

LIVELIHOOD ANALYSIS OF KATTUNAIKAN TRIBE OF WAYANAD

by

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DECLARATION

I hereby declare that this thesis entitled "**Livelihood Analysis of Kattunaikan Tribe of Wayanad**" is a bonafide record of research done by me during the course of research and that the thesis has not previously formed the basis for the award to me of any degree, diploma, fellowship or other similar title, of any other University or Society.

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CERTIFICATE

Certified that this thesis, entitled “**Livelihood Analysis of Kattunaikan Tribe of Wayanad**” is a record of research work done independently by **Smt. Sreeja.S (2009-11-127)** under my guidance and supervision and that it has not part of previously formed the basis for the award of any degree, diploma, fellowship or associateship to her.



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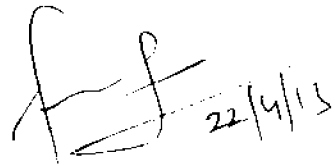
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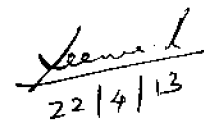
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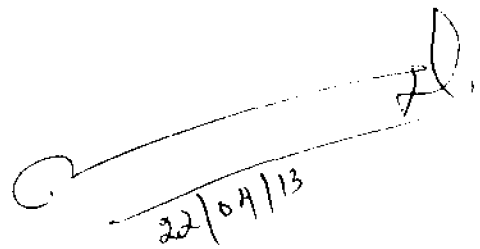
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Introduction

1. INTRODUCTION

Wayanad, a place of beauty, which can be called as nature's gift is the homeland of God's own people in Kerala, who make their livelihood by the close interference with nature. One paradox is that those who depend more on nature is economically the most backward ones. (WWF, 2012). Wayanad is one of the backward districts of Kerala. It is the district with the highest number of tribes people in Kerala. Tribes people are one among the backward groups of our country. A country can develop only with the upliftment of weaker sections of the society. The tribal sub plan has been the instrument in recent times for the development of scheduled tribes. From 6th Five year plan onwards, primary importance has been given to poverty alleviation among the scheduled tribes. Even now, tribes people remain as backward and are unaware of what is happening around this globalised world.

Livelihood analysis is that which comprises the capabilities, assets (including both material and social resources) and activities required for a means of living. The main objective of livelihood analysis is to understand and describe the means of living of people particularly the deprived classes. As a development tool, livelihood analysis offers intensive method of capturing the story of how people survive. A livelihood is sustainable when it can cope with and recover from stresses and shocks, maintain and improve its capabilities and assets while not undermining the natural resource base. Livelihood analysis can be very useful for showing how an intervention fits with the livelihood strategies such as agricultural intensification, livelihood diversification and migration etc. and how people's livelihoods are being enhanced or constrained. This is particularly true in the case of the tribes people who are the most neglected and subjugated class in rural hierarchy.

There are 573 Scheduled Tribes living in different parts of the country (Government of India, 2011). Many tribes have, or have had, their own language or dialect, their own traditions, customs, myths and ritual practices, deities, arts and performances. Many of these have changed, developed, or even deteriorated

over time, and have been highly influenced by their natural surroundings. In Kerala, the Scheduled Tribes constitute 1.10% of the total population of the State. The Government of India in 1976 have categorised 75 tribal groups: sections: communities as Primitive Tribal Groups (PTGs) based on the criteria of pre-agricultural level of technology, less than five per cent literacy and marginal or stagnant rate of growth. The PTGs in India are seen distributed in 15 States/Union Territories. There are five Primitive Tribal Groups (PTGs) in Kerala State viz. *Kattunaikan*, *Cholanaikan*, *Kurumpas*, *Kadars* and *Koragas*.

The PTG population in Kerala state is 24,285 (6% of total ST population) and the number of households is 6523. (KIRTADS, 2007). Among the primitive tribes people seen in Kerala, *Kattunaikans* are considered as one of the backward sections. The total population of *Kattunaikans* in Kerala is 18,576 (76.49 % of total PTG in Kerala) of which majority are in Wayanad (KIRTADS, 2007). *Kattunaikans* are seen in and in the vicinity of forests in the Wayand district.

The term “development” can be used for the process of allowing and encouraging people to meet their own aspirations (Reddy *et.al.*, 2010). In that way it is clear that India’s economic boom has largely bypassed tribes people, who constitute more than 8 percent of its 1.2 billion population, living in remote villages and eking out a living from farming, cattle rearing and collection and selling of forest produces. Any developmental intervention has to be assessed for its effect on quality of life and human well being. If we examine the quality of life and human well being among the general and outlier communities in Kerala, clear difference can be observed. Among the outlier communities, tribes people are perhaps the most disadvantaged ones. The development lag of tribal communities assumes great importance in the Kerala context as Kerala’s development experience owes much to the enlightened state policies based on equity and public action. Development will affect the future of tribes people and the choice of technology and policies will heavily influence the sustainability of tribal livelihood. Among the tribes people of Kerala, development is a complicated and controversial phenomenon. It should never take them away from their culture and make them unable to live. Since the tribes people, especially the

Kattunaikan community are very closely associated with nature, especially forest. their development can't be separated from sustainable development of forest based ecosystem. So, one cannot define development in some aspects only, rather, it should be viewed multi-dimensionally. The thesis attempts to bring out a detailed picture of *Kattunaikan* tribe, one of the most prominent primitive tribal group of Wayanad district.

1.1 Objectives of the study

1. To conduct livelihood analysis of the *Kattunaikan* tribe of Wayanad district.
2. To investigate the extent of deprivation of the *Kattunaikan* tribe.
3. To study the Social exclusion of the *Kattunaikan* tribe of Wayanad district.
4. To examine the Profile characteristics of the *Kattunaikan* tribe.
5. To assess the attitude of *Kattunaikan* tribes people towards developmental interventions.
6. To analyze the constraints experienced by *Kattunaikan* tribe in their livelihood security.

