</u>		<u>Second Round of Survey</u>		
1.	Cereals.	1646.07 (86.36)	1702.32 (80.23)	1892.39 (84.58)	1790.57 (74.28)	1670.31 (79.00)
2.	Fishes, meat and eggs.	44.57 (2.34)	68.06 (3.21)	51.95 (2.32)	84.57 (3.51)	65.02 (3.07)
3.	Vegetables and fruits.	48.30 (2.53)	71.38 (3.36)	32.28 (1.44)	82.00 (3.40)	65.24 (3.09)
4.	Other Items	167.07 (8.76)	279.92 (13.20)	260.77 (11.60)	453.48 (18.81)	313.72 (14.84)
5.	All Items	1906.01 (100.00)	2121.68 (100.00)	2237.40 (100.00)	2410.62 (100.00)	2114.29 (100.00)

Note : Figures in parenthesis are percentages.

calorie intake falls short of the required level. It is less than 2000 per capita for the 'poor' households.

This apart, another indication of level of living of the 'poor' is that rice is the only cereal providing for 84 - 85 per cent of calorie intake.¹⁴ Such heavy reliance on one crop, besides failing to provide the needed balance of protective elements against diseases, leaves the consumer vulnerable to crop failure arising from unfavourable ~~mean~~ weather conditions.¹⁵

Although poverty seems to be the main reason for reliance on one cereal (i.e., rice) for most of the calorie intake, our field investigation suggests that the calorie deficiency is also partly due to ignorance in the nutritional value of various foods. For example, per capita calorie intake, whether he belongs to 'poor' or non-poor group, from vegetable and fruits is less than 4 per cent. Likewise, low consumption of milk is partly attributable to lower preference and choice for the product.

One final point: the tables presented relate to the busy period when 'business' was good. One may, therefore, reasonably expect that during slack season the level of living was same, if not worse.

Clothing and Footwear: The monthly expenditure on clothing (and textile) and footwear for the two hamlet groups is given in row 11 of tables 9.11a and 9.11b. A few preliminary points. First, the data relate to the busy period and as such it is likely that they do not really portray monthly average expenditure. Second, it is difficult to estimate the quality of clothing, its durability and comfort on the basis of the data. Thirdly, lots of junk and old clothing are nowadays smuggled into the area from Europe and America via Bangladesh, and sold at cheap rate. The type of clothing usually found from such junk bundle is considered good, durable and fashionable by the villagers, and the price at which they are sold is only a fraction of tailoring cost, not to speak of its new equivalent.

A comparison between the two hamlet groups reveals that the 'poor' in group-A hamlets spends for clothing and footwear a little more than his counterpart in group-B hamlets, both in absolute terms as well as in terms of proportion to total expenditure. However, intra-hamlet comparison shows that the 'poor' in group-A hamlets spends in clothing and footwear about 28 per cent of what a non-poor in the same hamlet group spends. The respective proportion in group-B hamlets is 34 per cent.

Before we conclude, some general observations may be given. Firstly, we note that the consumption pattern in the hamlets follows the well-known Engel's law. That is, the proportion of expenditure spent on food tends to decline with a rise in total expenditure. Secondly, and somewhat as a corollary to the first, it is seen that as one moves from the 'poor' towards the non-poor, the percentage of calories consumed from cereals tends to decline. Lastly, as was to be expected, the differential between the 'poor' and the non-poor in the consumption of some 'superior' items like fish, meat, clothing, durable goods, etc. appears to be significant.

VII

Summary

The important points emerging from the foregoing sections may be summarised as follows:

- i. The mean household income among the 'poor' in both the hamlet groups is too low compared with that of the non-poor. The 'poor' derived a major part of their income from wage activities while the non-poor did so from many diversified sources with agriculture, trade and commerce as the two major sources of income.
- ii. The evidences on the access of land resource and other income generating assets among the different poverty groups reveal that the 'poor' is generally characterised by inadequate access to land resource and other assets. The non-poor, on the other hand, have adequate access to both land and other assets.
- iii. A relatively higher proportion of households engaged in wage occupations is in poverty than those engaged in self-employed occupations.
- iv. The 'poor' in group-A hamlets reported a relatively lower participation rates and lower level (or duration) of employment compared with the non-poor. In group-B

hamlets, the participation rates among the 'poor' is higher than that of the non-poor, but the level of employment is higher among the latter.

- v. The proportion of the literates is lower among the 'poor' than among the non-poor, and the proportion of persons with higher level of education is also relatively lower among the former than among the latter.
- vi. In group-A hamlets, the average household size and worker-dependency ratio are higher among the 'poor' than among the non-poor households. In group-B hamlets, the household size is larger among the 'poor' than among the non-poor, but the latter have more dependants than the former households.
- vii. The 'poor' in group-A hamlets, on an average, have less females than males and the non-poor have more females than males. The 'poor' in group-B hamlets, have more females compared with the non-poor. This indicates that that the earning capacity of females in group-A hamlets is higher than their counterparts in group-B hamlets.
- viii. The poor in both the hamlet groups spend about 86-87 per cent of total consumption expenditure on food. And out of the total expenditure on food, the 'poor' in group-A and group-B hamlets spend respectively about 57 and 64

per cent on cereals. Yet they can not meet the required quantity of calories from their meal. While calorie deficiency is mainly due to poverty, partly it may be attributed to ignorance in the nutritional value of diet. About consumption on clothing and footwear, the expenditure both in terms of absolute amount and in terms of proportion to total expenditure, the amount spent is very low. However, it is likely that the availability of cheap and junk clothing in the area substantially compensates the low expenditure.

- ix. The consumption pattern follows the well known Engel's law. That is, with a rise in income the percentage of expenditure spent on food tends to fall.
- x. Although the per capita expenditure on all items of consumption is higher among the non-poor than among the 'poor', but the variation is significant in case of 'superior' items like milk and milk products, fishes, meat, clothing and footwear, durable goods, etc.
- xi. The percentage share of consumption of calories from cereals tend to decrease as one moves from the 'poor' towards the non-poor, whereas the opposite is observed in consumption of calories from other food items.

