CHAPTER 1
INTRODUCTION

The concept of livelihood has widely been accepted as offering new insights into the dynamics of development, growth and diversity of experiences of the people all over the world. According to Carney (1998) it is an approach that provides a basis for understanding the different communities, their local environment and external socio-economic and institutional forces. A livelihood comprises the capabilities, assets (including both material and social resources) and activities required for a means of living. Access to these assets and capabilities is mediated by institutions and social relations.

Livelihood, which is dynamic and complex, is influenced by a wide range of formal and informal institutions, including markets. Markets being inherently dynamic, livelihoods of the communities are to a great extent guided by markets. The character of these external institutions such as markets thus represents the vulnerability context, within which the livelihood system of different communities develops. The exchange entitlements of an individual in the market depend on his position in the economic class structure as well as the modes of the production in the economy. “But even with the same ownership position, the exchange entitlements will be different depending on what economic prospects are open to him, and that will depend on the modes of production and his position in terms of production relations” (Sen, 1987). Therefore, in any market economy it is necessary to look at and analyse not only the ownership patterns
and exchange entitlements, but also the forces behind them. If one doesn’t have much to exchange, he may lose out in competition with others whose needs may be a good deal less acute but whose entitlements in terms of demand and supply are stronger. Market demands are therefore choices based on exchange entitlement relations (Sen, 1987)\textsuperscript{1}.

\section*{1.1 UNDERSTANDING LIVELIHOODS}

Livelihood approaches are being used all over the world as an ‘optic’ through which not only poverty can be better understood but also development options prioritised. Rural economies with their needs, resources and assets - natural, social, capital, human, physical and financial put up together the key strategies which aid in their adoption of various livelihood portfolios. These strategies, whether natural resource based or non-natural resource based initiate growth and development by reducing vulnerability for the rural households.

Livelihood studies which are taken down to the household level are said to offer the following advantages:

- Unravelling the complexity, diversity and ambiguity of people’s lives rather than relying on simplified assumptions about how rural economies work.

- Going beyond typical spatial or sectoral boundaries. It can highlight the importance of cross-spatial activities and cross sectoral linkages.

\footnotetext{\textsuperscript{1} p. 6}
Capturing the different positions of marginalised households whose positions may be lost in data that is aggravated at village or regional level.

Revealing the interplay of forces of change affecting households both internally, such as stage in the lifecycle and from outside, i.e. from economic transformation or policy change.

Distinguishing between the intended outcomes of policies and programmes and what is actually happening to the poor.

Understanding change is at the centre of very analysis of livelihoods. Therefore, understanding livelihoods provides a reality check to the existing situations. However, livelihood analysis can go beyond achieving results to find the routes through which policy-makers can use the findings. It is hence a two way approach - (a) identifying how policies affect livelihoods, and (b) how a better understanding of livelihoods can help improve policy-making and implementation.

Many of the causes of change in livelihoods stem from external forces such as changes in the markets and the structure of the economy. These forces can vary from price change, change in product demand, introduction of new technologies, introduction of new state policies, environmental changes and changes in political and social relations.
1.2 ROLE OF DIVERSIFICATION

Many households diversify across different activities under the influence of the external factors. It has been found that when positive exogenous forces create new opportunities, households that have build up skills and assets and those that are better placed to seize the new opportunities can diversify their livelihoods. Diversification is the process by which economies become more diversified (Guidance Sheets, 2003:2.2). At household level, this tends to mean adding on new activities. Again, the poor households with very little accumulation also tend to diversify to sustain themselves.

'Diversification' in the wider regional economy at the first place is closely associated with the transformation of the economy’s sectoral composition. As it develops, an economy typically shows an increasing fraction of the total output coming from the manufacturing and service sectors and a declining share of the primary sector, mostly from agriculture proper. These changes are usually positive in that labour productivity in the secondary and tertiary sectors tends to be higher than in the primary sector, so that overall productivity rises. But in the remote rural regions, dependency on agriculture may increase instead of declining depending on their marginalisation from the various institutions like markets and urban centres or because new opportunities to supply farm produce to the growing urban centres arise. Diversification can therefore either add to accumulation or lead to impoverishment. If the new economic options provide a higher return than a household's usual activities this is called pull or positive diversification which can in turn lead to a better life. If, on the other hand, the
new options provide a lower return than usual, they are likely to be coping strategies in response to some shock or downward trend. This is termed as push or negative diversification which may be important for the survival of the households but may form part of a cycle of impoverishment. Between these two extremes is a large area of diversification into activities that people move into for reasons like taking on new opportunities as the circumstances change. Hence livelihood diversification may occur at different levels:

