CHAPTER 4: METHODOLOGY

4.0.0 The chapter on methodology deals with the procedures and methods to answer the questions raised in the context of tribal economy of Himachal Pradesh. It proposes to deal with the following aspects:

[2] Formulation of hypothesis and parameters used.
[5] Selection of Base Year (1950-1951) for studying ‘change’.
[6] Selection of Reference Year 1990-91 for field study vis-à-vis frequency of visits to the field.
[7] Village schedule vis-à-vis household schedule for collecting secondary and primary data.

4.1.0 RATIONALE FOR MICRO-LEVEL VILLAGE STUDY

Methodologically speaking, area-specific village studies at the grass-root level are bound to give a more comprehensive picture of the working of a tribal economy. In fact, a well planned programme of rural development must be preceded by an intimate knowledge and understanding of local conditions, needs and production possibilities. The importance of a village level study is apparent from the fact that a ‘village’

Still continues to be the basic unit of socio-economic structure in rural India. So far, the emphasis in India has been to generate aggregative studies at the higher geographical levels, to the utter exclusion of constituent lower units. This lack of concern for lower geographical units blurred our perception of what has really been happening at the lowest rung, notwithstanding the recent works of Basu(1985) and Ranveer Swarup (1988).
That is why the central concern of this study is to understand the working of a village economy as well as to understand the pattern and process of ‘change’ in a particular tribal set-up. It is equally important to know as to how the tribals perceive and adopt this charge, coming through outside contact and intervention of the Government.

4.2.0 FORMULATION OF HYPOTHESIS AND PARAMETERS USED

Given the increasing ‘inter-dependence’ and ‘contact’ with the wider national economy, this study is designed to study whether the tribal groups are still leading a custom-governed corporate existence or have tended to break away from the traditional mores under the newly generated forces of competition and profit. This village study would also probe into the nature and process of change i.e., whether the ‘change’ has originated from within (endogenous) or has resulted under the forces of external factors (exogenous).

This study is also designed to ascertain whether the ‘change’ is confined only to the periphery of the tribal economy, or has percolated down to the interior core/hinterland of the tribal economy. It is premised that the study of a single tribal village may provide a base-line link between the ‘little tradition’ (as evidenced in the case of a village which is fully exposed to the multitudinous forces of modernization) and the ‘Great tradition’ (as evidenced in the case of a remotely located village where the socio-economic set-up is still largely governed by ‘custom’).²

4.2.1 FORMULATION OF HYPOTHESIS¹

The data collected during field study was subjected to statistical treatment primarily to test the following hypothesis:

[1] The tribal economy of Himachal Pradesh is essentially characterized by low equilibrium, self-sufficient and subsistence type of economy and has not undergone any perceptible transition from a rural and local economy. In other words, it has not yet given way to an inter-dependent type of economic system.
[2] Development programmes determined at macro-level have not proved effective in making the benefits of development available to the lowest strata of the tribal society.

[3] The tribal problems are area-specific; therefore, require regional approach for diagnostic purposes and policy formulation.

4.2.2 PARAMETERS USED FOR TESTING HYPOTHESIS

The foregoing paragraphs reveal that there is a wide variety of variables, the final selection whereof depends upon the nature of study one undertakes. After having taken cognizance of the variables influencing the village economy in question, the following indicators were primarily relied upon:

1. Land holding size-wise distribution of ownership and operational holdings, land-use pattern, cropping profile, sources of irrigation, water, electricity, etc.
2. Occupational structure of the village economy and sector-wise income-consumption pattern.
3. Average size of an operational holding as well as cultivable area, agricultural technology, demographic pressure on land, cropping and irrigation intensity, productivity of land, etc.
4. The behavior of labour market, land market, and credit market.
5. Extent of casual labour/hired labour in the village or nearby urban markets.
6. Extent of literacy and exposure to modern education
7. Proximity to urban area/centre.

The study of these parameters will help us in the identification of predominant mode of production and draw inferences about the nature and process of 'observed change', i.e.

1. Whether the 'change' is an individual/isolated phenomenon or a group phenomenon.
2. Whether the 'change' is attributable to certain locational advantages or critical inputs made available to them by the Government or otherwise.
4.3.0 OBJECTIVES OF THE STUDY

The present empirical study has been undertaken in district Kinnaur with a view to achieve the following objectives:

i. To evaluate the development of district Kinnaur since 1950-51 in general and for the Reference Year 1990-91 in particular vis-a-vis the impact of development activities on the socio-economic conditions of the tribal people;

ii. To analyse the region-wise impact of road accessibility on the villages and the households vis-à-vis on the levels of their development;

iii. To discuss the sectoral development profile of the sampled villages;

iv. To ascertain the views of the beneficiary households on the effectiveness of the various Integrated Rural Development Programme (IRDP), by holding focal discussions, and.

v. To pinpoint the areas and sections of the tribe which have lagged behind and to suggest policy measures for augmenting income of the people.

4.4.0 SAMPLING DESIGN

A sampling design centres around two aspects viz: (i) specification, and (ii) estimation.

i. Specification deals firstly with the problem of applying different types of sampling techniques, such as random or purposive sampling, with or without stratification, or in one or more stages; and secondly, the practical task of defining and fixing the size of sampling units.

ii. The 'Estimation', on the other hand, deals with estimating the results of field study. It entails, first, tabulating the data and computation of various statistical averages; and, secondly, estimating the various types of sampling and non-sampling error.

In brief, a ‘sampling design’ is a definite plan for obtaining a sample from a given population which eventually boils down to collection, tabulation, and analysis of data.
An ideal Sampling Design is amenable to the following sub-divisions:-

i. Determination and location of sampling units.

ii. Determination of the size of sample.

iii. Determination of Reference Year of study as well as frequency of visits to the field.

iv. Framing of schedules and questionnaires.

v. Survey work in the field and collection of data.

vi. Statistical tool-kit for analysis of data.

For the present study, it was decided to adopt a four-stage stratified purposive-cum-random sampling technique. The procedure may be described as follows:-

i. Purposive selection of ITDP Kinnaur (coinciding with district Kinnaur) constituted the first stage;

ii. Stratification of all the tehsils/sub-tehsils of district Kinnaur into a single Composite Development Index and thereafter selection of two tehsils constituted the second stage;

iii. Purposive selection of three villages from amongst the selected tehsils constituted the third stage of sampling; and

iv. Random selection of 150 households, 50 from each sample village, constituted the fourth and the last stage of sampling. Households were selected on landholding size-wise and caste-wise basis.

4.4.1 RATIONALE FOR PURPOSIVE SELECTION OF DISTRICT KINNAUR: LOCALE OF STUDY

Out of all the Scheduled Areas, district Kinnaur or Integrated Tribal Development Project (ITDP Kinnaur) was purposely selected for empirical investigation, due to the following reasons:

i. The all-India conference of Anthropologists, held in May 1972, formulated a plan of action in which Kinnaur and Lahaul-Spiti were classed among the unsearched areas. The plan further observed: ‘It is indeed deplorable that we have very scanty information about some of the sensitive areas of the country’
T.S. Negi also observed in the same context that "Himachal Pradesh, as a whole, may well be treated as 'unsearched area' because the work done so far on Scheduled Tribes is scanty, sporadic and sketchy. (cf. T.S. Negi, Scheduled Tribes of Himachal Pradesh: A Profile, Shimla, p.3).

ii. It alone accounted for the highest proportion of Scheduled Tribe population among all the Scheduled Areas of Himachal Pradesh i.e. 38 percent during 1990-91. Ethnologically also, the ITDP Kinnaur accounted for the largest number of tribal population under the nomenclature 'Kinnaura' or 'Kannaura'.