1.2 Scope of the study

Even though Kerala has achieved remarkable development in the field of social and educational sector, it can be observed that our state fell short to encompass erstwhile tribal communities in its development process. The livelihood analysis would be useful for the preparation of efficient, practical, and feasible action plan for the upliftment of primitive tribes people so as to make a socialistic pattern of society. The livelihood analysis indicates variation among the various classes with regard to many day to day phenomena. This can be taken into account in preparing the action plan. The action plan process can easily be broken down into various activities in a sequential way so as to achieve the ultimate objective of holistic agricultural and social development. Further the information on various sources of income can be used in selecting the beneficiaries for income augmenting rural, agricultural and animal husbandry schemes, while the expenditure pattern data can be effectively used to promote educational campaigns so as to make the tribes spend money in a profitable way.

The Livelihood capital index developed for the study will have immense practical use in the tribal development strategy on a sustainable basis. Besides this being one of the pioneering research studies on different dimensions of deprivation, the results will be of transcended importance in providing a conceptual basis for planning effective tribal development programmes.

The tribal deprivation and social exclusion is a multifaceted intricate phenomenon that necessitates meaningful interventions based on scientific livelihood analysis. Then only, developmental interventions will become meaningful and sustainable. The study would help to identify in detail how much the *Kattunaikan* tribe is excluded from the society, what is their attitude towards developmental interventions and what are the constraints they are facing in their livelihood security. Thus the study would serve useful guidelines for the planners and policy makers in framing new strategies for the sustainable development of *Kattunaikan* tribe of Wayanad district.

The scientific and statistical contributions of the study to the body of research methodology in social science in general and agricultural extension in particular will also be substantial. The delineation of various assets influencing the livelihood of tribes people will be of phenomenal utility to those interested in research in these lines.

1.3 Limitations of the study

Being a single investigator study, the researcher faced many limitations. Many different tribal hamlets were found scattered throughout the highlands of Wayanad. Most of these were not accessible by motorised vehicle and must be reached on foot.

Language was another limitation. The tribal language varied from Malayalam, Tamil, Telugu or Kannada and they also used their own colloquial languages.

The time factor, which is crucial for any study, was another limitation. Since respondents were illiterate and reluctant to share whatever quantitative information they knew, data collection was constrained to that extent. Since this

study was completely based on perception and expressed opinion of the respondents, it might not be fully free from personal bias and prejudices. However, utmost care was taken to avoid this and make the study as objective as possible.

1.5 Presentation of the study

The report of the study is presented in five chapters. The first chapter deals with introduction, wherein the statement of the problem, need, scope and limitations of the study are discussed. The second chapter covers the review of literature related to the present study. The third chapter depicts the methodology of the study, which encompasses the details on selection of the study area, sampling, data collection procedure, variables selection, empirical measures used, design of the research and the statistical tools used. In the fourth chapter the results in relation to the objectives with interpretation of the findings and discussion are presented. The fifth chapter summarizes the study highlighting the salient findings. The references, appendices and abstract of the thesis are given at the end.

Theoretical orientation

2. THEORITICAL ORIENTATION

The aim of this chapter is to portray in broad outlines the conceptual framework of references that has been used for the study. A review of the existing literature helps to develop a theoretical framework and to assess the nature and extent of research works, either directly or indirectly related to the field of study. This will provide proper orientation and theoretical basis for the empirical investigation. This will also assist in comparing one's research efforts with the related efforts of others in the same field.

The review has been presented under the following heads.

2.1. Concept and statistics of Primitive Tribes.

2.2. *Kattunaikan* tribe of Wayanad.

2.3. Livelihood analysis.

2.4. Extent of deprivation.

2.5. Social exclusion.

2.6. Profile characteristics of *Kattunaikan* tribes

2.7. Constraints experienced by the *Kattunaikan* tribe in their livelihood security

2.1. Concept and statistics of Primitive Tribes.

Verma (1996) defined tribe as a group of people speaking a common language, observing uniform rules of social organization and working together for common purpose such as trade, agriculture or welfare. Other typical characteristics include a common name of contiguous territory, a relatively uniform culture or way of life and a tradition of common descend.

According to Misra(2005), at the popular level the term tribe may mean anything associated with some kind of 'primitiveness', state of underdevelopment and so on.

Sinha and Sharma (1977) pointed out that in the identification of Primitive groups, states have generally followed three norms which include pre-agricultural level of technology, low level of literacy and a stagnant or diminishing population.

Sahu (1998) reported that at the end of Fifth Five Year Plan, 52 communities had been identified as primitive. In Sixth and Seventh plan their number came to 72 and 74 respectively. Now it has been raised to 75 communities.

John and Chathukulam (2006) pointed out that of the 35 scheduled tribal groups in Kerala, *Cholanaikans*, *Kattunaikans*, *Kurumbas*, *Kadars* and *Koragas* (constituting about 5.8 percent of the tribal population) are categorized as primitive groups based on factors like pre-agricultural stage of development, stagnant population and literacy.

KIRTADS (2007) reported that the PTG population in Kerala state is 24,285 (6 percent of total scheduled tribe population) and the number of households is 6523. Among the tribes seen in Wayanad district, Kattunaikan tribe is considered as one of the backward sections. Total population of *Kattunaikan* in Kerala is 18,576 (76.49 percent of total PTG in Kerala) of which majority are in Wayanad.