APENDIX TABLES TO

CHAPTER 9

Table 9.A₁ : Mean Value of Consumption Expenditure Per Consumer Unit Per month by Sources of Consumption and Household Categories.

(Second Round of Survey)

Sl. No.	Households Categories	Group-A Hamlets			Group-B Hamlets		
		Ownstock	Market	Total	Ownstock	Market	Total
		(Rs.)					
1.	Landless	21.22 (13.68)	133.86 (86.32)	155.08 (100.00)	29.80 (22.56)	102.28 (77.44)	132.08 (100.00)
2.	Marginal	58.04 (37.89)	95.12 (62.11)	153.16 (100.00)	84.34 (65.51)	44.40 (34.49)	128.74 (100.00)
3.	Small	84.25 (43.18)	110.85 (56.82)	195.10 (100.00)	101.95 (58.42)	72.58 (41.58)	174.51 (100.00)
4.	Medium	88.92 (37.03)	151.25 (62.97)	240.17 (100.00)	104.46 (55.48)	83.84 (44.52)	188.30 (100.00)
5.	Big	90.59 (37.71)	149.64 (62.29)	240.23 (100.00)	118.27 (58.60)	83.56 (41.40)	201.83 (100.00)
6.	Total (1-5)	63.70 (35.86)	113.93 (64.14)	177.63 (100.00)	64.54 (42.05)	88.93 (57.95)	153.47 (100.00)
7.	Total (2-5)	69.73 (38.59)	110.94 (61.41)	180.67 (100.00)	103.39 (58.67)	72.82 (41.33)	176.22 (100.00)

Note : Figures in parenthesis are the percentages.

Table 9.A₂ : Mean Consumption of Calories Per Consumer Unit Per Day
by Sources of Consumption and Household Categories.

(Second Round of Survey)

Sl. Households No. categories	Group-A Hamlets			Group-B Hamlets		
	Ownstock	Market	Total	Ownstock	Market	Total
1. Landless	45.00 (2.04)	2163.58 (97.96)	2208.58 (100.00)	127.61 (6.21)	1928.81 (93.79)	2056.42 (100.00)
2. Marginal	893.10 (40.55)	1250.72 (59.45)	2103.82 (100.00)	1894.25 (86.77)	288.78 (13.23)	2183.03 (100.00)
3. Small	1660.46 (70.68)	688.83 (29.32)	2349.29 (100.00)	2001.15 (86.29)	317.84 (13.71)	2318.99 (100.00)
4. Medium	1544.48 (61.13)	982.13 (38.87)	2526.61 (100.00)	2062.24 (85.39)	352.77 (14.61)	1415.01 (100.00)
5. Big	1935.10 (76.65)	589.36 (23.35)	2524.46 (100.00)	2104.39 (88.56)	271.82 (11.44)	2376.21 (100.00)
6. Total (1-5)	1055.60 (47.15)	1183.42 (52.85)	2239.02 (100.00)	1019.30 (46.61)	1167.63 (53.39)	2186.93 (100.00)
7. Total (2-5)	1199.09 (53.45)	1044.25 (46.55)	2243.34 (100.00)	2016.35 (86.43)	316.52 (13.57)	2332.87 (100.00)

Note : Figures in parenthesis are percentages.

Table 9.A1₃ Percentage Share of Consumption of Calories by Sources of Consumption and Households Categories.

Sl. No.	Households Categories	Sources of Consumption.	Items of Consumption			
			Cereals	Meat, Fishes, etc.	Vegetables and fruits	All items
1.	Landless	Ownstock	1.81	2.58	1.76	6.21
		Market	79.74	0.40	1.57	93.79
		Total	81.55	2.98	3.33	100.00
2.	Marginal	Ownstock	79.66	2.24	1.64	86.77
		Market	0.00	0.67	0.91	13.23
		Total	79.66	2.91	2.55	100.00
3.	Small	Ownstock	77.15	2.25	1.91	86.29
		Market	0.00	1.11	1.24	13.71
		Total	77.15	3.36	3.15	100.00
4.	Medium	Ownstock	75.49	2.00	1.63	85.39
		Market	0.00	1.17	1.33	14.61
		Total	75.49	3.17	2.96	100.00
5.	Big	Ownstock	73.98	2.00	0.90	88.56
		Market	0.00	1.43	1.89	11.44
		Total	73.98	3.43	2.79	100.00
6.	Total (1-5)	Ownstock	39.42	2.33	1.65	46.61
		Market	39.58	0.74	1.44	53.39
		Total	79.00	3.07	3.09	100.00
7.	Total (2-5)	Ownstock	76.48	2.09	1.54	86.43
		Market	0.00	1.08	1.31	13.57
		Total	76.48	3.17	2.85	100.00

Table 9.Aa₃ : Percentage Share of Consumption of Calories by Sources of Consumption and Household Categories.

(Group-A Hamlets) (Second Round of Survey)

Sl. No.	Households Sources of Consumption	Items of Consumption			
		Cereals	Meat, fishes, etc.	Vegetables and fruits	All items
1. Landless	Ownstock	-	1.72	0.32	2.04
	Market	79.21	1.04	2.32	97.96
	Total	79.21	2.76	2.64	100.00
2. Marginal	Ownstock	37.44	1.92	1.20	40.55
	Market	41.52	1.02	1.87	59.45
	Total	78.96	2.94	3.07	100.00
3. Small	Ownstock	67.92	1.22	1.53	70.68
	Market	9.01	2.08	1.82	29.32
	Total	76.93	3.30	3.35	100.00
4. Medium	Ownstock	57.67	1.33	2.13	61.13
	Market	12.64	2.24	2.05	38.87
	Total	70.31	3.57	4.18	100.00
5. Big	Ownstock	73.56	1.30	1.15	76.65
	Market	2.57	1.67	1.83	23.35
	Total	76.13	2.97	2.98	100.00
6. Total (1-5)	Ownstock	44.18	1.65	1.22	47.15
	Market	33.28	1.38	1.93	52.85
	Total	77.46	3.03	3.15	100.00
7. Total (2-5)	Ownstock	50.36	1.64	1.34	53.45
	Market	26.86	1.48	1.88	46.55
	Total	77.22	3.02	3.22	100.00

Table 9.Aa₄ : Per Capita Monthly Consumption Expenditure Commodity
Wise by Household Farm-Sizes.