iii. Kinnaur district is the rightful representative, not only of the largest but also one of the oldest tribes of Himachal Pradesh. Comparatively speaking, the tribes of Lahaul and Spiti came over to Himachal Pradesh from Punjab only after the re-organisation of the State on Nov. 1, 1966.

iv. In terms of road-connectivity also, this district gets precedence over all other tribal areas. As per District Gazetteer Kinnaur, the first jeep arrived in Kalpa in 1959, followed by quick road building activity in the sixties in the wake of the Chinese aggression in 1962. On the other hand, the district of Lahaul and Spiti was connected with road in 1973.

v. This district had all the reasons to excite the curiosity of a researcher as it lay along the old Hindustan-Tibet road (NH-22), sharing common international borders with Tibet (China). The strategic considerations in the wake of Sino-India conflict in Oct 1962 led the Government to re-align this road (now NH-22), thereby exposing a string of villages to the forces of change.

vi. In addition to road-building activity playing the role of a leading sector, this district was also subjected to maximum exposure, due to its rich potential for cash crops (e.g. apple, almond, 'CHILGOZA', off-season vegetables, etc). Since these cash crops had a ready market outside Kinnaur, therefore, the disposal of these crops to a wider economy and consequent inflow of cash quickly monetised the barter economy and thereby provided further impetus for 'change'.

vii. Soon after the Sino-India conflict in Oct 1962, the Government of
India suddenly woke up to the challenge and started taking active interest in the economic affairs of these people who are residing in border-cum-tribal areas of the Pradesh. Speaking chronologically, the introduction of Community Development Programme (enforced from Oct 2, 1952), followed by Panchayat Raj Act (1953), the quick road-building activity since sixties, the Tribal Sub-plan (introduced since 1974-75), the reorganisation of the State in 1966 --- all these measures combined to set in a leaven for 'change' in the tribal areas. Earlier these areas were more or less a closed economy, except for a brief tangential interaction with the outside economy provided by the annual Lavi Fair.\textsuperscript{13}

Since this field-study\textsuperscript{14} was designed to study the process of change in a geographically contiguous area inhabiting a single tribe and sharing a common history and social set-up, therefore district Kinnaur eminently suited for the purpose on account of the foregoing reasons.

\subsection*{4.4.2 SECOND STAGE: SELECTION OF TEHSILS}

After purposive selection of district Kinnaur, the second stage pertained to the selection of tehsils\textsuperscript{15} on the basis of Composite Development-Index. In view of the complexity of the problem, a search had to be made for a set of indicators or a Composite Development Index, which, from the operational point of view, could be used for evaluation of development performance. Accordingly, all the tehsils/sub-tehsils of district Kinnaur were expressed in terms of various development indicators, which were subsequently reduced into a Composite Development Index. A Development Indicator is a statistical construct per unit, expressed as a proportion/ratio/or percentage to the total.

\subsection*{4.4.3 COMPUTATION OF COMPOSITE DEVELOPMENT INDEX\textsuperscript{16}}

The standardized value of composite indicators was computed by following a well-known formula:
$Z_{ij} = \frac{x_{ij} - \bar{x}_{ij}}{S_{ij}}$, where

$x_{ij}$ = the value of the $i$th indicator in the $j$th region,

$\bar{x}_{ij}$ = the mean value of the $i$th indicator of the $j$th region,

$S_{ij}$ = the Standard Deviation of the $i$th indicator of the $j$th region

$Z_{ij}$ = the Standardized Value of various indicators for the $j$th region.

On the basis of Standardized Value of indicators, a row-wise distance-matrix was prepared. For computation of Composite Development Index, the $Z_{oj}$ value was selected for each tehsil region. This $Z_{oj}$ represents the highest value of $Z$-score of a row. Then the Composite Development Index was obtained by using the following formula:

$$C_{jo} = \sqrt{\frac{\sum (Z_{ij} - Z_{oj})^2}{\Sigma}}$$

Where

$\Sigma$ denotes aggregation of $j$th region from 1 to $n$

$C_{jo}$ = the Composite Development Index for the $j$th region/tehsil

$Z_{ij}$ = the Standardized Value of various indicators for the $j$th region.

$Z_{oj}$ = the highest or the best standardized value for the $j$th region.

On the basis of Composite Development Index listed in Table 4.1, two tehsils of district Kinnaur, namely tehsil Sangla and tehsil Moorang were selected for further sampling of villages for empirical study.
### TABLE 4.1: TEHSILS/SUB TEHSILS OF DISTRICT KINNAUR
ARRANGED IN DESCENDING ORDER (IN TERMS OF COMPOSITE DEVELOPMENT INDEX)

<table>
<thead>
<tr>
<th>S.NO</th>
<th>NAME OF TEHSIL/SUB-TEHSIL OF ITDP KINNAUR</th>
<th>COMPOSITE DEVELOPMENT INDEX</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
</tr>
<tr>
<td>1.</td>
<td>KALPA (CDB KAPLA)</td>
<td>0.2473</td>
</tr>
<tr>
<td>2.</td>
<td>HANGRANG (CDB POOH)</td>
<td>0.2285</td>
</tr>
<tr>
<td>3.</td>
<td>MOORANG (CDB POOH)</td>
<td>0.2028 INTERMEDIATE ZONE</td>
</tr>
<tr>
<td>4.</td>
<td>SANGLA (CDB KALPA)</td>
<td>0.2027</td>
</tr>
<tr>
<td>5.</td>
<td>POOH (CDB POOH)</td>
<td>0.1852</td>
</tr>
<tr>
<td>6.</td>
<td>NICCHAR (CDB NICCHAR)</td>
<td>0.1432</td>
</tr>
</tbody>
</table>

CDB: Community Development Block

**Note:**
(i) Index was computed on the basis of secondary data for the year 1990-91. Since any selection of tehsils was open to question on the basis of a priori weights, hence selection was based on composite development index.

(ii) In addition to the use of Composite Development Index, ranking method was also applied for selections of tehsils.

#### 4.4.4 SELECTION OF TEHSILS

On the basis of comparative study of Composite Development Index, two contiguous tehsils from the Intermediate Zone were selected, namely,
4.4.5 THIRD STAGE VIS-A-VIS PURPOSIVE SELECTION OF VILLAGES

After the selection of two tehsils, the villages in each tehsil were stratified into three tiers on the basis of accessibility criterion i.e., in terms of distance of the sampled villages from the road-head. A sample of three villages was taken, treating the road-side village as the focal-point of growth-dynamics. Situation of a village near the road per se is a strong enough point for spread-effects or external economics. A road-side location induces so many other general facilities, thereby affecting the cost-structure of a village economy. The stratification of villages was done on the following basis:

i. The first stratum of villages was selected from within a distance of 1-5 kms from the growth-point.
ii. The second stratum of villages was selected from within a distance of 5-10 kms from the growth-point.
iii. The third stratum of villages was selected from within a distance of 10-15 kms from the growth-point.

Accordingly, keeping in mind the hypothesis to be tested, a set of three villages were considered for intensive empirical study.

4.4.6 RATIONALE FOR SELECTING ‘ASRANG’ AS A SAMPLED VILLAGE

A set of villages were selected for each stratum. Since the focus of our study was to study the extent of departure/transition from a 'closed economy', therefore 'Asrang' village was purposely selected as a microcosm of such a closed-economy. This village was at a distance of about 15 kms from NH-22 and the entire approach to the village from Lippa onwards was 'kacha'(unpaved) and hardly resembled a bridle-path. The selection of this village was motivated by two reasons:
i. Such villages as Asrang, which have very few transactions with the outside world, are greater in number in the tribal economy of Himachal Pradesh. Asrang was also identified as one of the villages inhabiting a 'Primitive Tribal Group' (cf. Evaluation of ITDP Kinnaur, 1990-91, HPU: 26).

ii. It is only when we start our investigation from such a village that we can appreciate the nature of transition which is taking place from a 'closed economy' to an 'open-economy'.