According to Bindu (2008), among the primitive tribes of Kerala, majority is *Kattunaikans* [71.17%] and is mainly in Wayanad district. The areas of habitats of the primitive tribes are Nilambur [*Cholanaikan and Kattunaikans*] Attappady [*Kurumbas*], Wayanad and Kozhikode [*Kattunaikans*], Trissoor [*Kadars*], and Kasaragod [*Koragas*].

Nazer (2003) found out that the problem of remoteness, ill health, absence of educational facilities, landless and houseless families, seasonal unemployment and poverty, lack of essential facilities such as power connection and isolation from the mainstream are still confronting the PTGs.

Most of the primitive tribal groups are small in number, have not attained any significant level of social and economic progress and generally inhabit remote localities having poor infrastructure and administrative support. Therefore, they become the most vulnerable sections among the scheduled tribes. (Government of India, 2008)

2.2. *Kattunaikan* tribe of Wayanad.

Thurston (1909) reported that the term *Kattunaikkan* has been derived from the word Kadu, meaning forest, and Naikkan meaning leader or headman

Nair (1911) stated that *Kattunaikans* are primitive race without a history and they are living in the mountain slopes with means of subsistence always available in the shape of edible roots. Some of them are also working for wages in the tea estates and earning their livelihood like other tribes people of Wayanad.

Shylajan (2009) reported that *Kattunaikkan* community is considered as descendants of a nomadic primitive hunter-gatherer group who roamed on the hilltops and caves. Traditionally they are honey collectors, food gatherers and hunters.

Louiz (1962) mentioned that in the ancient times *Kattunaikans* used bark of trees instead of clothes to cover their nakedness. They are tall, long armed and black skinned tribe with curly or wavy hair.

Nath (2007) reported that the *Kattunaikan* community is found in Wayanad, Kozhikode and Malappuram district. As their name denotes, they were kings of the jungle regions engaged in the collection and gathering of forest produces.

According to Thurston (1975), the synonyms of *Kattunaikan* are the Jenu Kuruba, Kattunayakan, Ten Kuruba, Ten Kurumban, Jenukoyyo, Sholanayakas and Naickan.

Shashi (1995) reported that *Kattunaikans* are seen in the deep forests of the high mountains of Kidagnad, Purakadi, Pulpalli, Noolpuzha, Maruthenkara, Tharuvana & Nallornadamsons of Vythiri taluk, Kattikulam, Vemom, Masalbeta (Begur range), Chempara peak and Nathapuram (Vanjimal, Kurumbranad). Mainly they are confined to high mountains and only a few of them have left their primitive clans and are seen in the developed areas. He also pointed out that *kattunaikans* have the institution of Muttam (head man) who is obeyed and respected. In their early society every settlement had a headman who exercised civil and criminal jurisdiction over the members of the settlement.

Amuthavalluvan and Devarapalli (2011) observed that the *Kattunaikans* are highly reserved.

Narayanan *et al.* (2011) reported that *Kattunaikan* is the dominant ethnic group that inhabits the Wayanad Wildlife Sanctuary. These people living in the vicinity of forests are depending on the sanctuary for meeting their requirements of food, medicine, minor forest produces, fire wood, and small timber needs for house construction. Food gathering, honey collection, hunting, fishing and trapping of birds and animals for meat are the traditional occupations of the *Kattunaikans*, which a few of them still pursue till date. Majority of the people depend on their traditional knowledge on medicinal plants for treating various ailments.

Balakrishnan *et al.* (2003) pointed out that *Kattunaikans* of Wayanad worship trees, rocks, sun, moon, local deities and the spirits of their ancestors. Rice and ragi are their staple cereals supplemented by edible wild roots and tubers.

Singh (2002) observed that *Kattunaikan* women take part in all economic activities except hunting. Collection of wild plant food and fishing are mainly done by women of all ages, except children. Women also contribute to their economy as many of them are bonded labourers. Although women have a role in their socio economic and religious spheres, they have an inferior status in their society.

Joseph and Antony (2012) reported that majority of them lives on vegetables, honey and fish. Some are employed by the forest department and the rest lead the life of food gatherers. Recently some have begun to raise cash crops.

2.3. Livelihood Analysis

Chambers and Conway (1992) reported that livelihood analysis is concerned with stability, crises and coping, relative income, expenditure, credit and debt. In reality, livelihood analyses multiple activities.

Livelihoods are the means people use to support themselves, to survive and to prosper. In other words it comprises the capabilities, assets and activities for a means of living (Chambers and Conway, 1991)

Frankenberger et al. (2000) pointed out that livelihood security refers to the ability of the household to meet its basic needs or to realize its basic rights. These needs include adequate food, health, shelter, minimal levels of income, basic education, and community participation

Aerthayil (2008) reported that globalization had a negative impact on tribes people in Kerala, the most backward and marginalized sections in the state, on their livelihood, including their employment and availability of essential commodities, and on the socio-cultural life, including their cultural and religious practices.

FAO (2008) reported that livelihood is closely linked to socio-economic status, a term often used to reflect an individual's access to resources such as food, potable water, health facilities, educational opportunities, and housing. Generally, five categories of assets are identified as contributing to livelihoods

Access to different levels and combination of asset has probably the major influence on choice of livelihood options (Scoones, 1998)

Sathyapalan (2005) observed there is always an interaction between the environment in which the community lives and their practices that led to sustain their livelihood.

According to Ramakrishnan (1993), sustainable development aims at sustainable livelihoods for the weaker and vulnerable sections of the society. He also emphasized the need for efficiency in resources with equity and social justice. This implies strong community participation.

Rajendralal (2005) revealed that development will affect the future of tribal people and the choice of technology and policies will heavily influence the sustainability of tribal livelihood. Hence he suggested that the available technology options developed by scientists and innovative environmentalists should be carefully analysed and their economic, social and ecological impacts should be described.