(Group-A Hamlets) (Second Round of Survey)

Sl. No.	Items						(Rs.)
		Landless	Marginal	Small	Medium	Big	All
1.	Cereals.	63.55	58.78	67.74	63.89	70.39	62.46
2.	Pulses.	1.09	1.53	1.13	2.27	1.86	1.58
3.	Milk and Milk Products.	4.39	3.69	10.26	18.85	14.48	7.32
4.	Edible Oils	5.94	6.61	7.38	10.10	7.55	7.05
5.	Fishes, meat, etc.	27.46	28.39	36.64	44.46	33.56	31.40
6.	Vegetables and fruits.	12.18	9.61	9.53	17.78	11.54	10.87
7.	Sugar and Gur.	5.40	5.18	5.54	6.70	6.05	5.50
8.	Salt and spices.	1.77	1.86	1.80	2.61	1.62	1.88
9.	Beverages.	4.01	4.04	4.96	7.745	5.77	4.67
10.	Fuel and Light.	5.74	5.83	6.01	7.61	5.04	9.90
11.	Clothing and Footwear.	8.44	10.45	14.81	17.97	19.19	12.53
12.	Other durables Goods.	2.25	7.19	10.73	19.11	47.38	13.19
13.	Miscellaneous.	12.87	10.26	18.57	21.37	15.79	13.33
14.	Total (1-9)	125.79	119.70	144.98	174.11	152.82	132.67
15.	Total (1-13)	155.08	153.42	198.10	240.17	140.23	177.63

Table 9.AB₄ : Per Capita Monthly Consumption Expenditure Commodity-Wise by Household Farm-Sizes.

(Group-B Hamlets) (Second Round of Survey)

Sl. No.	Items	(Rs.)					
		Landless	Marginal	Small	Medium	Big	All
1.	Cereals.	59.93	56.80	67.05	68.15	65.81	62.83
2.	Pulses.	2.92	2.99	3.44	3.54	2.76	3.11
3.	Milk and Milk Products.	4.09	5.16	10.86	14.26	25.60	8.54
4.	Edible Oils	3.99	5.14	6.37	6.08	7.93	5.10
5.	Fishes, meat, etc.	22.74	20.83	30.41	28.78	31.90	25.19
6.	Vegetables and Fruits.	6.22	8.22	10.21	9.98	11.90	8.05
7.	Sugar and Gur.	3.01	3.59	3.91	5.39	4.97	3.82
8.	Salt and Spices.	1.34	1.44	1.67	1.77	1.71	1.51
9.	Beverages.	2.21	2.36	3.11	4.00	3.31	2.76
10.	Fuel and Light.	5.96	4.64	5.61	4.38	4.02	5.35
11.	Clothing and Footwear.	6.52	6.68	8.69	9.91	9.95	7.54
12.	Other Durable Goods.	7.72	5.68	17.38	25.45	32.13	13.71
13.	Miscellaneous.	5.39	4.71	6.88	7.13	7.28	5.96
14.	Total (1 - 9)	106.49	106.54	137.04	141.95	155.90	120.91
15.	Total (1 - 13)	132.08	127.25	175.60	188.83	208.86	153.47

Notes and References

1. See Appendix A: Some Features Relating to Wage Rates.
2. The various studies on poverty in the country also show that the poor generally belongs to the landless and marginal land holders. See Chapter 3, Section IV.
3. This method of classification of households by occupations is popular in India. It has been adopted in surveys conducted by the NSS, Visaria(1980), Singh(1985), among others.

NSS, 27th Round, Instruction to Field Staff, Vol. I, Delhi.

Visaria, P.(1980), "Poverty and Unemployment in India: An Analysis of Recent Evidence" World Bank Staff Working Paper no.417.

Singh, B.(1985), "Agrarian Structure, Technological Change and Poverty: Microlevel Evidence", Agricole Publishing Academy, Delhi.

4. A similar relationship has also been established by Thimiah(1983), Nayak and Prasad(1984) and Singh(1985). Thimiah, G.(1983), "Inequality and Poverty", Himalaya Publishing House, Bombay.

Nayak, V. and Prasad, S. (1984), "On Levels of Living of Scheduled Castes and Scheduled Tribes", Economic and Political Weekly, No. 30.

Singh, B. (1985), op cit.

5. See Appendix A: Some Features Relating to Wage Rates.
6. Sinha (1978), Visaria (1980), among others have also shown that poverty and unemployment are positively correlated. Their observations are re-produced below:

"The problem of rural households in the expenditure groups Rs 11 - 21 and Rs 21 - 34 has to be the predominant concern of rural employment policyif unemployment is wiped off in these two groups by providing adequate work at the prevailing rates of wages, the per capita monthly expenditure will rise by an average of 10 per cent..... a one per cent decline in unemployment rate reduces the proportion of the poor by 0.24 per cent, while a one per cent increase in wage rate reduces it by 1.05 per cent". See Sinha, J.N. (1978), "Rural Employment Planning: Dimensions and Constraints", Economic and Political Weekly, Annual No.

"Although poverty is more wide-spread than unemployment, there is a clear association between the two: the poor did report non-availability of opportunities for work to a considerably greater extent than the average level",

See Visaria, P. (1980), "Poverty and Unemployment in India",
Indian Journal of Agricultural Economics, No.3.