4.4.7 RATIONALE FOR SELECTION OF VILLAGE SANGLA

Similarly, a set of villages were considered to represent the most developed stratum and obviously the choice fell on Sangla for the following reasons:

i. Sangla is one of the largest villages of district Kinnaur, with a tribal

ii. Population of around 2500 persons.

iii. Although Sangla does not directly fall on NH-22 and is about 20kms away from 'Karchham' village on NH-22, yet it is one of those villages which were connected with the road facility in the earliest stages of the construction of NH-22.

iv. Sangla village, in fact, lies around an urban market and has enjoyed the benefits of infrastructural facilities for a long time since early sixties.

v. Cash crops in the case of Sangla village are apple, 'kala zeera'(black cumin), etc.

4.4.8 RATIONALE FOR SELECTING 'LIPPA' AS THE INTERMEDIATE VILLAGE

After having finalised the selection of 'a village with little tradition' (i.e., Sangla) and a 'hinterland village with a great tradition' i.e., Asrang, 'LIPPA' was selected as an intermediate village between the two extremities, owing to the following reasons:

(i) Village LIPPA is at a distance of 7-8 kms from the almond-rich 'Spillo' which is also the headquarters of Block Development Officer (BDO) and where most of the extension facilities are concentrated.
(ii) Village Lippa was connected with semi-pucca road in 1987-88. Only one bus-service operates between Lippa and the present district headquarters ‘REKONG PEO’. A unit of State Bank of India had started functioning in Lippa during Sept-Oct 1991, during the course of this field study.

(iii) This village surely serves as a prototype of those villages which are in a state of transition or, in other words, the model of a village which is tending to break away gradually from a state of self-sufficiency to a state of inter-dependence either due to:

(iv) The opening up of transport and communication facilities, or

(v) Due to specializing in some cash crops (as for example ‘almond’ in case of Lippa and ‘apple’ in case of village Sangla).

Selection of villages is depicted hereunder with the help of a Flow-Chart (Figure 4.1).

**FIGURE 4.1**

**FLOW CHART: SELECTION OF VILLAGES**

**DISTRICT-CUM-ITDP KINNAUR**

LOWER KINNAUR  
Sub-division-cum-CDB  
NICHAR  
Tehsil: NICHAR  

MIDDLE KINNAUR  
Sub-division-cum-CDB  
KALPA  

UPPER KINNAUR  
Sub-division-cum-CDB  
POOH  

(1) Tehsil  (2) Tehsil  (I) Tehsil  (II) Tehsil  (III) Sub-teshil
Kbalpa  Sangla  Moorang  Pooh  Hangran

(i) Village Sangla  (i) Asrang  (ii) Lippa

CDB: Community Development Block
ITDP: Integrated Tribal Development Project
(it coincides with district Kinnaur)
4.4.9 FOURTH STAGE: SELECTION OF HOUSEHOLDS

Selection of operational holders/households\textsuperscript{15} constituted the ultimate and the last unit in our sampling design. Although, in a village study, it is good to investigate into the working of all the households, yet, in view of the time-constraint and finances, it was decided to select 50 households randomly from each sampled village. Having fixed the boundary of the sample village with the help of village Patwari (village functionary who maintains revenue records) as well as boundary survey number, the field work was started from one end, preferably from the north-west corner of the village, and all the randomly selected operational households were interviewed. All the operational households in the village were listed, social class-wise as well as land holding size-wise.

The pre-determined 50 households were then allocated to each size-class, in proportion to their numerical weight in the total households.

In each selected village, all the operational households were listed in the following five land-holding size-classes, in conformity with the pattern followed by All India quinquennial Agricultural Census 1980-81, p.8.

(i) Those operating land upto 0-1 ha. were designated as marginal farmers.
(ii) Those falling between1-2 ha. size-class were designated as small farmers.
(iii) Those operating holdings between 2-4 ha were treated as semi-medium farmers.
(iv) Those operating holdings between4-10 ha. were termed as medium farmers; and.
(v) Last of all, those having holdings '10 ha. or above' were categorized as large farmers.

After listing all the operational holders, the respondents were selected randomly for intensive empirical study. The allocation of households is depicted in the ascending order as per following Table 4.2.
NOTE

The pattern of selecting size-wise operational holders proved useful as the motivations and decision-makings of relatively small sized farmers (e.g. marginal and small farmers) are bound to be different from medium, semi-medium and large-sized farmers. In fact, five land-holding size-classes denote five heterogeneous decision-makers.

### TABLE 4.2: VILLAGE-WISE DISTRIBUTION OF TOTAL HOUSEHOLDS AND SAMPLED HOUSEHOLDS

<table>
<thead>
<tr>
<th>No</th>
<th>Land Holding Size-class</th>
<th>VILLAGE: ASRANG</th>
<th>VILLAGE: LIPPA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>TOTAL HOUSEHOLDS</td>
<td>SELECTED HOUSEHOLDS</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IN THE VILLAGE</td>
<td>IN THE VILLAGE</td>
</tr>
<tr>
<td>(i)</td>
<td>Land Holding Size-class</td>
<td>SC</td>
<td>ST</td>
</tr>
<tr>
<td>(1)</td>
<td>(II)</td>
<td>(1)</td>
<td>(2)</td>
</tr>
<tr>
<td>1.</td>
<td>MARGINAL (0 to 1 ha.)</td>
<td>06</td>
<td>11</td>
</tr>
<tr>
<td>2.</td>
<td>SMALL (1 to 2 ha.)</td>
<td>-</td>
<td>15</td>
</tr>
<tr>
<td>3.</td>
<td>SEMI-MEDIUM (2 to 4 ha.)</td>
<td>-</td>
<td>21</td>
</tr>
<tr>
<td>4.</td>
<td>MEDIUM (4 to 10 ha.)</td>
<td>-</td>
<td>08</td>
</tr>
<tr>
<td>5.</td>
<td>LARGE (10 ha. and above)</td>
<td>-</td>
<td>01</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>06</td>
<td>56</td>
</tr>
</tbody>
</table>

ST: SCHEDULED TRIBES
SC: SCHEDULED CASTES

TABLE 4.2 CONTINUED........
<table>
<thead>
<tr>
<th>S.NO.</th>
<th>Land Holding Size-class</th>
<th>VILLAGE: SANGLA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>TOTAL HOUSEHOLDS IN THE VILLAGE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SC</td>
</tr>
<tr>
<td>(I)</td>
<td>(II)</td>
<td>(1)</td>
</tr>
<tr>
<td>1.</td>
<td>MARGINAL (0 to 1 ha.)</td>
<td>127</td>
</tr>
<tr>
<td>2.</td>
<td>SMALL (1 to 2 ha.)</td>
<td>34</td>
</tr>
<tr>
<td>3.</td>
<td>SEMI-MEDIUM (2 to 4 ha.)</td>
<td>17</td>
</tr>
<tr>
<td>4.</td>
<td>MEDIUM (4 to 10 ha.)</td>
<td>01</td>
</tr>
<tr>
<td>5.</td>
<td>LARGE (10 ha. and above)</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>TOTAL</td>
<td>179</td>
</tr>
</tbody>
</table>

### 4.5.0 SELECTION OF BASE YEAR 1950-51 FOR STUDYING ‘CHANGE’

The year 1950-51 was purposely selected as the benchmark year for studying 'continuity' and 'change' in the tribal areas of Himachal Pradesh. The year was selected, keeping in mind that it was only after the introduction of the First Five Year Plan (enforced with effect from April 1, 1951) that the administration took upon itself the role of gradually integrating these tribal areas into the mainstream, as a result of
which a steady wind of change started blowing over these areas. Even the year 1974-75, the year of introduction of Tribal Sub-plan in Himachal Pradesh, was seriously considered but the thought had to be abandoned in view of the fact that a time span of 15 years (1974-75 to 1990-91) would be too short a period to yield a vivid picture of 'change'. Since an economic change is always a planned change, induced in an economic system in a time-frame of 40-50 years, it is, therefore, a long-term concept and hence the choice fell on 1950-51 as the Base Year for this study, notwithstanding the data constraints. This year had the potential to give some picture of 'CHANGE' whatever it might be.