Carney (1998) reported that a livelihood is sustainable when it can cope with and recover from stresses and shocks and maintain or enhance its capabilities and assets both now and in the future, while not undermining the natural resource base.

Gupta (2005) pointed out that majority of the primitive tribes lives in forests and is exclusively depended on forests for their livelihood by practicing hunting

and gathering. With their primitive technology, limited skills, and ritual practices, their entire style of life revolves round forests. Shifting cultivation is a stage of gradation from food gathering and hunting to settled agriculture.

Singh (2002) reported that labour is the primary means of livelihood and food gathering is the secondary source of the Kattunaikan. They are in different stages of development and based on their source of livelihood, they can be classified into four categories as food gatherers, and landless labourers, temporary cultivators, cultivators who own fertile land and employs as mahouts in forest departments and Devaswoms.

Shashi (1995) reported that except the limited number of Kattunaikans employed by the forest department as mahouts and watchers, the rest lead the life of food gatherers. Those in the forest plantations raise cash crops and this aptitude for cultivation is very recent development. A few have entered service as plantation and farm labourers. Limited groups, that are settled, rear and vend poultry, pigs and goats to supplement their income.

Louis (1962) pointed out that *Kattunaikans* mainly depend on forest for their livelihood. Their name 'Tenu Kurumans' indicate the habit of collecting honey (Mathur, 1977)

The Hindu (2010) reported that the backward tribes, such as *Kattunaika*, *Paniya* and *Adiya* depend almost entirely on agriculture labour and non-agriculture labour.

2.4 Extent of Deprivation

Bossert *et.al* (2005) pointed out two determinants of one is the lack of identification with other members of society and the other is the aggregate

alienation experienced by an agent with respect to those with fewer functioning failures.

Rahman and Aktar (2010) reported that being trapped in low-wage low-skilled work with little job security, inadequate food and shelter, deprivations of basic education and health care services the poor people are extremely vulnerable to ill health, economic dislocation and natural disasters.

Tribal households suffer higher deprivation than the non tribal households (Meenakshi and Ray (2002), Ray and Lancaster (2005), Misra and Ray.2010)

According to Joseph (2004) a careful study of the history of the tribal population shows that the socio-economic condition of the tribes in the primitive age was comparatively better than that of today. Gradually they were forced out of their profession and their illiteracy, ignorance and social backwardness encouraged the other classes to exploit them and they were ultimately reduced to a status of merely landless labourers.

Sen (2005) opined that infrastructure upgradation is needed for the elimination of deprivation in basic necessities being such as housing quality, access to drinking water, good sanitation and electricity lighting.

According to Government of Kerala (2011), 24.2 percent of tribes fall Below Poverty Line whereas the state average is only 9.4 percent. The incidence of poverty among the scheduled tribes in Kerala constitutes 3 percent of the total BPL population in Kerala, while their total population in the state is only 1.14 percent. The poverty among tribes people is about 3 times that of general population.

According to Mitra and Singh (2006), the tribes people reside in the remote interiors which are inaccessible and therefore underdeveloped, also they

live in small habitations without basic infrastructures like transportation and communication. Besides they have their own structural impediments which make them deprived and excluded with regard to almost everything that a contemporary mainstream society has access to, including education.

Samu (2008) pointed out that large areas of the forest were destroyed by the timber and land mafia who snatched land of tribes people. He also reported that the tribes people are deprived of accessibility to land since they do not have documents to prove ownership of the land on which they had been living for generations.

Government of Kerala (2009) reported that the tribes people are facing a major issue in accessibility of facilities since majority of the settlements are located in geographically challenged areas. The survey reveals that Government offices (Panchayat office, KSEB etc.) are mostly in the range of 5-10 Km and that most of the nearest private and government specialty hospitals are at least 20 Kms away. The study also reported that 75 per cent of the tribal households reveals that the nearest college/ institution of higher education was at least more than 10 Kms away and therefore 60 per cent of the tribal households had to travel at least 20 Kms to reach there.

Kakkoth (2005) found out *Kattunaikans* do not have health care facilities within 3kms. Only 1.33 per cent of the Primitive tribal groups have Primary Health Centers within their vicinity.

Shylajan (2009) reported that *Kattunaikans* are deprived of land.

2.5. Social Exclusion

Sen (1985) reported that social exclusion is a multi-dimensional concept that covers economic, social and political aspects and it deals with the failure to

attain adequate levels of various functioning that are deemed valuable in the respective society.

Social exclusion reflects the multiple and overlapping nature of the disadvantages experienced by certain groups and categories of the population, with social identity as the central axis of their exclusion (Kabeer, 2006)

According to Bossert et.al (2005), social exclusion manifests itself in the persistent lack of an individual's access to functioning as compared to other members of the society. He also pointed out that an individual can become socially excluded if the condition of deprivation is persistent or worsens over time.

Relative poverty which excludes people from basic amenities such as housing, water and the like also leads to social exclusion. (Maner et.al.,2007)

Jenkins and Barr (2006) pointed out that among the vulnerable classes of society, the structural causes of social exclusion, such as continued high level of poverty remain as a significant constraint.

The value-addedness of the social exclusion approach is its emphasis on the role of relational features in deprivation. (Sen, 2000).

Tribes people are among the poorest, most deprived population group in the country. This is associated with the social exclusion aspects stemming from factors such as traditional and cultural practices which result in the tribes being treated as the 'other', isolation from mainstream and group identity related behaviour, apart from the income poverty which is but one element (Thorat, 2008, de Haan, 2007, Das, et al., 2010, Gaiha, et al., 2008).

2.6. Profile characteristics of *Kattunaikan* tribes

1. Age

According to Dubey(1977) age played a significant role in the ordinary tribal life

The relationship between the age of the tribal respondent and his technological gap was reported by Tripathi (1972) and Sadamate (1978).