- Regional economy diversifies into new sectors.
- Regional economy not growing into new sectors, but individuals may have to draw on a growing range of work to support themselves, resulting in livelihood diversification at the individual level without any economic diversification at the regional level.
- While the regional economy diversifies, there may be households unable to participate in the new opportunities for the lack of capital or skills, therefore they have to depend on traditional activities or diversify into low return-informal activities resulting in economic diversification at the regional level and moderate diversification at the household and individual level.

As with the developing world, in India also the economic motives to diversify are not new to rural India but are currently reinforced by structural change (Guidance Sheets, 2003:2.3).
As the economy modernises, new options emerge for processing, trading or developing existing assets and products.

Labour markets have become casualised as the agricultural plots are sub-divided. Thus, whereas before many of the rural people relied on one or two activities, many people today have been forced to take up complex portfolios to cope with insufficiency.

Economic structural change is thus reinforcing motives to diversify, whether to cope with insufficiency or seize new opportunities and advantages (Guidance Sheets, 2003:2.3).

1.3 ROLE OF MARKETS IN DIVERSIFICATION

Livelihood studies in relation to changes caused by the forces of demand and supply can depict the impact of the change, in terms of better or worse economic status. To understand the vista of livelihood options open to the rural poor, extent of access to the institutions like markets must therefore be analysed. Markets are key institutions for buying and selling of goods and services, as well as assets, i.e. the factors of production. Studies however reveal that people's capacity to participate in these markets is highly differentiated.

Market as a concept of economic exchange between individuals or culture groups, perhaps emerged during the late Neolithic period, subsequent to the emergence of agriculture and a secured, sedentary and a fruitful means of sustenance compared to the tireless wanderings of the hunter or the nomad of the yester years. Thus, might have arisen the first surplus of the farmer over his own family needs
(Mohapatra, 1994). Slowly, exchange economy emerged between specialized culture groups based on different skills, technologies and material bases, tucked away in their special environmental niches. The institution of money thus emanated in an undersigned manner from the communications and interactions of individual agents.

However, it was only towards the end of the 19th century that the nature and origin of social institutions such as money contributed and facilitated towards a systematic development of market exchange in these set ups. Slowly, a large number of markets were found more or less, at the interface of the two culture areas, the peasants and the hill tribes indicating the specific nature of their distinctively different economic formations resulting in a peculiar expression, the strings of market centres surrounding the hills and tribal culture areas. The evolution of systematically standardised monetised exchanges thus expedited trade between localities across space, standardised exchanges over time, and transformed work into wage labour. Money also generated the possibilities for specialisation which were not possible under a system of barter, and solidified the emergence and development of the modern epoch (Kraus et al 2002). Trade as a concept of economic exchange therefore got an expression in the form of market place, mostly at a convenient location whether within large settlements or between culture groups.

Therefore, according to Pale, Polanyi and Hodder (Mohapatra, 1994), the endogenous development of market centres and periodic markets took place within all the peasant societies either as a response to the growing surplus and
product specialization or due to contact between two spatially differentiated culture groups, particularly, along the long trade routes. Such periodic markets are also the basic component of the rural and tribal set-ups accommodating transactions. The markets affected the tribal culture and economies profoundly in two ways - first, within the tribal culture groups, the introduction of money economy and the tolls of market entry (a form of alienation of surplus) of commodities from the hills by the local chieftains and their officials led to economic and social differentiation. Secondly, the process of integration of the tribal cul-de-sacs and economy of the larger economy of the colony and even, the world market was accentuated.

Therefore with time, the weekly markets have assumed two major dimensions - items of consumption have increased and a new market has been introduced to the tribals and therefore, the market has extended. In other words, the weekly markets have not only weakened but have gone to the single tribal market (Jain, 2001). The market centres therefore, changed the worldview of the tribal man by exposing him to new necessities. The market space hence gave way to the intrusion of market forces of demand and supply.