7. Such relationship between poverty and employment has also been observed by Rao in his study of a taluk in East Godavari District of Andhra Pradesh. According to his study, "more members of the non-cultivating agricultural labour households are in the work force, they all work for more days in the year, and still remain more poor. The equation between more work or employment and less poverty does not seem to hold good here". See Rao, B.S. (1982), "Productivity, Employment and Poverty in Rural Areas: A Study of an Agricultural Advanced Area in Andhra Pradesh", in "Poverty: An Interdisciplinary Approach", (ed) Madras Institute of Development Studies, Madras.
8. In a study by Sinha, it has been shown that while no definitive conclusion can emerge about a relation between unemployment and poverty, there is however an inverse relation between wage rate and poverty. See Sinha, J.N. (1981), "Full Employment and Anti-Poverty Plan: The Missing Link", Economic and Political Weekly, No.50.
9. Literacy rates in group-B hamlets is too ~~low~~ low (11.38 per cent in 1981), and the literates belong to the lowest level of education. As such, the literacy has been assumed

to have no significant impact at all on the economic status of the people. Therefore, we have not examined the literacy and educational characteristics of the different poverty groups in group-B hamlets.

10. This observation is similar with Visaria's findings in his study in Western India. Based on the unpublished data of the NSS, 27th round in Gujarat and Maharashtra, Visaria found that although there is a general tendency for the proportion of illiterates to vary inversely with the per capita consumption expenditure, but on the whole literacy seems to be spreading even among the bottom deciles. See Visaria, P(1977), "Living Standards, Employment and Education in Western India, 1972-73", ESCAP - IBRD Working paper No. 1.
11. Dasgupta and Tilak, in their empirical analysis on the distribution of education among income groups have also found that "secondary education is fairly equitable and higher education is monotonically increasing function of incomes". See Dasgupta, Ajit, K., and Tilak, J.B(1983), "Distribution of Education among Income Groups: An Empirical Analysis", Economic and Political Weekly, No.33 1983.
12. Nayak, V. and Prasad, S(1984), op cit.

13. In India, it has been estimated that about 82 - 83 per cent of consumption expenditure of the expenditure classes of Rs 0 - 13 to 34 - 43 was spent on food.

See Rao, V.K.R.V. (1982), "Food, Nutrition and Poverty in India"
Vikas Publishing House Pvt. Ltd, New Delhi, p. 58

14. Cereals constitute about two-thirds of the Indian and Filipinos' calorie intake and more than 70 per cent of Pakistan's, compared with less than one-quarter in the United States. See Myrdal, Gunnar. (1968), "Asian Drama", Vol. I, Penquin Books, Harmondsworth, p. 548.

15. Myrdal, Gunnar. (1968), op cit, p. 548.

CHAPTER 10SUMMARY AND CONCLUSIONS

In the preceeding chapters our interest was focused on the different aspects of poverty in the two group of hamlets (or census villages) in the border areas of Khasi Hills in Meghalaya. In order to have an overall view of the stud the present chapter attempts to bring together the important themes emanating from our analysis and suggest necessary policy prescriptions for alleviating poverty in the area.

The Important Themes : Using the information on the dietary composition and expenditure of sample households collected from the two hamlet groups, we have examined (in chapter 8) the incidence and severity of poverty in the two hamlet groups during the slack (first round of survey) and the busy season (second round of survey). In estimating the incidence of poverty both caloric and expenditure norms have been adopted. The important points that come forth from the analysis on the incidence of poverty are the following:

- i. A very high proportion of population, particularly during the slack season, in both the hamlet groups live in poverty.

- ii. Comparing the magnitude and severity of poverty between the two hamlet groups, that is, group-A and group-B hamlets, poverty incidence is both higher and more severe in the latter group than in the former. The difference in poverty is more sharp during the slack season than during the busy season.
- iii. The impact of seasonality on poverty incidence is more seen when it is measured in terms of expenditure norm rather than caloric norm. This reflects that the changes in season have a stronger effect on the expenditure (or in-come) level than on the food intake level. Such a phenomenon could happen if households attach more importance on other necessities than food or lack of nutritional knowledge. Also rigidity in the consumption of traditional food items may result in poor calorie intake despite adequate expenditure level.

The relationship between poverty and other variables are examined by using Chi-square test and multiple correlation analysis. The variables selected for examining the association through the chi-square test are land possession of limestone quarries (group-A hamlets only), possession of livestock, number of dependants per working member in a household, family size, number of days employed

per worker in a household during the reference week, educational level (group-A hamlets only); and household occupation. In the multiple correlation analysis, the variables considered are per capita calories intake (as dependent variable), monthly per capita consumption expenditure, level of employment per working member in a household during a period of 30 days, the size of operational land holding per consumer unit, and family size - all as independent or explanation variables.

The chi-square test shows that in group-A hamlet poverty is significantly associated with possession of limestone quarries, family size, level of employment, educational level and household occupation, during both the rounds of survey. The association with land possession is found to be significant during the first round of survey only. In group B hamlets, the test shows that poverty is significantly associated with land possession, possession of livestock, number of dependants per working member in the household, level of employment and household occupation during both rounds of survey (see table 8.4).

The multiple correlation analysis shows that in group -A hamlets, monthly per capita consumption expenditure is the most important and reliable explanation variable of the variation in per capita calorie-intake of

the households in both the rounds of survey. Employment level has been found to be statistically significant during the first round of survey only. In group-B hamlets, on the other hand, monthly per capita consumption expenditure and the level of employment are the important explanatory variables in both the rounds of survey. Land holding is an important variable only during the second round of survey, which co-incide with the harvesting period in the area.

Having seen that per capita consumption expenditure is the most reliable and most important variable explaining calorie-intake, an attempt has therefore been made to find out its relationship with the level of employment, land holding and family size. The relationship between per capita consumption expenditure with land holding, and family size are found to be statistically significant in both the rounds of survey, while the relationship with employment level is significant during the second round of survey only. In other words, for determining the incidence of poverty, we find that of all the variables we have examined, the principal ones are land holding, family size and employment level per working member. In group-A hamlets, about 61 to 75 per cent of the variation in per capita consumption expenditure is explained by the above three variables, while in group-B hamlets they account for about 32 to 53 per cent (see table 8.7).