Shincy (2012) in her study on livelihood analysis of Irula tribe of Attappady reported no significant relationship between age and livelihood.

2. Land holding

Shylajan (2009) found out that land distribution pattern of Kattunaikan is such that 82.56% families are having less than or equal to 50 cents of land in their possession. He also found out that 65.13 per cent of the families fall in the category with less than or equal to 25 cents.

According to Mathur (1977) land is sometimes linked with the perpetuation of groups of tribal people with their autonomy, solidarity and cohesion. Land is useful to them in several ways such as a source of food gathering and hunting and also as a place to live in and work.

3. Family size

The size of family is also one of the indicators of development. Among tribes people smaller sized families are most common (Nazer, 2003)

Indira (1993) reported that unlike other states, in Kerala small family norm has become very popular probably because of the availability of medical facilities, educational facilities and the constant exposure of public to small family norm through various media. However such drastic changes in the family

size cannot be expected among the tribal population residing in the remote parts of the state.

According NSSO (62nd round) the average household size in Kerala is 4.3.

Rajendralal (2005) reported that while considering certain major communities, the average family size in respect of the Paniyans workout to 4.5, Mala Arayans 5.5, Irulas 4.42 and Kurichians 5.45

4. Political orientation

Chaudhuri and Patnaik (2008) explored the dichotomy that exists between the mainstream of Indian society and the tribal cultures and revealed that tribals are both victims and instruments in the social and political process of nation building.

Karcem and Jayaramaiah(1998) observed no significant relationship between political participation and extent of participation in development programme.

Shincy (2012) found that majority of the tribes people (65%) belonged to medium level of political orientation followed by high level (22.5%).

5. Value orientation

Parsons and Shills (1965) defined value orientation as those aspects of the actor's orientation which commits him to the observance of certain norms, standards, criteria for selection whenever he is in a contingent situation which allow him to make a choice.

Nath(2007) revealed that 40 percent of the tribal respondents were in high value orientation category and 48 percent in medium category.

Barakataky and Gohain (1970) reported that due to the presence of certain institutional behaviour like religious belief, customs and practices, the pace of expected development was not up to the mark among the tribals.

Goswami and Saika (1970) reported that value orientation of tribals is having a positive significant relationship with modern development.

Prakash (1980) also reported positively significant relationship of value orientation with agricultural development of tribals.

Chackrabarty *et al.*, (1989) stated that the absence of attitudinal change, attachment of tribals towards traditional heritage, culture and scenic environment in which they live were important aspects of social life that failed to influence the tribal farmer in generating increased level of employment.

Prasad (1988) opined that to revitalization of the tribes people socio-economically and psychologically is a challenging task. Living for centuries in hilly and forested ecology, they are adjusted to the tradition-oriented style of life.

6. Change resistance

Amuuthavalluvan and Devarapally (2011) reported that Kattunaikans are in a changing situation and they are gradually accepting modern practices including health care systems subjected to their economic conditions

7. Modernisation

Literally, the word 'Modernisation' refers to anything which has recently more or less replaced something which in the past was accepted way of doing. (Inkless and Smith, 1974).

Psychological modernity leads to modern behaviour which contributes to modernization of society (Lerner, 1958, Kahl, 1968)

Sreevalsan (1995) defined modernization as the diffusion and replacement of new ideas over a period of time in a social system leading to differentiated and flexible social structures and whose people become available for new patterns of behaviour.

Due to human invasion, modernization and habitat destruction many of valuable plant species are vanishing from the face of the earth. As the tribal communities are getting modernized there is an imminent danger in losing their traditional medicinal knowledge. Due to human invasion, modernization and habitat destruction many of valuable plant species are vanishing from the face of the earth. (Joseph and Antony, 2012)

Sreevalsan (1995) reported that education, attitude, knowledge, economic motivation and social participation enhance modernization.

8. Alcoholism

Loughhead et. Al. (2001) reported that to ensure all round development of the disadvantaged, reforming social deviants is essential with proper restriction of the production of alcohol and distribution of drugs in India, plus supporting rehabilitation centres with the aid of NGO's and others.

9. Attitude towards developmental interventions

Allport (1935) defined attitude as and or neural state of readiness organized through experiences exerting a directive or dynamic influence upon the individuals response to all objects and situations with which it is related.

Thurstone (1946) defined attitude as the degree of positive or negative effect associated with some psychological object towards which people can differ in varying degrees.

Kuppuswamy(1964) stated that attitudes are learned in the course of life experience which make the individual behave in characteristic ways towards persons, objects, or issues to which they get related.

Rai (1965) reported that adopters of new ideas had favourable attitude towards government programmes.

Sharma (1972) defined attitude as a personal disposition which implies an individual to react to some object or situation.

Nadkarni (2001) stated that attempts to protect forest areas from human intervention by coercion have often led to hostile attitudes of local people towards wildlife management and sometimes to open conflict.

D'Souza (1990) conducted a study on the effects of planned interventions among tribes people from 1961 to 1981 and it was reported that twenty years of interventions has not made any significant impact in improving the conditions of the tribes people.

Singh (1994) reported that development implies creating conditions in a given society for wholesome living of its members. Logically, it stands for the rise in the standard of living of the weaker sections, greater participation in the affairs of the larger society and the state, freedom from poverty and unconstrained development of individual's among the various constituents of the social fabric he stated.

Sahu (2001) reported that the planners and implementers must have the ethnographic knowledge of the Indian tribes for the proper implementation of development programmes.

According to Joseph (2004) in Kerala there have been many government and non-government organisations which were set up with a view to tribal upliftment. They differ widely in programmes, purpose, duration, outlay etc. Many of these organisations have been complete failures for various reasons. Impact was minimal due to erroneous development paradigms, policies and perspectives.