1.4 HISTORICAL EVOLUTION OF THE CONCEPT OF LIVELIHOOD

The main distinguishing feature of the livelihood approach has been its attempt to set the analysis of livelihoods within a comprehensive framework which encompasses policy and institutional processes at various levels, as well as micro-level conditions and determinants of livelihood. Some of the key features of the
livelihoods approach over the last twenty years are enlisted below (Ellis & Biggs, 2001):

- That poor people, especially in rural areas, manage a complex range of assets and activities to sustain themselves. Development professionals and officials often fail to adequately address this.

- That the poorest people are often disproportionately dependent on access to assets which are not privately owned, such as the common property or the open-access resources namely, the forests, common grazing land and fisheries.

- That effective poverty reduction through public budgets is not simply a question of what are classically perceived as ‘social expenditures’. The poor also need access to a range of other assets and services, including financial services, markets and equitable justice systems. There is therefore the need for a policy and institutional environment that supports multiple livelihood strategies and promotes equitable access to competitive markets for all.

- That in addition to quantitative ‘metric’ measures such as household consumption which retains value in terms of providing a basis for addressing different levels of poverty both over time and between different social groups and regions, there is a need to go beyond this ‘reductionist’ approach and the general inability to analyse intra-household dimensions of poverty.
1.5 RATIONALE FOR THE STUDY

The tribal areas are mostly characterized by their aloofness, a lower level of economic activity and a closed social structure. The settled agricultural operation and other industrial developments along the plains have distinctly different character from the tribal economic set up along the hilly terrains of the country. This distinction is very pronounced in respect of North East India where approximately 70 percent of the area and 12.15 percent of the population are concentrated in the hills and have tribal social structure. In the hilly sub-region of North East India consisting of Arunachal Pradesh, Manipur, Nagaland, Mizoram, the North-Cachar hills, the Mikir hills, the Khasi-Jayantia hills, most of the producers practiced jhum cultivation. Although some amount of trade and commerce did take place between the hills and the plains, there could not be any large scale exchange due to lack of economic development and communication bottleneck, apart from the archaic social relations between the sub-regions. The prevailing means and methods of production held the producer, as it were in iron fetters fast in his trucks. However, with the growth in economic activities and some development in communication and connectivity with the other areas, contacts with the non-tribals developed and these self-sufficient economies gradually broke down and people started to depend more upon the markets for the sale of their produce and purchase of their own necessary requirements.

Arunachal Pradesh, with a patchwork of discrete types of preindustrial political economies in such a small area, including semi-nomadic swidden horticulture, terraced wet agriculture, high mountain pastoralism and traditional trade and
barter stands unparalleled which cradle the habitation of a large number of tribes of mutually unintelligible languages and distinct ways of life.

Market forces of demand and supply are in fact found to be penetrating even in the remotest tribal agglomerations in Arunachal Pradesh. Amidst the market forces, the tribal people are maintaining their livelihood by undertaking a number of occupations such as forestry and food gathering, settled agriculture, animal husbandry, fishing, industrial and agricultural labour, trade and commerce of which household industry including handicrafts is of prime importance. However, shifting cultivation as the subsidiary means of livelihood is also widespread. The most interesting aspect of the tribal economy is that they rarely follow one occupation exclusively. And added to it, their livelihood patterns are in a transition phase from subsisting to sustenance. The tribals are now seen selling their forest produce or agricultural yields in the markets for their other requirements.

As the socio-economic panorama of the territory is gradually undergoing changes, the people are slowly breaking away from their simple tribal isolation into the wider integration of the Indian nation (Dutta, 1993).

Land continues to be the mainstay of almost all the tribal communities at their present stage of development. The superiority of jhum cultivation over sedentary cultivation partly explains the persistence of this form of agriculture in Arunachal even today. Other reasons include the economic security provided by jhum and its cultural importance to indigenous tribes. In these tribal societies therefore, shifting cultivation marks a stage of transition from hunting and food-gathering to settled agriculture.
Among the twenty-six major tribes of Arunachal Pradesh, the genius of the indigenous people, the Adis in particular, mostly residing in the Siang districts of East Siang and West Siang who constitute a major tribe in the state, is an important contributory factor of the remarkable achievements that has been made in various sectors of development. Siang has about 16.41 per cent of the total villages including the Upper Siang district. These villages are very small that contain about 20.46 per cent of the rural population of the state. The West Siang district with a population size of 9.46 per cent is one of the largely populated districts as compared to the East Siang district which has a population size of 7.59 per cent according to the 2001 census. Besides agriculture, the bulk of the economy of the people is connected directly or indirectly with the forest and forest produce. The Adi Gallongs of the West Siang district and the Adi Padam and Minyongs of the East Siang district have made considerable progress towards the development of wet-rice cultivation in their respective areas. This transition in agriculture may be one of the dominant factors responsible for the tribals of the Siang district to be drawn into the vortex of market forces.