Another consideration that impelled us to opt for 1950-51 was that though the tribal areas were exposed to a wider economy even earlier, yet upto 1951 there was no direct intervention of the Government on the economic scene. Earlier, the administration was more or less confined to two major functions only viz; (1) maintenance of law and order; and (2) collection of land revenue.

In fact, it was only in the wake of introduction of the First Five Year Plan (1951-56) that an attempt was made to usher in the tribal areas an 'induced change' i.e., by deliberately altering the institutional set-up to affect the desired change.

An 'Economic Change' is sought to be studied from two standpoints:

1. A synoptic picture of the general back-drop that generated 'change' since 1950-51.

2. Given this back-drop, the extent of ingress of the 'change' to the core of the tribal economy.

4.6.0 SELECTING 1990-91 AS THE YEAR OF REFERENCE FOR FIELD STUDY

Since the objective of this study was to investigate the extent of economic change in three differently located village formations over a single reference year 1990-91, it was, therefore decided to use the data for the agricultural year 1990-91(i.e. from 01 July 1990 to 30 June 1991). Since, due to varying agro-climatic conditions, the actual harvesting operations in the area of field study are usually staggered a little
later than the conclusion of the reference year (e.g., upto mid Sep. in the case of late-
variety apple crop of district Kinnaur), the actual field work was, therefore,
commenced only after mid-August 1991). It was done to ensure that the information
being supplied by the respondents was valid and did not suffer from any severe

First of all, village Lippa was undertaken for survey in Aug 1991, followed by
Sangla was deliberately taken up last of all as this is a major apple-growing area and
the picture regarding disposal of apple produce could emerge only after Sep. 1991.

4.6.1 TIMING AND FREQUENCY OF VISITS

Since, at the time of this survey, the farmers were heavily occupied with
harvesting operations, the respondents had to be contacted either in the morning
(before 7 am) or after sun-set. But, in most of the cases, they were contacted during
morning hours, and it was only in some cases that they had to be contacted at the
field-sites or at the places of their work.

The field-work was completed in two rounds in two successive years i.e. in
1991 and 1992. Although the relevant data were collected during 1991 itself, yet it
was considered advisable to undertake another additional round in the year 1992 in
order to ensure that nothing important was omitted. Besides, the information on
labour-days spent on various agricultural operations during the agricultural year 1990-
91 could be authentically collected during 1992 only.

4.7.0 COLLECTION OF SECONDARY AND PRIMARY DATA vis-
à-vis SCHEDULES

Information on a large number of items is needed for such type of studies
which is not usually available in official records, hence the present study was based
both on primary as well as secondary data. Two sets of schedules were accordingly
designed to canvass the desired data. The village-level information was collected on a
village or hamlet schedule from the patwari (village accountant), while primary data
were obtained from the sample households on the basis of pre-tested schedules. The
data were collected by survey method by visiting the households twice in two successive rounds, spread over consecutive years viz. 1991 and 1992.

4.7.1 NATURE OF PRIMARY DATA COLLECTED

In order to analyze the impact of planning on the ITDP Kinnaur, the data on the following items were collected from the sampled households during the reference year 1990-91.

(i) Age-wise and sex-wise family composition;
(ii) Availability of active work-force vis-a-vis the number of dependents;
(iii) Level of literacy;
(iv) Asset-structure (productive and non-productive assets both). Productive assets pertain to land and other agricultural wherewithal (i.e., agricultural machinery and implements, etc.).
(v) Size-wise land-holding ownership profile, tenure structure, and extent of cultivable land and irrigated land;
(vi) Cropping profile and changes in cropping profile since 1950-51, particularly since the introduction of Tribal Sub-plan (1974-75);
(vii) Sources of income from both agricultural and non-agricultural sources;
(viii) Disposal of farm-produce;
(ix) Consumption pattern;
(x) Labour-days (own human family-labour days and hired labour-days) employed by each sampled household;
(xi) Assistance utilised under various Government schemes (‘Nautor’ land and IRDP benefits) and the impact of these schemes on the levels of living;
(xii) General awareness of the farmers and any suggestions for the economic development of the village/region, by way of holding discussions;
(xiii) Availability of infrastructural facilities with respect to:-
(xiv) Housing conditions,
(xv) Availability of school, hospital, road, bank, post-office, electricity, drinking water etc; and

(xvi) Fertilizers, high-yielding varieties (by way of extension facilities), etc.

4.7.2 SECONDARY DATA

The secondary information was collected from various village institutions/ functionaries/Gram-Pradhan/‘Anganwaris’ and other institutions on all aspects which had any socio-economic bearing on village structure. The data were collected on the following aspects:-

VILLAGE PATWARI

(i) Land-use pattern.
(ii) Cropping pattern of the village during the last ten years.
(iii) Source-wise irrigated area in the village.
(iv) Village map.
(v) Area under orchards under each sampled household.
(vi) Total livestock in the village as well as flock maintained by each operational household.
(vii) ‘Wazib-ul-Arz’ (i.e. Village Administration Paper).
(viii) 'Nautor' (land granted by the government free of cost to the landless) and the year of such grant.

NOTE

Besides giving a picture of the village, this information also helped in exercising a cross-check on the information supplied by each respondent. It, therefore, always proves advantageous to collect secondary information first, before going round the village to collect primary data.

4.8.0 ANALYSIS OF DATA

The primary data was tabulated after classifying it first into homogeneous categories(on the basis of land-holding size), and then appropriate tools were applied to achieve the main objective of studying 'transition' of a village economy as well as
to assess the impact of various Government programmes on the sampled households. In fact, the analytical framework was divided into the following two parts viz:-

(i) Exposition of procedure for estimation of such concepts as wealth, income, gross farm income, net farm income, etc.
(ii) Exposition of mathematical and statistical tools.

4.8.1 CONCEPT OF WEALTH

Wealth constitutes a 'stock' and includes all types of income-yielding productive assets owned by the members of a household (individually or collectively). The endowment-profile for the present study included the following productive assets only:

(i) Non-reproducible tangible assets (i.e. land).
(ii) Reproducible tangible assets (agricultural implements).
(iii) Living animal wealth (draught cattle and milch cattle).

NOTE

The following were excluded from the purview of wealth for this study:

(i) Though the financial assets should have also been included to take care of interest-income of all kinds, but paucity of data acted as a constraint. Hence, financial assets were excluded.
(ii) The value of dwellings for personal use was also excluded for the purpose of enumerating productive wealth.
(iii) The non-productive assets (like household durables) also form part of household's wealth. These were also excluded for the obvious reason that these do not yield any income.

4.8.2 CONCEPT OF INCOME

'Income' implies a statistical estimation of the value of total goods and services produced over a particular period of time. By 'Production', we mean the production of valuable goods and services during a particular period. By 'Value' we mean the 'market value'. By 'a particular period of time' is usually meant an Accounting Year.
(for example, Agricultural Year 1990-91 in the case of this study i.e., beginning from July 1, 1990 to June 30, 1991).

4.8.3 COMPUTATION OF GROSS FARM INCOME

It referred to the total income of an 'operational holder' from agriculture and allied activities and was equal to the total Income from crop-farming including food crops and non-food crops both + income from horticulture sector + income from animal husbandry sector + income from forest sector, etc. It also included estimated income of by-products obtained from the farm.