Shincy (2012) found out 56.7 per cent of the tribes people had a favourable disposition towards developmental interventions and only 43.3 per cent of them had unfavourable attitude

2.7. Constraints experienced in livelihood security

Gogoi and Talukdar (1989) defined constraints as those factors which have repressive effects on a desired and or purposive action.

Kakkoth (2005) in her study found out that Kattunaikans face the problem of seasonal unemployment and the tribal cooperative societies has not yet taken any ameliorative measures towards the problem. Analyses revealed that Changes in the ecosystem, economic activities and food habits, lack of job opportunities, deforestation, non-tribal influx, alien-culture contact and the like are the main reason for the increase in the morbidity rate among the primitive tribal groups.

Indira (1993) reported that the tribal people of Kerala are not able to make both ends meet with what they earn and indebtedness among them is a chronic malady.

Sushama (2006) et al. reported that financial constraint was the major problem faced by the tribal farmers. Need based financial assistance have to be extended to the tribal farmers for productive purposes by the Government.

Shylajan and Mythili (2003) reported that there has been considerable fluctuation in the quantity of non timber forest produce collected over time. This may be adversely affect the livelihood of tribes people.

Mathur (1977) reported that the problem of land alienation among the tribal people is not only related to the economic but also to the socio-political and moral systems of the country. Though majority of the tribes were agriculturists, the alienation of land in most cases reduced them to the status of landless labourers.

Methodology

3. METHODOLOGY

This chapter deals with the description of the methods and procedures adopted in conducting the present research study. It is furnished in this chapter under the following subheadings.

3.1 Locale of the study

3.2 Selection of the sample

3.3 Design of the study

3.4 Operationalisation and measurement of variables

3.5 Tools and techniques of data collection

3.6 Statistical tools used

3.1 Locale of the study

The study was conducted in Wayanad district of Kerala. One important characteristic feature of this district is the large tribal population, consisting mainly of *Paniyan*, *Adiyan*, *Kattunaikan*, *Kurichian* and *Kuruman*. Wayanad district stands first in the case of tribal population i.e. 37.36% of the tribal population in Kerala (KIRTADS, 2007). *Kattunaikkans* are the numerically dominating community amongst the Primitive Tribes people of Kerala. They are distributed in Wayanad, Kozhikode, Malappuram, and Palakkad, districts. Wayanad district has been purposively selected for conducting the study because this is the district in Kerala having the highest concentration (85%) of tribal settlements of *Kattunaikkans*. (Kakkoth, 2005)

Brief description of the district

Wayanad, the green paradise, lies at a height of 700-2100 m. above mean sea level, on the north-eastern part of the State. Wayanad district has an area of 2131 sq. km, (Government of India, 2007) which account for 5.48 percent of the

state total. Being a hilly district, vast area of Wayanad district consists of forests (36.48%) and 51.04 percent of the total area of the district are put to cultivation. The forest area of this region also has high biodiversity values (Sathyapalan 2002). Wayanad district has a total population of 816558 with a male and female population of 401314 and 415244 respectively. Sex ratio of the district is 1035 (Government of India, 2011). Wayanad district was carved out from the parts of Kozhikode and Kannur districts and came into being on 1st November 1980. It lies between 11°26' 28" and 11° 58' 22" and is bounded on the north by the Viraipeta taluk of Kodagu district, on the east Heggada devankote and Gundlupet taluks of Mysore districts of Karnataka State and the Gudalur taluk of Nilgiri district of Tamilnadu, on the south by Eranad of Malappuram district and Kozhikode taluk of kozhikode district and in the west by Koyilandy and Vatakara taluks of Kozhikode district and Tellichery taluk of Kannur district. Its geographical position is peculiar and unique. The difference in altitudes of each locality within the district presents a variation of climatic conditions. As mentioned earlier, the population of aborigine people consisting of *Paniyan*, *Adiyan*, *Kattunaikan*, *Kurichian* and *Kuruman* is very high in this district with 37.36 per cent of the tribal population in Kerala. Wayanad is the homeland of the most primitive and smallest of the tribal communities on the Indian mainland (Sushama et.al, 2006).

3.2 Selection of the sample

Kalpetta, Mananthavady and Sulthan Bathery are the only three development blocks of Wayanad district. The study was conducted in all the three development blocks. One *Kattunaikan* settlement from Kalpetta block, two settlements from Mananthavadi block and three settlements from Sulthan Bathery block had been selected for the study. (The number of settlement was selected in accordance with the *Kattunaikan* population in these blocks. i.e. Sulthan Bathery block has the highest population of *Kattunaikan* tribes, followed by Mananthavadi, and comparatively less population in Kalpetta block). Thus Idinjakolly settlement

FIG. 1 MAP SHOWING LOCALE OF THE STUDY



from Kalpetta block, Begoor and Thirunelli settlements and from Mananthavady block, Ponkuzhi, Chukalikuni, and Anakamp settlements from Sulthan batheri block were selected for the study. From each settlement, 20 family heads were randomly selected. Thus a total of 120 *Kattunaikan* family heads were the respondents.

3.3 Design of the study

After careful examination of the available literature and keeping the objectives in view, majority of the variables were selected for the present study. Most of the selected variables were ex-post facto in nature. Hence an ex-post facto research design was used for the present study.

According to Singh (2006), an ex-post facto research is one in which the investigators attempt to trace an effect that has already occurred to its probable causes. It is a systematic empirical enquiry in which the scientist does not have direct control over the independent variables. (Kerlinger, 1973).

3.4 Operationalisation and measurement of variables

Based on the objectives, review of literature, discussions with experts and observations made by the researchers, the following dependent and independent variables were selected for the study.