Having broadly identified the important variables affecting the economic condition of the people in both the hamlet groups in general, let us now see why poverty incidence is relatively higher in group-B than in group-A hamlets. An examination of various infrastructural facilities available in the village and of the pattern of distribution of important factors influencing poverty (Chapter 4 to 7) brings out a relatively superior position of households in group-A hamlets vis-a-vis group-B hamlets. This shows that the difference in poverty incidence between the two hamlet groups is also due to the inter-hamlet differences in the availability of infrastructural facilities and the pattern of the distribution of factors influencing poverty.

Table 10.1 summarises the position of group-A and group-B hamlets with respect to selected (important) factors influencing poverty. The table shows that with the exception of the possession of livestock, worker participation rates, and the level of employment which are a little higher in group-B than in group-A hamlets, the latter group of hamlets is in a better position than the former. For instance, group-A hamlets are

Table 10.1 : Summary of Selected Indicators.

Sl. Characteristics No.	Group A Hamlets	Group B Hamlets
1. <u>Availability of Amenities:</u>		
(i) Primary Schools	11	3
(ii) Middle Schools	1	-
(iii) P.O./B.P.O.	2	-
(iv) Commercial Bank	1	-
(v) Dispensary	1	-
(vi) Veterinary Service	1	-
(vii) Market	1	-
(viii) Number of Hamlets Electrified.	10	-
2. Percentage of Operating Households.	87.36	37.00
3. Average holding per opera- ting Household(in bighas)	14.33	18.68
4. Percentage of Households possessing Limestones Quarries.	20.69	-
5. Percentage of Households Possessing Livestocks.	17.24	21.00
6. Average Value of Livestock per possessing Household (Rs).	5833.33	5928.57
7. <u>Main Worker-Population Ratio</u>		
Males	59.71	60.00
Females	46.22	36.17
Persons	52.75	48.84

Table I : Summary of Selected Indicators.

Sl. Characteristics No.		Group A Hamlets	Group B Hamlets
8. <u>Industrial Distribution of Workers:</u>			
	Primary Sector	45.22	79.93
	Secondary "	24.77	10.54
	Tertiary "	30.01	9.52
9. <u>Class of Workers:</u>			
	(i) Self-employed Workers	43.04	21.43
	(ii) Wage-employed Workers	38.70	57.14
	(iii) Unpaid helpers in Family farms	15.22	21.43
	(iv) Salaried Workers	3.04	-
10. <u>Percentage of Households by types of Occupations:</u>			
	(i) Self-employed	74.71	44.00
	(ii) Wage-employed	25.29	56.00
11. <u>Person-days employed Per Worker Per Worker in a Week:</u>			
<u>Slack Seasons:</u>	Males	5.14	5.05
	Females	3.62	3.55
	Persons	4.45	4.53
<u>Busy Season:</u>	Males	5.24	5.38
	Females	4.21	3.49
	Persons	4.78	4.74

.....Contd.....

Table I : Summary of Selected Indicators

Sl. No.	Characteristics	Group A Hamlets	Group B Hamlets
12.	<u>Percentage of Households where Average employed is less than 4 days in a Week.</u>		
	(i) Slack Season	11.49	12.00
	(ii) Busy Season	2.35	13.54
13.	<u>Selected Demographic Characteristics:</u>		
	(i) Literacy	65.14	12.29
	(ii) Average Family Size	5.06	6.06
	(iii) Worker-Dependency Ratio	0.89	1.07
	(iv) Females per 100 Males	106	88
14.	<u>Average Household Income Annually (At Current Prices)</u>	(Rs.) 7198.48	5663.50
15.	<u>Per Capita Income (At Current Prices)</u>	(Rs.) 1728.45	1159.13
16.	<u>Per Capita Monthly Consumption Expenditure :</u>		
	(i) Slack Season	150.05	111.50
	(ii) Busy Season	177.63	153.47

in a better position with respect of availability of important amenities — like schools, post office, banks, dispensary, veterinary facilities, market and electricity; possession of land, limestone quarries, structure of the working force, occupational structure, literacy and level of education, worker-dependency ratio, family size, household income as well as per capita monthly expenditure.

Further, we have seen in chapter 6 that households in group-A hamlets, on an average, have more diversified sources of income than their counterparts in group-B hamlets, who derived income from one or two sources only. This perhaps may be one of the reasons that poverty incidence is relatively higher in the latter than in the former group of hamlets.

Policy Prescriptions: Against the findings given above, it may now be useful to suggest certain broad policy measures which may be undertaken to reduce, if not eradicate poverty in the border areas of the state. However, it is necessary to note that these measures indicate broad policy directions and do not present specific details:

- i. If poverty is interpreted as lack of adequate diets, the multivariate analysis suggests the consumption expenditure (or income) is the most important determinant of poverty in both the hamlet groups. Therefore, the above relationship calls for measures and policies which aim at improving the expenditure (or income) level of all people in general and the poor in particular.
- ii. The expenditure or income level of the household is influenced by several factors. The most important one is household's access to productive asset. Of the various productive asset, land is the most important. However, land asset is not evenly distributed among the households. This is more true in case of group-B hamlets where more than 60 per cent of the households are not operating any land. But it is unfortunate that land redistribution is rather not possible in the area because, as pointed out earlier, of the constraint imposed by the institutional land system supported by the Indian Constitution. Therefore, the policy implications would be the provision of non-land assets to the

poor. At this stage, it may be mentioned that a proper implementation of the IRDP programme in the border villages would go a long way towards reducing poverty in the area, so that the poorest among the poor could be provided with income generating assets and access to credit and other inputs. One of the important non-land assets which play an important role in augmenting the household income seems to be livestock.