Gross Farm Income was computed with the help of the following formula

\[ Y = p_1 q_1 + p_2 q_2 \]

where

\[ Y = \text{Gross Farm Income of an operational holder} \]

\[ p_1 \text{ and } p_2 \text{ denote farm harvest prices of the main-products and by-products respectively; and} \]

\[ q_1 \text{ and } q_2 \text{ denote different quantities of main farm-products and by-products respectively.} \]

NOTE ON FARM HARVEST PRICE

Farm Harvest Price represents the 'Average Wholesale Price' at which the farm-produce was sold off at the farm-site. Estimation of income at farm harvest prices obviously obviated the need to reckon with the estimation of transport and other costs of cartage, etc.

4.8.4 NET FARM INCOME

Net Farm Income of a household was obtained by deducting Cost-A from Gross Farm Income. The Cost-A, in turn, included (i) all paid-out variable costs; and (ii) depreciation allowance.

Gross Farm Income and variable costs both were computed in terms of (i) imputed component as well as (ii) monetary component. Thus, Net Farm Income=
Normal procedure of netting the costs is explained in terms of Cost-A, Cost-B, and Cost-C, as shown below:-

**COST-A**

It includes items such as:-

(i) Wages paid for hired human labour.
(ii) Hiring charges for bullocks.
(iii) Depreciation suffered by owned-bullock power during the accounting year 1990-91.
(iv) Value of seed, manure, chemical fertilizers, plant protection material, etc.
(v) Expenditure (including cess) on irrigation.
(vi) Depreciation on farm implements, livestock, etc.
(vii) Land revenue and other cess.
(viii) Any interest on working capital.

**NOTE:**

Only Cost-A was reckoned for estimating Net Farm Income for this study.

**COST-B**

It is equal to Cost A + Rental value of land + Interest on fixed capital.

**COST-C**

Cost C = COST B + Imputed value of own family labour.

Net Farm Income = Gross farm income - Cost C

Since tribal regions are largely characterized by non-market economy, it was, therefore, difficult to apply the usual tools of measurement. The following exceptions were therefore made:-
5.2.7 Dwellings And The Living Space

(I) Out of the 150 sampled households surveyed, almost all owned their houses and most of them were found in the semi-pucca condition. In fact, the dimension of poverty in the sense of farmers having no house is almost non-existent in the tribal areas.

(II) It would also be seen from the data that sampled Locations I, II and III possessed, on an average, living space of 4 rooms, 6 rooms and 3 rooms respectively, as against 4 rooms for the over-all sample. However, what is interesting to observe is the fact that unlike the distribution of productive assets, the distribution of living space/rooms is quite fair, considering that 64 percent of the marginal and small households in the over-all sampled accounted for 47 percent of the total rooms.

(III) Out of 150 households, 136 i.e., 90.6 percent of them possessed ‘KUTHARS’ or stores — invariably situated at a safe distance from the house to ward off any damage from fire-hazards. Similarly, 108 households out of 150 sampled households (72 percent) were found in the possession of cattle-sheds.

(IV) Arrangements existed for safe drinking water in each sampled village, though not piped water as laying of pipe-lines is not feasible in a hilly terrain. Source of water was available within 500 metres from the households.

As for availability of electricity, 141/150 households (93 percent) had access to power supply. The amenity of electricity is very important in the snow-bound tribal areas as, apart from lighting, it can also be used for purposes of heating and cooking.

5.2.8 CONSUMER DURABLES

Possession of consumer durables is an important dimension of quality of life, as it has an indirect effect on productivity levels. The following observations need special mention:–

(I) As many as 85 households out of a total sample of 150 households (57 percent), had either transistors/radios or stereo-sets which is indicative of their
TABLE 5.5:  LEVELS OF LIVING (LIVING SPACE, OTHER AMENITIES AND CONSUMER DURABLES)

<table>
<thead>
<tr>
<th>S. NO.</th>
<th>LOCATION</th>
<th>TOTAL ROOMS</th>
<th>POWER/ELECTRICITY</th>
<th>DOGRI/FARM HOUSE</th>
<th>CATTLE-SHEDS</th>
<th>KUTHARS</th>
<th>DISTANCE FROM SOURCE OF WATER</th>
<th>TOTAL RADIO TRANSISTOR</th>
<th>TV</th>
<th>TABLES/CHAIRS</th>
<th>WATCHES</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>II</td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
<td>(5)</td>
<td>(6)</td>
<td>(7)</td>
<td>(8)</td>
<td>(9)</td>
<td>(10)</td>
</tr>
<tr>
<td>1.</td>
<td>LOCATION-I</td>
<td>224 (4)</td>
<td>43</td>
<td>42</td>
<td>44</td>
<td>48</td>
<td>0.5 Km.</td>
<td>34</td>
<td>1</td>
<td>48</td>
<td>75</td>
</tr>
<tr>
<td>2.</td>
<td>LOCATION-II</td>
<td>285 (6)</td>
<td>50</td>
<td>34</td>
<td>38</td>
<td>45</td>
<td>0.5 Km.</td>
<td>27</td>
<td>2</td>
<td>49</td>
<td>82</td>
</tr>
<tr>
<td>3.</td>
<td>LOCATION-III</td>
<td>171(13)</td>
<td>48</td>
<td>32</td>
<td>45</td>
<td>43</td>
<td>0.5 Km.</td>
<td>24</td>
<td>16</td>
<td>155</td>
<td>64</td>
</tr>
<tr>
<td>OVER-ALL SAMPLE</td>
<td>680 (4)</td>
<td>141</td>
<td>108</td>
<td>127</td>
<td>136</td>
<td>0.5 Km.</td>
<td>85</td>
<td>19</td>
<td>252</td>
<td>221</td>
<td></td>
</tr>
</tbody>
</table>

NOTE:—

(I) Total number of households in each location are 50.

(II) Figures in parentheses col.1 denote average number of rooms per household.

(SOURCE: Self-compiled Appendix-3)

A perusal of the tabular data would reveal the following observations:
Table 5.4 reveals that the composite literacy rates (males and females both) for Location-I, Location-II and Location-III are 52.1, 54.2 and 59.1 percent respectively, as against 55.0 percent for the combined sample. It would also be seen that the literacy rate for ‘males’, in case of each location, is comparatively higher than the corresponding rate for females. The low rate of literacy among females is due to the fact that women play a special role in agricultural operations in the hills, resulting into low attendance in schools.

It can also be seen from Appendix-1 that a major chunk of the ‘literates’ is concentrated in the educational level upto 10th standard, the extent being 85.2 percent, 92.0 percent and 81.6 percent for Location-I, Location-II and Location-III respectively. And this is due to the fact that marginal and small farmers are motivated to send their wards to schools due to Govt. assistance being readily available.

It would be seen from the tabular data that the number of students in the higher education is conspicuously very low, it being only 7 students in case of Location-I, 2 students in case of Location-II, and 9 students in case of Location-III. The comparative higher literacy rates in case of Locations II and III (see Table 5.4) show that the road-side locations provide easy accessibility to educational facilities and thus play an important role in influencing the rate of literacy.

5.2.6 Level Of Living And Quality Of Life Of The Sampled Villages

Besides level of income, the quality of life of a region is also determined by some other variables such as:-

(I) the type of house possessed (pucca, semi-pucca, kacha, etc.) by a family vis-à-vis the availability of living space;

(II) availability of amenities in the form of electricity, potable water, the distance of the source of water from the households;

(III) type of consumer durables possessed by the households; and

(IV) availability of other infrastructural facilities like health-care, banking facilities, postal facility, etc.