The districts of East Siang and West Siang sharing their borders with Assam are exposed to the market forces. Both the districts are at different levels of development and with livelihood patterns differing, though marginally, are open to the intruding market forces. These market forces seem to have introduced opportunities of livelihood outside agriculture proper and have perhaps changed their attitude towards work as new demands and urges are beginning to create a desire for money. Therefore, the emerging new forms of economic space and spatial relations in these tribal societies require insights. Also, there is increasing
evidence that diverse livelihoods are widespread and enduring, even in relatively undiversified economies (Gordon, 1999). This may be true in Arunachal Pradesh among the Adi sub-tribes – the Gallongs and Padam Minyongs.

While various studies have tried to look into the socio economic aspects of tribal people, no attempts have been made to study the livelihood issues and the market forces in the context of the tribal societies of Arunachal Pradesh. In pursuance of the present study the question therefore arises, given the existing organisation of tribal societies in Arunachal Pradesh, how are they responding to the intruding market forces? The study taken up, is therefore, a humble attempt to analyse the economic position of the tribes in the two districts vis-à-vis their opportunities to diversify their livelihoods in relation to their access to the market economy.

1.6 OBJECTIVES

Market as an institution can play an important role in diversifying any economy. If an economy which is almost hilly in nature with agriculture dominating as the main source of livelihood is integrated with the market based economy, new opportunities of diversified livelihoods may open up. It is, therefore, necessary to analyse whether this integration with the market economy can help the tribal households in coping well and benefiting from this vista of opportunities. Moreover, the other formal institutions like the land relations and the tribal political organisations prevalent among the tribes may also decide the degree of this integration. Keeping this in view, the study
therefore, tries to measure whether the tribal households are being marginalised or being economically integrated by the penetrating market forces. The study has been taken up with the following specific objectives:

i. Study the livelihood pattern of the Adi Gallongs and Padam Minyong households and their adjustment and responses to penetration of market forces and economic integration process.

ii. Identify the factors that hinder successful integration and tend to marginalise the Adi tribal households from the integration process.

iii. Identify the factors that help diversify livelihood of the tribal households and thereby to cope well and benefit from the forces of economic integration.

iv. Examine the relevance and effectiveness of the tribal traditional self-governing institutions in Arunachal Pradesh with special reference to the Adis in the context of changing socio-economic environment and penetration of market forces.

1.7 HYPOTHESES

The study has been carried out with the hypotheses that:

i. Penetration of market forces has marginalised the tribal households in terms of asset ownership entitlement.
Alternately, penetration of market forces has enabled tribal households to move up economically with a diversified livelihood pattern by integrating with the broader economy.

1.8 RESEARCH DESIGN AND DATA BASE

The study being both explanatory and empirical looks into both qualitative as well as quantitative aspects of the tribal economy of the two districts, East Siang and West Siang of Arunachal Pradesh taken up for the present study. Data for the study has been collected from both primary and secondary sources. The secondary sources are:

- The Census of India (Arunachal Pradesh) Economic Tables pertaining to the years 1971, 1981, 1991 and 2001 give insight into the sectoral distribution of the workforce in the state

- The Census of India 2001 (Arunachal Pradesh) Village Directory gives a demographic overview of the sample villages identified

- The Census of India 2001 (Arunachal Pradesh) Village Directory gives data pertaining to availability of household amenities

- Estimates of Domestic Product, Directorate of Economics and Statistics, Government of Arunachal Pradesh gives the sectoral growth of the economy over the decades
- The District Handbooks give an overview of the socio-economic profile of the two sample districts

- National Sample Survey data (63rd Round), 2006-07 gives an understanding on the sectoral distribution of the workforce along with market access of the rural economy of the state

**Identification of Study Area and Sampling Method:** The sample for primary investigation has been selected with a multi-stage sample design.