Dependent variables

1. Livelihood capital
2. Extent of deprivation
3. Social exclusion

Independent variables

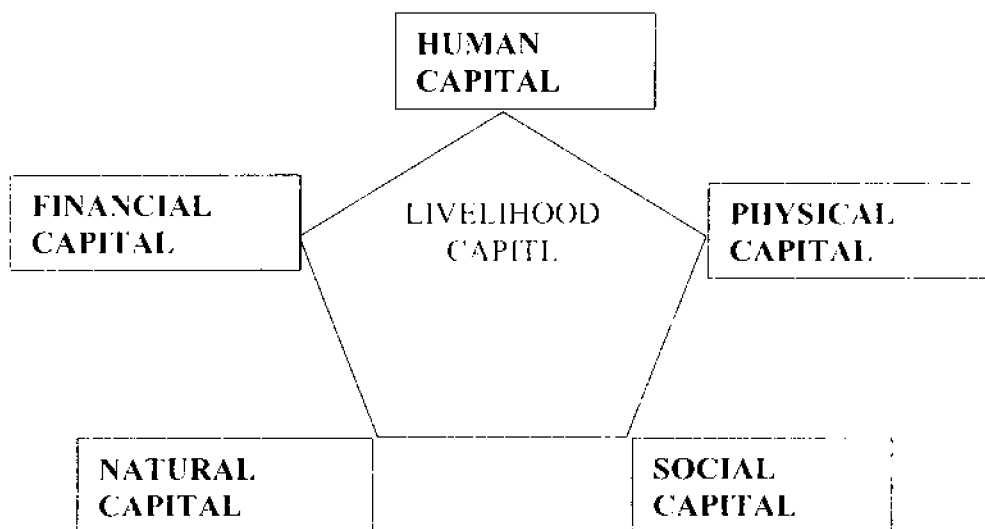
1. Age
2. Land holding
3. Family size
4. Value orientation
5. Political orientation.
6. Change resistance

7. Modernisation
8. Alcoholism
9. Attitude of *kattunaikkan* tribes towards developmental interventions

3.4.1. Livelihood analysis

A livelihood was operationally defined as those comprising the capabilities, assets and activities required for decent living. Capabilities mean a set of alternative beings and doings that a person can achieve with his/her economic, social, and personal characteristics. Assets comprise material, social and financial resources including enough access to these resources.

In this study the Sustainable Livelihood Framework of FAO (2008) was used. The five capital components included under the sustainable livelihood framework of FAO were Human capital, Physical capital, Financial capital, Social capital and Natural capital. It can be diagrammatically represented as follows.



Under each capital a number of sub variables were identified. Along with that, the variables suggested by Sabaratnam (2002) for livelihood analysis such as food habits, livestock possession, material possession and expenditure pattern were included under different capitals to enrich the present study.

Capital Components of Livelihood and their sub variables

Capital components	Sub variables
Human capital	Education; Hygiene; Addictive behavior; Health care seeking behavior; Food habits
Physical capital	Type of house; Condition of house; Material possession; Livestock possession; Toilet facilities; Electricity connectivity; Access to safe drinking water
Social capital	Social participation; Social relationship
Natural capital	Land holding; Gross farm area; Utilisation of Natural resources
Financial capital	Income; Expenditure pattern; Savings; Debts

The operational definitions and measurement techniques of each of the above mentioned sub variables of livelihood capitals are depicted below under different sub heads.

3.4.1.1. Human capital

Human capital was operationally defined as the status in the major human development components such as health and hygiene, education and nutrition of the tribes people that enable them to pursue different livelihood strategies and thereby achieve livelihood objectives. The sub variables measured to analyse Human capital includes Education, Hygiene, Addictive behavior, Health care seeking behavior and Food habits.

3.4.1.1.1. Education

Operationally defined as the ability of respondents to read or write and the number of schooling years completed by the respondents at the time of interview.

The level of education was measured by using the scale developed for the study. The scoring procedure used was as follows.

Category	Score
Illiterate	1
Can read only	2
Can read and write	3
Primary school	4
Middle school	7
High school	10
Higher secondary school	12
Graduation and above	15
Professional degree	16

3.4.1.1.2. Hygiene

It was operationalised as the plight or physical condition of the respondents due to practices related to health and cleanliness.

Under hygiene, four dimensions such as brushing teeth, taking bath, washing clothes and cleanliness of the surroundings were considered. The frequency of brushing teeth, taking bath and washing of cloths were measured by directly asking the respondents, while cleanliness of the surroundings was assessed by direct observation. The scores obtained in each dimension was summed up to get the total score in this variable. The possible score ranges from 0-21.

3.4.1.1.3. Addictive behaviour

Addictive behaviour was operationally defined as the extent to which a respondent is addicted to unhealthy habits of smoking, chewing, consumption of alcohol and use of drugs. It was obtained by directly asking the respondents and modifying the responses by cross checking the same with their fellow beings. The scores assigned were as follows. The score ranged from 4-12.

Habits	Frequency		
	Regularly	Occasionally	Never
	(1)	(2)	(3)
Smoking			
Use of alcohol			
Use of narcotics/Drugs			
Betel chewing with tobacco/ chewing of panmasala			

The score of an individual respondent is the sum of the scores of all the items. A score of 4 indicates high addiction and 12 indicates low addiction.

3.4.1.1.4. Healthcare seeking behaviour

It was operationally defined as the personal actions resorted to promote optimal wellness, recovery, and rehabilitation. This was measured in terms of consulting medical experts by the respondents, for their illness as follows.

Response item	Score
Usually visit Hospitals/ Health care centers before the illness become very severe.	2
Usually visit Health care centers when illness become serious/ chronic.	1

The possible score ranged from 1-2.