The empirical facts, village-wise as well as for the over-all sample, are presented below:
TABLE 5.4: LITERACY RATE (IN PERCENT) OF SAMPLED VILLAGES

<table>
<thead>
<tr>
<th>S. No.</th>
<th>VILLAGE/LOCATION</th>
<th>TOTAL POPULATION</th>
<th>TOTAL LITERATES</th>
<th>LITERACY RATE</th>
<th>HIGHEST EDUCATION ACHIEVED IN THE VILLAGE</th>
<th>TOTAL NUMBER OF GOVT. SERVICES (SSB AND ITBP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(I)</td>
<td>(II)</td>
<td>(I)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(5)</td>
<td>(6)</td>
<td>(7)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(8)</td>
<td>(9)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Location-I (Asrang)</td>
<td>372</td>
<td>118</td>
<td>76</td>
<td>194</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>31.7</td>
<td>20.4</td>
<td>52.1</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Location-II (Lippa)</td>
<td>354</td>
<td>125</td>
<td>67</td>
<td>192</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>35.3</td>
<td>18.9</td>
<td>54.2</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Location-III (Sangla)</td>
<td>337</td>
<td>126</td>
<td>73</td>
<td>199</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>37.4</td>
<td>21.7</td>
<td>59.1</td>
<td>32</td>
</tr>
<tr>
<td>Over-all Sample</td>
<td>1063</td>
<td>369</td>
<td>216</td>
<td>585</td>
<td>34.7</td>
<td>55.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>76</td>
</tr>
</tbody>
</table>

**NOTE:** - SSB denotes Special Service Bureau. ITBP denotes Indo-Tibetan Border Police.
It is apparent from Table 5.3 that there are, for the over-all sample, 911 consumer units, with Location-I, Location-II and Location-III having 315, 306, and 290 consumer units respectively. Average number of members of a family for sampled villages are 7.0 each (see Table 5.2) supra. In contrast to these figures, the corresponding average number of consumer units (AEUs) for the three sampled villages are 6 each (see Table 5.3).

5.2.5. LITERACY

The level of literacy, as a major ingredient of ‘culture’, is the most important indicator of ‘economic change’ vis-à-vis ‘levels of living’, it being catalytic to the process of economic development. Literacy generates awareness and enthuses people to accept ‘change’ by becoming willing instruments in the process of change. Richard Gill rightly observes that what is noticeable in the context of developing countries today is that they have become increasingly aware of their economic deprivation and are, therefore, resolved to do something about it (cf. Richard T. Gill; 1970: 85). This growth dynamics helps people to re-orient their attitudes and aspirations, causing, in turn, a shift in attitude from ‘tradition and stability’ to ‘growth and change’. Schultz’s (1962) views are equally germane on this point who stated that literacy levels alone are not enough to sustain the new technology, unless facilitated by 10 years of conventional schooling.

Location-wise literacy percentage in case of sampled villages is tabulated and presented in Table 5.4.
### TABLE 5.3: ADULT EQUIVALENT UNITS/CONSUMER UNITS OF SAMPLED VILLAGES

<table>
<thead>
<tr>
<th>S. NO.</th>
<th>SIZE-CLASS</th>
<th>LOCATION-I (ASRANG)</th>
<th>LOCATION-II (LIPPA)</th>
<th>LOCATION-III (SANGLA)</th>
<th>OVER-ALL SAMPLE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>TOTAL AEUs</td>
<td>AVERAGE NO. OF AEUs PER FAMILY</td>
<td>TOTAL AEUs</td>
<td>AVERAGE NO. OF AEUs PER FAMILY</td>
</tr>
<tr>
<td>(1)</td>
<td>(II)</td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
</tr>
<tr>
<td>1.</td>
<td>Marginal</td>
<td>82.5</td>
<td>6</td>
<td>143.3</td>
<td>6</td>
</tr>
<tr>
<td>2.</td>
<td>Small</td>
<td>71.5</td>
<td>6</td>
<td>53.7</td>
<td>5</td>
</tr>
<tr>
<td>3.</td>
<td>Semi-medium</td>
<td>97.0</td>
<td>6</td>
<td>65.7</td>
<td>8</td>
</tr>
<tr>
<td>4.</td>
<td>Medium</td>
<td>51.2</td>
<td>8</td>
<td>29.8</td>
<td>6</td>
</tr>
<tr>
<td>5.</td>
<td>Large</td>
<td>13.1</td>
<td>13</td>
<td>13.1</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>Over-all Village/ All Holdings</td>
<td>315.3</td>
<td>6</td>
<td>305.6</td>
<td>6</td>
</tr>
</tbody>
</table>

**SOURCE:** Self-compiled Appendix-1
Table 5.2 further reveals that for the over-all sample, the male-female ratio is 51:49, as against Location-I (52:48); Location-II (51:49); and Location-III (51:49).

On the other hand, sex-ratio is an index of number of women per thousand of males. In the over-all sample as a whole, the sex-ratio is 947:1000, as against corresponding ratio for Location-I, Location-II, and Location-III being 937/1000, 945/1000 and 959/1000 respectively. This ratio is higher as compared to 867/1000 (during 1991-2001 for the tribal areas). However, it is lower than the corresponding ratio for the State as a whole i.e. 968/1000 for the period 1991-2001 (Tribal Sub-Plan, 2006-07, p. 7).

5.2.4. ADULT EQUIVALENT UNITS OR CONSUMER UNITS

It is yet another indicator of magnitude of consumption expenditure in an economy and thereby its level of living. The total biological units (males, females and children) have been converted into standard consumer units or Adult Equivalent Units (AEUs) by applying the scale of coefficient recommended by the Indian Council of Medical Research (cf. Karam Chand; 1990:185). The requisite empirical data is reproduced in Table 5.3.
On the basis of tabular data (Table 5.2) a brief description of the following demographic aspects can be made, namely:-

5.2.2. **ACTIVE WORK-FORCE vis-à-vis DEPENDENCY RATIO**

For the purpose of this study, the persons falling in the age-group of 16-65 years have been treated as constituting active work-force i.e., the number of people who are actually available for gainful employment. It can be seen from Table 5.2 that the extent of work-force, for the over-all sample, is 46.0 percent, as against for Location-I (43.0 percent), Location-II (47.5 percent) and Location-III (47.8 percent).

Juxtaposed with the active work-force is its complement i.e., the extent of dependents in the total population. The family members falling either below 16 years or above 65 years have been clubbed together under ‘dependents’ for the purpose of this study. For example, if a given population is associated with high fertility rate and consequently with an increasing number of children (relative to available work-force), then the net effect will be that the number of consumers or ‘dependents’ will be growing more rapidly than the number of producers or active workers, assuming the life-expectancy of population of a region to remain constant. (cf. Richard T Gill; 1970:5)

As can be seen from Table 5.2 (col.8), the extent of ‘dependency’ for the over-all sample came to 54.0 percent, as against 57.0 percent for Location-I, 52.5 percent for Location-II and 52.2 percent for Location-III, giving ‘dependency ratio’ as 1.2, 1.3, 1.1, and 1.1 respectively. It implies that the dependency-ratio per active member is higher in all the three locations.