To observe the different degree of market forces and the corresponding response of tribal households, in the first stage two districts - East Siang and West Siang of Arunachal Pradesh have been purposively selected for the study. In the second stage, in order to select the villages – the universe of the study, the nodal centres of market activities in the two districts viz. Pasighat in the East Siang district and Likabali in the West Siang district have been identified keeping in view the fact that both are primary focus of movements in the two districts sharing borders with the state of Assam. In the third stage, three clusters of villages each have been identified in the two districts depending on the distance from the two identified nodal centre of market activities viz. Pasighat and Likabali respectively. Since the villages in the two districts selected for the study have a number of households from as low as ten to as high as three hundred, in the fourth stage, one village each has been selected from the cluster of villages situated at the first few kilometres from the nodal centres of market activities in the two districts depending upon the size of the village in terms of number of
households. From the nearest cluster of villages, a village with maximum number of households each has been selected in the two districts. The same selection procedure has been followed while considering the other two villages each in the two clusters with gradual increase in distance from the nodal centre of market activities and decrease in the size of the selected villages in terms of number of households. Accordingly, the villages selected are Mirbuk, Boying and Rasam in East Siang district and Liru, Dipa and Pale in the West Siang district. In the fifth stage, ten per cent subject to a maximum of twenty eight households and minimum of eight households have been selected at random basis from each of the six villages identified in the two districts.

The Primary Data has been collected at two levels:

1. Village Level

2. Household Level

Keeping in view the objectives and requirements of the study, two structured questionnaires have been developed both at the village and household level. A database has been developed using IT tools in Microsoft MS Access for data entry, storage and retrieval in the required format.

The data collected has been analysed using simple tabulation, cross tabulation and statistical tools in the form of percentages, ratios, averages etc. Graphical representations have been worked out with due reference to the context. Based on the requirement of the study, statistical and econometric tools and analysis like index formation, correlations, regressions etc have been put into use using software like Microsoft Excel, SPSS, Xlstat, STATA etc.
Analytical Methodology

The village level and household level data for the study has been collected from the six villages of the two districts identified for the study as mentioned in section 1.8. The data collected has been subjected to various statistical and econometric tools depending on the need of the study.

To understand the extent of penetration of market forces at household level, an index of market access (\(I_M\)) has been constructed. Further, to analyse livelihood diversification, inverse of Herfindahl-Hirschman index has been computed. Another index, index of living standard has been constructed to understand the relationship between market participation and living standard of the households. The construction and computation of the three measures are discussed below.

**Index of Market Access**

In order to understand market penetration at the household level, an index of market access (\(I_M\)) is constructed to bring out market participation in the villages at household level:

\[
I_M = \left( \frac{A}{A+U} \right)^* I_A + \left( \frac{A}{A+U} \right)^* I_U
\]

Where,

\(I_M\) is the Index of Market Access
I_\text{A} is the proportion of income derived from market out of total acquired by a household.

I_\text{U} is the proportion of consumption acquired from market out of total value of consumption.

A is the income earned from market transaction.

U is the expenditure incurred for consumption in the market.

As given above, A is the household income acquired form market transactions including income acquired from sale of crop cultivation including jhum and settled cultivation, minor forest products, poultry and livestock, handloom and handicraft items, income acquired from rent, interest based activities, petty trade, business and contract and daily wages. Here, income earned by the households from salaried jobs has been excluded inorder to have a clear understanding of the influence of market transaction in terms of selling at the household level.

U is the household expenditure on the consumption basket acquired from market.

The consumption basket constitutes total of the monetary expenditure incurred on various groups of consumption items constituting the following – (a) Food and drink, (b) Fuel and lighting, (c) Toiletries and detergents, and Goods for personal care, (d) Clothing, (e) Health, (f) Education, (g) Transportation, and (h) Miscellaneous. These broad groups of household expenditure further constitute different relevant items of expenditure under each category, including nine items of

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2 However, incidence of contribution of interest income is not observed among the sample households.
3 Salaried jobs include salary earnings from government, semi-government and non-government sectors.
4 It is observed that among the sample households in the study villages, there are households with salaried jobs being the sole source of income.
food and drink, four items of fuel and lighting, one item composed of different toiletries and detergents, and goods for personal care, one item composed of clothes including linen/towel and footwear under clothing, one item composed of expenditure on medicines and related doctor's fee and transportation cost under health, three items under education, one item under transportation and five items under the miscellaneous group.