- iii. Given the impossibility of land redistribution and the limited scope for provision of adequate assets to the poor, the economic condition of the poor is primarily determined by the employment level and wages. The employment level in the area, as evinced from our study, is reasonably high. The worker among the poor households worked, on an average, for more than 4 days in a week (or more than 200 days in a year). This reflects that additional employment opportunities alone will not be able to make a serious dent on the problem of poverty in the area. The effect of additional employment opportuni-

ties on rural poverty will depend to a great extent on the level of wages. The agricultural wage in the area is rather low. This seems to be the main reason why most of the wage-employed households are in poverty. The most important step to be taken to enable the agricultural labourers to move above the poverty line is to ensure a reasonable level of need-based minimum wage along with guaranteed employment. But at the same time it should be noted that one reason for a low wage in the area appears to be due to low productivity of land, and not due to the weak bargaining power of the labour. Hence, to enable the farmers to pay a reasonable wage rate, it is required that the level of productivity of land and labour be increased. Without increased productivity, it will not be possible to ensure a reasonable wage rate to the labour. The level of productivity of labour should also be higher than the wage rate in view of the need to generate a surplus for economic growth.

- iv. Productivity of land and labour depends among other things, on the level of diversification of agriculture. For building a diversified agricultural economy, effort should be directed towards an integrated development of crop production, livestock and poultry, fisheries and forestry and simultaneously improvement in all these fields.

- v. Apart from employment in land-based activities the potentialities of employment in non-agricultural activities has to be fully exploited in order to accommodate those who can not find work in the land based occupations. Taking into consideration the presence of large deposits of limestones, coal, forest resources and its nearness to Bangladesh, this area has a great potentiality for the development of small scale and cottage industries (or even medium scale industries), besides expansion of trade and commerce (both internal and border trade), and other activities in the tertiary sector. It may be noted that the Cement Research Institute of India has indentified Shella - Mawlong area in the border areas of Khasi Hills as the most appropriate places for the setting up of mini cement plant. 1

Expansion of non-farm activities will not only raise the employment level and income of the people, but would also give a fillip to other activities including agriculture, through their forward and backward linkages, thus promoting a closer integration of agriculture and industry in the rural economy.

vi. Poverty and education is inversely correlated.

Education affects consumption levels by enhancing the earning capacity of the workers. Hence, it is suggested that expansion and improvement of school facilities in the area will go a long way towards reducing poverty in the area.

vii. Though some of the programmes to improve the levels of living of the people in general and the poor in particular -- such as distribution of essential commodities through the public distribution system, and several other programmes under the Minimum Needs Programme, Integrated Rural Development Programme, National Rural Employment Programme, Rural Landless Employment Guarantee Programme, etc., have all been in operation (see Appendix B) their haphazard implementation has reduced their effectiveness in ensuring a minimum level of living for the poorer section. Therefore, there is a need for strengthening and overhauling their administrative set-up, particularly in regard to delivery of benefits to the target groups.

Notes and References

1. Guhathakurta, S.N. (1983), † Poverty, Unemployment and Development Policy in North-Eastern Region: A case study with reference to ten villages in East and West Khasi Hills Districts of Meghalaya", mimeo, Department of Economics, NEHU, Shillong, p.5

A P P E N D I C E S

APPENDIX - ASome Features Relating to Wage Rates.

In chapter 5 we have seen that a large proportion of households, particularly in Group-B Hamlets, have no or insignificant access to land resource. For such households, besides duration of employment and the number of earners in the household, wage-rate is the most important factor determining their income level. Therefore, in the present appendix we attempt to bring out the important features relating to wage rates in the area under study.

- i. Methods of Wage-payment: Broadly speaking, two systems of wage-payment are available in the area, viz., time rate and piece rate. In the former method, payment is made irrespective of quantity or quality of work according to rate per unit of time, while the latter method, unlike the former, is based on productivity which is usually determined according to pieces or units of production irrespective of time involved.¹

Our field investigation shows that except activities which are performed during winter season where most of these are being paid on piece rate basis, wages in almost all activities are being paid on a time rate basis. For instance, all types of agricultural operations including activities in plantations and orchards (excepting plucking of oranges and arrecanuts) and in all manual works in limestone quarries, payment is made

on time rate basis. The activities under which the piece rate applies are plucking of oranges, arecanuts and transportation of crops, etc.

ii. Wage-differential by activities: Wage rates in the area differ from activity to activity (table A-1 & A-2). It differs not only between agricultural and non-agricultural activities but also between those activities which occurred for a greater part of the year and activities occurred during busy season (winter season) only. Between agricultural and non-agricultural activities, the latter command higher wages than the former. Comparing the wages paid to those activities which occurred for a greater part of the year and those which occurred during the busy season only, wages paid for the latter activities are higher than wages paid for the former activities. This is plausibly due to the shortage of labour supply during the busy season as well as the nature of activities. It may also be noted that wage labourers in Group-A Hamlets are mostly employed in non-agricultural activities while their counterparts in Group-B Hamlets are engaged mostly in agricultural activities. Further, most of activities which occurred during winter season only like plucking of arecanuts, transport, etc. are usually done mainly by households in Group-A Hamlets may be greater but of shorter duration than the same applicable to their counterparts in Group-B Hamlets.

Table.A-1 : Wage-rates in important activities that occurred for the greater part of the year, 1983.

(Rs per day per person)			
Sl. No.	Activity	Males	Females
1.	Paddy-cultivation (all types of operations)	12.00	8.00
2.	Arecanut plantations (including weeding the land)	8.00	6.00
3.	Limestone excavation ⁺	20.00	-

➤The wage rates in limestone excavation vary from worker to worker depending on the skill and experience of a person. The most common rate is Rs.20/-.

Table. A-2 : Wage-Rates in selected important activities that occurred during winter season only, 1983.

(Rs. per day per worker)

Sl. No.	Activity	Payment method	Range of wage-rates per day	
			Minimum	Maximum
* 1.	Plucking of arecanut. (for males only)	A person engaged in this activity gets Re.0.50 for every 240 numbers of arecanuts plucked.	25.00	35.00
* 2.	Transporting of Paddy by boat (for males only)	For every 1 katha or 16 kerosene tins of paddy transported, the charge is Rs.25.00	40.00	50.00
* 3.	Transporting of firewoods by boat. (for males only)	For a full load of fire-woods, the charge is Rs.20.00	20.00	30.00

Note : In addition to the above activities which are paid on piece rate basis, another important activity that usually takesplace during winter and payment is made on time rate basis is transportation of arecanuts to the market place. However, this activity is being done mostly by females and the wage-rate is reported at Rs.12.00 per day per female worker.