5.2.3 **MALE-FEMALE RATIO AND SEX-RATIO**

The birth rate as well as the magnitude of a population is significantly affected by the proportion of males and females in it. The extent of females in hilly areas is especially important in view of the fact that women have always played an important role in the labour market, particularly in the tribal areas of Himachal Pradesh where the economic set-up is still predominantly agro-pastoral i.e., combining animal husbandry as an important component of agriculture.
### Table 5.2: Demography (Male-Female Ratio, Sex-Ratio, Consumer Units And Average Size Of The Family) Of The Sampled Villages

<table>
<thead>
<tr>
<th>S. NO.</th>
<th>NAME OF VILLAGE</th>
<th>TOTAL HOUSEHOLDS</th>
<th>TOTAL POPULATION (2+3)</th>
<th>MALE- FEMALE RATIO</th>
<th>SEX RATIO FEMALES/1000 MALES</th>
<th>ACTIVE WORK FORCE (16-65 years)</th>
<th>TOTAL DEPENDENTS</th>
<th>TOTAL CONSUMER UNITS (AEUs)</th>
<th>AVERAGE SIZE OF THE FAMILY</th>
<th>DEPENDENCY RATIO</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>LOCATION-I (ASRANG)</td>
<td>50</td>
<td>372</td>
<td>52.48</td>
<td>937</td>
<td>160 (43.0)</td>
<td>212 (57.0)</td>
<td>315.3 (6.0)</td>
<td>7</td>
<td>1.3</td>
</tr>
<tr>
<td>2.</td>
<td>LOCATION-II (LIPPA)</td>
<td>50</td>
<td>354</td>
<td>51.49</td>
<td>945</td>
<td>168 (47.5)</td>
<td>186 (52.5)</td>
<td>305.6 (6.0)</td>
<td>7</td>
<td>1.1</td>
</tr>
<tr>
<td>3.</td>
<td>LOCATION-III (SANGLA)</td>
<td>50</td>
<td>337</td>
<td>51.49</td>
<td>959</td>
<td>161 (47.8)</td>
<td>176 (52.2)</td>
<td>298.8 (6.0)</td>
<td>7</td>
<td>1.1</td>
</tr>
<tr>
<td>OVER-ALL SAMPLE</td>
<td>150</td>
<td>1063</td>
<td>51.49</td>
<td>947</td>
<td>489</td>
<td>574 (54.0)</td>
<td>919.7 (6.0)</td>
<td>7</td>
<td>1.2</td>
<td></td>
</tr>
</tbody>
</table>

**NOTE:-**

(I) AEUs denotes Adult Equivalent Units or Consumer Units.

(II) Col. 7 ÷ col. 8 = Col. 4

(III) Figures in parentheses under col. 7 and 8 denote percentages.

(IV) Dependency Ratio = Total number of Dependents divided by total number of Active Workers. It denotes number of ‘dependents’ per active member.

(V) Figures in col. 9 (in parentheses) denote average number of consumer units or dependents per operational holding/house.
## TABLE 5.1: SIZE-WISE NUMBER OF OPERATIONAL HOUSEHOLDS OF SAMPLED VILLAGES

<table>
<thead>
<tr>
<th>S.NO.</th>
<th>SIZE-CLASS</th>
<th>LOCATION-I</th>
<th>LOCATION-II</th>
<th>LOCATION-III</th>
<th>OVER-ALL SAMPLE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>NUMBER OF HOLDINGS</td>
<td>NUMBER OF HOLDINGS</td>
<td>NUMBER OF HOLDINGS</td>
<td>TOTAL NUMBER OF HOLDINGS</td>
</tr>
<tr>
<td>(I)</td>
<td>(II)</td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
</tr>
<tr>
<td>1.</td>
<td>Marginal</td>
<td>14</td>
<td>25</td>
<td>23</td>
<td>62</td>
</tr>
<tr>
<td>2.</td>
<td>Small</td>
<td>12</td>
<td>11</td>
<td>11</td>
<td>34</td>
</tr>
<tr>
<td>3.</td>
<td>Semi-medium</td>
<td>17</td>
<td>8</td>
<td>9</td>
<td>34</td>
</tr>
<tr>
<td>4.</td>
<td>Medium</td>
<td>6</td>
<td>5</td>
<td>6</td>
<td>17</td>
</tr>
<tr>
<td>5.</td>
<td>Large</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>All Holdings of the village</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>150</td>
<td></td>
</tr>
</tbody>
</table>

**NOTE:-**

(I) The concept of ‘operational holding’ and ‘household’ has been used interchangeably.

(II) The term ‘over-all sample’ denotes aggregation of Location-I, Location-II, and Location-III, whereas the term ‘over-all village’ indicates the sum total of all village holdings.
5.2.0 SOCIO-ECONOMIC PROFILE OF THE SAMPLED
VILLAGES

Socio-economic profile (duly supplemented by appendixes 1 to 21 attached in the end of this chapter) is designed to give a glimpse into those factors which normally give an impetus to an economy, discussed hereunder:-

5.2.1 DEMOGRAPHY: COMPOSITION OF WORK-FORCE

Population plays an important role in the context of 'economic change'. Economic development is essentially a function of natural endowments of a region, its capital structure, and most importantly, the availability of quantum and quality of its work-force. Demographic profile, thus, influences the income and consumption levels of a given society and thereby its standards of living.

In the present study, there are 150 sampled households spread over three villages, each village, in turn, having 50 randomly selected households. Total population of the three locations consists of 541 males and 517 females (1063 biological units including children). Size-wise and location-wise number of operational holdings, and age-wise distribution of population have been presented in Table 5.1 and Table 5.2 respectively. Age composition sets limits, above and below which a person cannot be expected to work for gainful employment. In other words, it gives us an insight into two important constituents of a population viz. (I) the work-force, and (II) the number of dependents.
5.1.11 ROLE OF CUSTOMS

Almost all the tribes in India have customary laws and practices which are quite different from their non-tribal counterparts. For example, artisans were traditionally paid in-kind at the time of harvest. Similarly, the practice of exchanging labour-days on reciprocal basis is also fairly common even now. The law of value which governs the exchange of commodities and through this the distribution of the work-force, operates according to the customs or through conscious choices of the society. This is done in a way that it ensures the continuity of economic life. (cf. Ernest Mandel; 1983:29-30)

5.1.12 LAND TENURE AND FORESTS

Tribal economy is a typical dichotomy, with ‘land’ and ‘forests’ being its two important assets. It has been so since the days of food-gathering when primitive man was moving from forest to forest in search of food. Even now these assets (land and forests) continue to form the twin sectors of their economy. Among the Indian tribes, both types of tenures continue to exist i.e. (i) Collective or community-based land tenure where the land is held collectively and the individuals have only operational rights over land and (ii) the individual tenure.

A community-based ownership of resources ensures an automatic societal integration as well as solidarity to a village. However, what is still notable in the context of a tribal economy is that even now, when the land records are documented individually, the practice of collectively sharing the minor forest-produce and other common-property rights (CPRs) is fairly wide-spread among tribes.

They may be economically unequal, as they really are when seen in terms of distribution of land among different land-size classes, but the distinguishing mark of their collective existence lies in their sense of solidarity/oneness. Every individual lives in solidarity with the tribe as a whole, unlike as a co-partner in a non-tribal society. This gives them a unique social cohesion, as each member is aware that the system is viable so long as one co-exists as a part of the collectivity.
each other on barter basis’. These markets are mostly confined to dealing with items of daily use only, such as jaggery, sugar, mustard oil, cereal, spices, salt, utensils, agricultural tools, cloth, etc., and are run for a couple of days only. Such markets also provide a ready forum for cultural exchange.

When the role of market is limited, as is the case with a tribal economy, there is hardly any role either for specialization or improvement in skills. Moreover, a ‘closed’ and caste-bound economic structure permitted little scope for horizontal, vertical, or spatial mobility of labour. Probably it was in such a context that Rostow (1959) had referred to the concept of a traditional society, where the production structure is based on a limited production function, based on pre-Newtonian attitudes towards science and technology.

5.1.10 A BARTER ECONOMY VIS-À-VIS ROLE OF CASH NEXUS

Another important feature of a tribal economy is the lack of cash nexus or role of organized money market. Most of the transactions in these economies are conducted on tradition-based or customary practices, with the result that barter-transactions predominate. In such a primitive society, production is essentially based on the satisfaction of immediate needs of a given collectivity.