$I_A$, as mentioned above is the index of household income derived from market divided by the total income acquired by the household including self-consumption as has been reported during collection of the household data. The value of total income acquired by the households from different income earning activities has been estimated at the reported market price of the concerned consumption item at the time of collection of household data.

$I_U$ is the index of household consumption expenditure in market divided by the total value of consumption of a household including final and intermediate consumption constituting - (i) household consumption expenditure, and (ii) household production expenditure. The constituents of consumption expenditure have already been explained above. The household production expenditure is the summation of expenses incurred on various items and factors of production as reported at the time of collection of household data. The production expenditure includes the cost of factors of production like labour and other production inputs like fertilisers, pesticides, seeds, other equipment and tools in agriculture, cost of transportation in case of collection of minor forest produce, cost of feed and fodder in case of poultry and animal husbandry, raw material used in production of handloom and handicraft
items, capital invested in case of petty trade, business and contract and maintenance expenditure in case of buildings on rent.

As the data pertaining to monetary income derived from the different activities like jhum and settled cultivation, sale of handloom and handicraft items, rent, interest based activities and petty trade, business and contract have been collected with a reference period of last ‘365 days’, income derived from sale of minor forest products and poultry and livestock with a reference period of last ‘182.5 days or six months’, and income derived from daily wages and salaried activities in government, semi-government and non-government sectors with a reference period of last ‘30 days’, the data on income collected has been smoothened out to monthly income as the unit of reference.

Again, the data on quantity bought and household consumer expenditure has been collected with a reference period of last ‘30 days’ for the broad groups of consumption items under food and drink, fuel and lighting, toiletries and detergents, and goods for personal care, transportation and miscellaneous. However, the two broad groups of consumption items clothing and health have been collected with a reference period of last ‘182.5 days or six months’ keeping in view the fact that these broad groups may not have household consumption expenditure within a reference period of last ‘30 days’. The household amount spent on the different items of expenditure has been calculated at the reported market price of each item of expenditure at the time of collection of household data. Since the reference periods used for collection of data pertaining to household consumer expenditure and
production expenditure for the different broad groups of items are different, the data collected has been smoothened out to monthly expenses as the unit of reference.

**Index of Livelihood Diversification**

Since the study attempts at analysing livelihood diversification, the measure of inverse of Herfindahl-Hirschman (HH) index of diversification of livelihood i.e. 1-HH is used to explore the same. Since HH index is a measure of concentration, its inverse is supposed to indicate the relative spread of activities in contributing to total income. The less the value of HH index the greater is the measure of diversification and vice versa. Livelihood diversification at the household and village level as mentioned above is hence measured by using the inverse of Herfindahl-Hirschman index in the form $1 - \sum A_{ij}^2$

Where,

$A_{ij} = \text{contribution of each livelihood activity } j \text{ to household } i\text{'s aggregate income}$

**Index of Living Standard**

To understand and assess the relationship between market participation and standard of living of the households, another index, index of living standard has been constructed from the index of dwelling standard and the index of consumption standard.

Index of Living Standard

$$= \frac{1}{2} (\text{Index of Dwelling Standard} + \text{Index of Consumption Standard})$$

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The index of dwelling standard constitutes the most visible variables, house type and place of defecation of the households across the six villages. In case of house type, three types of dwelling structures viz. traditional, modified traditional and pucca are identified and assigned ascending values of 1, 2 and 3 respectively and is divided by the highest value, i.e. '3'. Similarly, places of defecation too in case of the two different categories identified as open space and kutcha provision (which have been clubbed together) and sanitary latrine have been assigned ascending values of 1 and 2 respectively and is divided by the highest value '2'. The values thus derived in case of house type and place of defecation are then added at the household level and is divided by the summation of the highest values derived between the two across the 99 households, i.e. $1 + 1 = 2$.