*All of these activities are being done mostly by the Khasis, and during winter season only.

iii. Wage-discrimination: Prior to 1983, there existed a difference in wages received between the indigenous and the non-indigenous labourers. Absence of any physical asset generating income and employment opportunities among the non-indigenous population seems to be the main reason that forced them to work at a wage rate which was below the wage rate received by their counterparts in Group-A Hamlets. However, the expansion of non-agricultural activities (like limestone excavations, lime making, trade, etc.) and the availability of employment opportunities outside the villages resulted in the shortage of wage labourers in Group-A Hamlets (due to the shift of workers from wage activities to self employment activities). This has recently improved the bargaining power of the non-indigenous labour with the result that from 1983 onwards, the wage-discrimination between the indigenous and the non-indigenous labourers almost came to an end. Another feature relating to wage rates is wage differential between male and female workers. This differential have been in practice from time immemorial and is considered as socially and customarily accepted. They are based on a number of different assumptions about female productivity.²

Summing up, wages are paid either on a time rate or piece rate basis. Excepting those activities which occurred during winter season only where most of these are paid on a piece rate basis, all activities are paid on a time rate basis. Comparing the wage rates paid to different activities, activities occurring during winter season only command a relatively higher wage rates than those activities which occurred for a greater part of the year. Between agricultural and non-agricultural activities, wages paid to the latter activities command a relatively higher wages than the former activities. At present no wage discrimination existed between the indigenous and the non-indigenous labourers. However, discrimination between the two sexes is socially and customarily accepted.

Notes and references

1. For details on the two methods, see Guhathakurta, S.N. (1980), 'Contract Labour in Construction Industry: An Empirical Study with reference to Tripura', Firma KLM Private Ltd., Calcutta, pp.70 - 80.
2. Wage differential by sex is a universal phenomenon. Several studies have dealt with this issue in details. For instance, see Wootton, B(1954), "Social Foundations of Wage Policy", Allen and Unwin; Robertson, D.J.(1961), "The Economics of Wages", Macmillan; Guhathakurta, S.N.(1980), op cit. and Mencher, J.P. and Saradmoni, K(1982), "Muddy Feet, Dirty Hands : Rice Production and Female Agricultural Labour", Economic and Political Weekly, No.52, pp.A-149 - 167.

APPENDIX- BA Note on Programmes Concerning the Poor

Several programmes concerning the poor have been introduced in the country since the early fifties. In this appendix we propose to examine briefly the important existing programmes which have significant relevance in the context of improving productivity and providing higher income for the poor in the state of Meghalaya.

- (i) Minimum Needs Programmes(MNP): The MNP, introduced during the Fifth Five Year Plan, aimed at providing free or subsidised services through public agencies so as to improve the consumption of those living below the poverty line. The programme covers eight items: elementary education, rural health, rural water supply, rural roads, rural electrification, housing assistance to rural landless labourers, environmental improvement of urban slum and nutrition for children.¹

The physical targets and achievements under the MNP programmes in Meghalaya are briefly given below:

Elementary education: During the sixth plan period (1980 - 85), the total enrolment of students was about 2.15 lakhs in the age-group 6 - 11 years with a coverage of about 62 per cent of the age-group, and 0.45 lakhs of the age-group 11 - 14 years with a coverage of about 49 per cent of the age-group.

The target for the seventh plan period is to achieve 100 per cent enrolment for both the age groups. This would entail enrolment of additional 0.95 lakhs children in the age group 6 - 11 years and 0.68 lakhs in the age group 11 - 14 years. The additional enrolment will require opening of 205 new schools and expansion 250 existing schools.

Rural health: During the sixth plan period, 10 additional Public Health Centres (PHCs) and 124 Primary Health Sub-Centres have been set up in the state, raising the total number of PHC and Sub-Centres to 32 and 217 respectively. During the seventh plan period, 10 additional PHCs and 100 Sub-Centres are proposed to be set up in the state, thus raising the number of PHCs to 42 and the Sub-Centre to 317. It is also proposed to upgrade 20 dispensaries to Primary Health Centres.

Rural water supply: Of the 4902 villages in the state, 3306 villages are problem villages with regard to drinking water supply. During the end of the sixth plan, the total number of villages covered (including non-problem villages) is 1470. This is proposed to be increased by 4006 by the end of the seventh plan period, thus covering about 81.7 per cent of the total villages in the state.

Rural roads: All villages in the state with a population between 1000 - 4999 have been connected by all weather roads. Of the remaining 4842 villages with a population of less than 1000, it was targeted to connect 1974 villages by the end of the sixth plan. The seventh plan's target is to connect an additional 67 villages with roads.

Rural electrification: Out of 4902 villages in the state, the number of villages electrified by the end of the sixth plan was 1294. During the seventh plan period, it is proposed to electrify an additional 1500 villages. Thus by the end of 1990, it is expected that about 57 per cent of villages in the state will be provided with electricity.

Rural housing : This scheme was not included in the state's MNP for the sixth plan period. For the seventh quinquennium, an amount of Rs 15 lakhs has been proposed for assisting 1000 families with materials for construction of houses.

Nutrition: The special nutrition programme is being implemented in both rural and urban areas of the state. Under this programme, 48,400 children and 8200 mothers are said to have been covered during the sixth plan period. During the seventh plan period, the expected coverage is 85,300 children and 13,100 mothers. The mid-day meal programme is also said to have been implemented in the state on a limited scale. Under this programme, 22,000 children have been covered during the sixth plan period. It is expected to cover 30,000 children during the seventh plan period.