Exchange was accidental and affected only a tiny fraction of the total production. (cf. Mandel; 1983:4) Money, if used, consists of gold or silver specie. In fact, many primitive societies, which are still living in isolation, are managing without monetary instruments. With the onset of common medium of exchange, the tribal groups cease to have a direct relationship with each other in their economic life. Their relations now come to be formed through the intermediary of the exchange of the products of their labour. (cf. Ernest Mandel; 1983:27) As stated earlier, the tribal markets are highly localised and deal in products of daily use only. A part of the production which is undertaken for the market aims at meeting such expenses as:- (i) payment of land revenue, (ii) repayment of loans,(iii) interest payments, (iv) purchase of consumer goods, (v) purchase of farm implements, draught and milch cattle.
designated as agro-pastoral. With ‘transhumance’ as a necessary condition for survival of agro-pastoral set-up, the life of tribes became migratory as the quest for pasture-lands led them from hills to the neighboring plains in the winter season and on a return journey to the hills in the summer months.

In such a set-up work-force was mainly concentrated in agriculture, which employed directly or indirectly more than 70 percent of the man-power. By implication, the role of non-agricultural sector was very small. There was no scope for any industry worth the name except the household-based cottage industry engaged in spinning, weaving, handicraft or making of such goods as are mostly needed for self-use or are for use within the village economy itself.

5.1.8 EXTENT OF CAPITAL FORMATION

The very notion of ‘surplus’ or investible funds is absent in a traditional tribal economy, because the tribals, given to producing primarily for self-consumption, are neither in a position to generate any surpluses, nor are they equipped to preserve commodities of everyday use. Moreover, their nomadic mode of existence forbids the development of techniques of preservation and conservation of surplus produce, if at all any. In such a situation, where the whole being of an economy is subsumed in procuring food, there is no scope for capital formation because there is neither any surplus nor any means to preserve it. As such, there is no scope for further economic development, let alone rapid economic development. (Refer Mandel, ibid: 11)

5.1.9 EXTENT OF THE MARKET VIS-À-VIS SPECIALISATION

Another important feature of a subsistence economy is the absence of dependence on a wider market. This follows as a corollary from the fact that such a system is oriented to cater to its own needs only, and, as such, does not have any marketable surplus. But it would be apt to qualify this statement. When we say that a tribal economy does not depend on a wider market, it certainly does not mean that this economy is completely insulated from the outside world. All it means is that the tribals have merely a tangential interaction with the outside world.

As a matter of fact, markets in tribal areas are highly localized. In most of the cases, people assemble at a particular pre-assigned place and exchange goods with
output to the wider market, nor any need for purchased inputs either. It implies that input-output decisions of producers are independent of market forces. Thus, it is neither the factor-prices nor the product-prices which can constrain the agricultural operations of such an economic unit.

5.1.6 ROLE OF HIRED LABOUR

As in the case of other inputs which need not be purchased from the market, there is hardly any role for hired labour too. The reason lies in the fact that such an economy often practiced 'simple commodity production', that is, production done with the help of its own family-labour. This mode-of-production is often styled as 'familial' or 'domestic' (cf. Vidyarthi and Rai, 1976:100). In such an economy there is a deliberate/planned sharp division of labour between men and women. Whereas women take up comparatively less arduous jobs (like sowing, harvesting, irrigation, making baskets, pottery, etc.), the more physically exacting jobs are undertaken by men-folk like ploughing, preparatory tillage, felling trees, hunting big games, going out for trade, etc.

In a tribal society, there is a wide-spread practice of reciprocal exchange of labour-days for under-taking onerous jobs. Such a practice is, in fact, proof of the continuity of clan-allegiance and common citizenship of the village (Nanda: 83). As a result, labour is directly social, (unlike the later-day economy) when the private character of labour and the private ownership of the means of production gradually separate the members of a community from one another. (Ernest Mandel: 1983:27)

5.1.7 UNI-SECTOR ECONOMY vis-à-vis LACK OF DIVERSIFICATION

A tribal economy is basically a uni-sectoral economy where the most important line of production is either agriculture or, at best, a mix of agro-pastoral activities. In a tribal society, agriculture initially started as a subsistence type of activity because it could readily fulfil the immediate needs of the local community.

Being uni-sectoral meant that there was little or no scope for diversification of agricultural activities. In due course, however, tribes started taking recourse to breeding and rearing of animals for commercial purposes and, therefore, came to be
5.1.3 ESSENTIALLY A SUBSISTENCE-BASED ECONOMY

A tribal economy is basically oriented to produce as much as would suffice for its subsistence. The level of production in a subsistence-based economic unit is generally governed by its internal demand only and does not depend upon the actual availability of factor-inputs to it. Actually, such an economy is geared to produce no more than what is needed for its own economic survival and as such caters for the bare minimum. It produces (i) enough for its total population and its livestock; (ii) earmarks a part of its resources i.e., depreciation for keeping its productive base intact; and (iii) makes provision for payment of land revenue and other necessary payments, such as repayment of loan, purchase of consumer goods, farm implements, draught and milch cattle, etc. These self-sufficient economic units are also termed as zero growth economic organizations.

5.1.4 PRODUCTION OF USE-VALUE ONLY vis-à-vis CROPPING PROFILE

The production in a subsistence unit largely consists of use-values and for immediate consumption only (and not of commodities for sale). It, in other words, means that whatever is produced is primarily meant for self-consumption and not for sale to the wider market, simply because it does not have any marketable surplus. In view of this, a tribal economy is also called a production-cum-consumption economy. Obviously, it has two implications:- (i) that whatever is produced, be it exclusively agricultural or agro-pastoral, is wholly used for local consumption within the economic unit itself; and (ii) that since land-use is primarily diverted to raising food crops only, the area under non-food crops is therefore severely limited or is almost negligible.

5.1.5 ENDOGENOUSLY DETERMINED SYSTEM

A tribal economy is essentially determined by endogenous factors such as its ecological surroundings, physical environment, weather conditions, land-forms, etc which condition and control its input-output decisions. In such an economy, inputs are generated from within the system and the output too is consumed within the system itself, with the obvious result that there is hardly any role for the disposal of
5.1.0 CHARACTERISTICS OF A TRADITIONAL TRIBAL ECONOMY

Since, in the context of this study, it has been hypothesized that a typical tribal economy is essentially subsistence-based, it would, therefore, be worthwhile to portray the main characteristics of such an economy in order to understand the dynamics of ‘change’:-

5.1.1 SELF-SUFFICIENT ECONOMIC UNIT vis-à-vis OCCUPATIONAL STRUCTURE

A tribal village economy essentially functioned as an autarkic economic unit. Each village has three main classes of people, namely (i) the cultivators, (ii) the artisans, and (iii) the dependents. Whereas cultivating class supplied food to the village population, the artisans (weavers, barbers, carpenters, blacksmiths, washermen, etc.) rendered services to the village on a collective basis and were paid in-kind as per the established customs.

5.1.2 A CLOSED ECONOMY

The socio-economic set-up of such a village economy was well-knit and each class was mutually dependent upon the other. In brief, the economic life of the village was so constituted that it tended to minimize its dependence on the outside world. Such a closed village economy is also at the same time a self-sufficient socio-economic unit. In fact, the concept of self-sufficiency is not much different from ‘closedness’ because such a unit produces no more than what it actually needs, which, in turn implies ‘closedness’ i.e. a minimum of transactions with the outside world. The characteristic of ‘closedness’ excludes the possibility of development of new forces of production and efficiency.

‘Caste’ very often acted as the pivot for social and vocational organization. In fact, the occupational distribution of work-force was done on the basis of caste. Since caste was unalterable, so was the occupational structure. Thus, ‘caste’, in a way, tended to reinforce a static village economy and ensured its ‘continuity’.