For construction of the index of consumption standard, the most observable consumer durables possessed by the households are assigned values from 1 to 6⁵ (as six consumer durables are listed out in the questionnaire and details relating to possession of household consumer durables are limited to whether a household owns a consumer durable as listed in the questionnaire). These values for each household are then added together and the value thus found at the household level is divided by the highest aggregate value of the 99 households to attain the index of consumption standard.

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⁵ The assigned values of the consumer durables are in ascending order based on their perceived contribution in adding to living standard of the households
<table>
<thead>
<tr>
<th>Household Consumer Durable</th>
<th>Assigned Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cycle</td>
<td>1</td>
</tr>
<tr>
<td>Radio</td>
<td>2</td>
</tr>
<tr>
<td>TV</td>
<td>3</td>
</tr>
<tr>
<td>Scooter/Motor Cycle</td>
<td>4</td>
</tr>
<tr>
<td>Refrigerator</td>
<td>5</td>
</tr>
<tr>
<td>Car</td>
<td>6</td>
</tr>
</tbody>
</table>

Both index of dwelling and index of consumption standard thus derived are added and divided by the sum of the highest value of both the indices across the 99 households, i.e. $1 + 1 = 2$ inorder to derive the index of standard of living.

Keeping in view the objectives laid down, the extent of market penetration is investigated at the household level using index of market access applying non-linear censored (Tobit) regression model. To investigate the influence of market penetration on livelihood diversification of the tribal households, another non-linear censored (Tobit) regression model is constructed taking index of livelihood diversification as the dependent variable. Inorder to examine the role of market penetration in relation to the living standard of the households of the study area logit transformation of the dependent variable i.e. index of living standard of the households is carried out inorder to fit a linear regression model.
1.9 PLAN OF THE THESIS

The study based on the objectives cited is divided into seven chapters. The present chapter on introduction and methodology is followed by Chapter 2, which covers the important findings of the various studies in the arena of diversified livelihoods and market intrusion at national and international level. Chapter 3 delves into the conceptual and theoretical issues pertaining to the evolution of the concept of livelihood in the arena of development economics. Chapter 4 is a literature based analytical overview of the livelihood pattern of the tribal households in the state in the light of intruding markets. Chapter 5 of the study is an intensive analysis of the inputs derived from primary data throwing light on the relevance of market on livelihood issues in the two districts through empirical results. Chapter 6 tries looking into the role of traditional institutions among the Adis in the light of market forces and changing livelihoods. Chapter 7 comprises summary findings, conclusions and policy implications based on the findings of the study.
GLOSSARY OF TERMS USED

Diverse Portfolio (of livelihood) implies the different, multiple economic activities, both agricultural and non-agricultural, which a household adopts within a year as a strategy to add to income. Hence, diverse livelihood portfolio is the combination of activities that are followed in carrying out a livelihood strategy in response to the external socio-economic conditions.

Diversification is associated with the transformation of the economy’s sectoral composition and hence is the process by which a household or an economy tends to add on new activities. Diversification therefore implies the new activities added to both the farm and non-farm sectors which generate income in additional to that from the main household agricultural activities via the production of other agricultural and non-agricultural goods and services.

External Factors are those that relate to the legal, political, social, economic and institutional factors that link people and places into regional, national and global systems. For the present study, the term denotes the institutions like markets and non-state institutional arrangement like the customary land and property rights (on the natural resource base) which regulate the operation and therefore play a role in controlling the market.
**Household** in economic theories is meant to be an independent economic decision making unit which allocates factors and assets in production, consumption and exchange. The same definition has been retained for the present study.

**Impact** for the present study has been used to find whether the sample households have been able to generate sustainable income from diversified livelihoods via access to markets or whether households have been impoverished because of the same.

**Institutions** are the processes that lead to regularized patterns of decision-making and behaviour. The term ‘institutions’ has been used to convey the organisations which have a distinct identity in the study area, for e.g., the market, tribal social institutions and the customary right over land.

**Livelihood** according to Carney comprises the capabilities, assets- including both material and social resources and activities required for a means of living. The definition has been retained for the present study. Livelihood includes all the productive activities that produce goods and services which in turn earn income for the households.

**Market Forces** implies the forces of demand and supply.

**Market** is the key institution for carrying on the activities of exchange through a medium of exchange. Market is used as the institution which facilitates the transaction of goods and services.