(ii) Integrated Rural Development Programme (IRDP) : The IRDP which is introduced in 1978-79 in 2300 blocks, extended to another 300 blocks in 1979-80 and then to all the blocks in the country in October 1980. The main aim of the IRDP is to raise the level of living of the poorest families in the rural areas above the poverty line on

a lasting basis by giving them income generating assets and access to credit and other inputs. The target groups include small and marginal farmers, agricultural and non-agricultural labourers, rural artisans and craftsmen, scheduled castes and scheduled tribes and virtually all families of about 5 persons with an annual income level of below Rs 3500. The thrust of the programme is on raising incomes and generating employment opportunities through schemes pertaining to agriculture and ancillary activities, cottage and small scale industries as well as any other viable forms of economic activities, suiting the target group of families. As bulk of rural poor are landless suitable types of activities in the secondary and tertiary sectors have also been included to benefit this group of target families. Support to these families in the form of supply of raw materials, marketing facilities, training and upgradation of skills has also been emphasised in the programme.³

During the sixth plan period, it was expected to cover, on an average, 3000 families in each block in the country. Of these, nearly 2000 could, on an average, be covered by schemes in agriculture and allied activities, 500 in village and cottage industries and the remaining 500 in service sector. To achieve this target,

an amount of Rs 35 lakhs has been sanctioned for each block during the five plan period.⁴

The achievement of the IRDP programme in Meghalaya is far from satisfactory. The anticipated number of beneficiaries during the sixth plan period is about 16,000 (that is, about 530 against a target of 3000 families per block) only. The shortfall in achieving the target is due mainly to the fact that the infrastructure for implementation of the programme was inadequate in the initial stages and needed substantial improvement. Steps have since been undertaken to overcome the various impediments and the performance is hoped to be improved during the seventh plan period. During the seventh plan period, the expected number of beneficiaries will be about 43,000 families.⁵

(iii) The National Rural Employment Programme (NREP): This programme ^{which} came into operation in October 1980 intends to provide supplementary employment opportunities to the rural poor, particularly during the lean periods, in a manner which will at the same time contribute directly to the creation of durable assets for the community.⁶ The wage paid under the programme should be on par with

the minimum agricultural wage prescribed for the area. The wage is paid partly in cash and partly in kind (foodgrain). The quantum of foodgrains as part of the wage should be adequate for family need.⁷

The NREP programme in the state of Meghalaya was introduced in the year 1981-82. By the end of the sixth plan, employment generated by this programme was expected to be about 5.17 lakh man-days. During the seventh plan period, it is expected to create about 40 lakh man-days of employment in the state.⁸

In addition to the above programmes, there are also other programmes which either directly or indirectly aim at alleviating poverty in the country. For example, the TRYSEM, the scheme of training for youth for self-employment which is operated as part of the IRDP for the benefit of the identified households; the Rural Landless Employment Guarantee Programme (RLEGP) launched on 15th August 1983, which aims at improving and expansion of employment opportunities for rural landless by providing employment for at least one member of every landless labour households up to 100 days in a year, and to create durable assets for strengthening rural infrastructure

which will lead to rapid growth of rural economy; the Special Area Programme, which is meant for accelerated development of certain identified special areas in the state. It may be noted that during the sixth plan period, an outlay of Rs 10 crores has been allotted for the border areas of Meghalaya under special area programme.⁹

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Notes and References

1. India, Govt. of (1981), "Sixth Five Year Plan, 1980-85", Planning Commission, p.222
2. Meghalaya, Govt. of (1984), "Seventh Five Year Plan, 1985-90", Vol. I, Planning Department, pp.32-34
3. India, Govt. of (1985), "Evaluation Report on Integrated Rural Development Programme", Planning Commission, p.2
4. Ibid.
5. Meghalaya, Govt. of (1984), "Seventh Five Year Plan", op cit., p.34

6. India, Govt. of (1981), "Sixth Five Year Plan",
op cit., p.173
7. Ibid. p.174
8. Meghalaya, Govt. of (1984), "Seventh Five Year Plan",
op cit., p.34
9. India, Govt. of (1981), "Sixth Five Year Plan",
op cit., p.182

APPENDIX -C

QUESTIONNAIRE

General Particulars

- i) Name of the hamlet:
 - ii) Household Number :
 - iii) Name of the head
of the household :
-

2. Occupational data.

Sl. No.	Name of the working member in the household.	Sex	Age	Industrial activity *	Activity status ⁺
1	2	3	4	5	6

* as per census classification, viz., cultivators, agricultural labourers, etc.

+ whether the worker is self-employed (in agriculture and non-agriculture), wage-employed, etc.

3: Employment data - Time disposition during the reference week.

Name of a worker, sex, age, etc.	Intensity of activity(hours) by day							Total hours during the week.
	7th	6th	5th	4th	3rd	2nd	1st	
Name: Sex: Age: Usual activity:								
Name: Sex: Age: Usual activity:								
Name: Sex: Age: Usual activity:								
Name: Sex: Age: Usual activity:								
Total for the household:								

4a : Assets Particulars.

Sl.No.	Name of the Asset owned.	Ownership (Yes/No)	Value at current market prices(Rs)
1.	Land		
2.	Limestone quarries		
3.	Building		
4.	Livestocks		
	a)		
	b)		
	c)		
	d)		
	e)		
5.	Other durables		
	a)		
	b)		
	c)		
	d)		
	e)		

4b: Land Asset Particulars.

Type of land	Ownership		Leased-in		Leased-out	
	Sl. No.	Area (in bigha) -as.	Sl. No.	Area (in bigha)	Sl. No.	Area (in bigha)
1	2	3	4	5	6	7
I. Non-Paddy lands						
Total (I)						
II. Paddy-lands						
Total (II)						
(I + II)						

5. Household Income during the last 365 days preceeding the date of survey.

Sl.No.	Sources of Income	Amount received(Rs)
1.	Self-employment in agriculture.	
2.	Agricultural wage income.	
3.	Non-agricultural wage income.	
4.	Trade & commerce	
5.	Rental income.	
6.	Others.	
Total		

* After deducting the expenses incurred on hired labour, etc.

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