3.4.1.1.5. Food Habits

It was operationally defined as the frequency with which a respondent consumes food items with the required nutrients which adds to a healthy life. The frequency of intake of different food items such as cereals, millets, pulses, tuber crops, vegetables including leafy vegetables, fruits, honey, milk, egg, meat and

fish were collected by directly asking the respondents, and the responses were recorded on 10-point scale, as shown below.

Periodicity of intake									
Thrice in a day	Twice in a day	Once in a day	Once in two days	Once in three days	Once in a week	Fort nightly	Once in a month	Occasionally	Never

After collecting this data, the food items consumed by the respondents containing Carbohydrates, Proteins, and Vitamins and minerals were grouped separately. The frequency of consumption of carbohydrate food items, protein food items and food items containing vitamins and minerals were found out irrespective of the type of food consumed under each category. This was measured by using the following scale.

Type of food	Periodicity of intake									
	Thrice a day	Twice a day	Once in a day	Once in two days	Once in three days	Once in a week	Fort nightly	Once in a month	Occasionally	Never
	512	256	128	64	32	16	8	4	2	1
Carbohydrates										
Proteins										
Vitamins & Minerals										

Depending on the frequency of intake of each category of food, scores were assigned from 512 to 1. The scores on the nutrient categories were added up to get the food intake score of a respondent. For example, a person consuming all the three categories of food thrice a day would get a score of 1536 (i.e. 512 x 3). The score ranged from 3-1536. Using this data, the *Diet Balance Index* was computed.

Diet Balance Index

Diet Balance Index (DBI) was developed from the score of food habits to comprehensively assess the food consumption pattern and thereby classify the respondents based on their food intake. It was calculated using the formula.

$$(DBI) - 100 = \frac{(\text{Maximum attainable value} - \text{observed value})}{\text{Range}} \times 100$$

Its value ranged from 0-100. Zero indicates extreme diet imbalance i.e., the most unbalanced diet. The index of 100 indicates that the diet balance is maximum as compared to the maximum observed in the data set.

3.4.1.2. Physical capital

Physical capital was operationally defined as the man made assets, the basic infrastructure and producer goods needed to support livelihoods. Asset means a valuable item that is owned. Infrastructure is the basic physical and organizational structures or facilities essential to enable, sustain, or enhance societal living conditions. Producer goods are the tools and equipments that people use to function more productively. The physical resources such as Type of house, Condition of the house, Livestock possession, Material possession, Access to safe drinking water, Toilet facility and Electric connectivity were considered for measuring Physical capital.

3.4.1.2.1 Type of house

Type of the house means the material by which the house of the respondent was made. The scoring procedure was as follows.

Type of house	Score
Thatched	1
Tiled	2
Asbestos	3
Concrete	4

The score ranged from 1-4.

3.4.1.2.2 Condition of the house

The physical condition of the house was assessed by direct observation.

The scoring procedure was as follows.

Condition of the house	Score
Good	3
Average	2
Poor	1

The score ranged from 1-3.

3.4.1.2.3 Livestock possession

Livestock possession was referred to as the number of animals possessed by the family of respondent. The methodology followed by Jayawardana (2007) was used with slight modification. Here the value of livestock items owned by them was calculated and the total value of all the livestock was found, which was then categorised as follows.

Sl. No	Value(Rs.)	Score
1	0	1
2	Upto 500	2
3	501-1000	3
4	1001-5000	4
5	5001-10000	5
6	10001-20000	6
7	20001 and above	7

Score ranged from 1-7.

3.4.1.2.4 Material possession

Material possession was referred to as the productive and non productive materials possessed by the family of a respondent. . The value of each material was calculated and the total value of all of them was added up. Then the respondents were categorised into the following 6 classes, based on the range of values of materials possessed.

Sl. No	Value(Rs.)	Score
1	<500	1
2	501-1000	2
3	1001-5000	3
4	5001-10000	4
5	10001-25000	5
6	>25000	6

The score ranged from 1-6

3.4.1.2.5. Access to safe drinking water

This variable was operationally defined as the access of respondents to unpolluted source of water for daily use. It was measured as the distance from home of the tribes person to unpolluted source of water for daily use. The following measurement procedure was adopted for the study.

Distance from home to the source	Score
House premises	6
Upto 500m	5
500m-1Km	4
1-2Km	3
2-4Km	2
>4km	1

The score ranged from 1-6

3.4.1.2.6. Toilet facility

This was measured by directly asking the respondent whether they possess toilet facilities in their house or not. The responses were collected on a two point scale of Yes and No with scores 2 and 1 respectively.

3.4.1.2.7 Electric connectivity

This was measured by directly asking the respondents about their possession of electricity connection in their house. The responses were collected on a two point scale of Yes and No with scores 2 and 1 respectively.

3.4.1.3 Social capital

Social capital was operationalised as the social resources that contribute to the livelihood of the tribes people. It consists of the extent of social participation and inter relationship that bind together the members of the tribal society enabling cooperative action.

This variable was measured taking into account two sub components viz. social participation and social relationship (relationship with members outside the family).

3.4.1.3.1 Social participation

Social participation refers to the extent and nature of participation of tribes people in various activities of social organisations. This was measured by asking the respondents about their memberships in organization and frequency of attending meetings. The procedure followed by Rajendralal (2005) was used with slight modification as follows.

Sl. No	Organisation / Institution	Membership in organization			How often do you attend the meeting		
		No membership (1)	Member (2)	Office bearer (3)	Regularly (3)	Occasionally (2)	Never (1)
1	Grama panchayat						
2	Gramasabha						
3	Ooru Vikasana Samathi						
4	Oorukkoottam						
5	SHGs						
6	Co-operatives						
7	Tribal organisations						
8	Others (specify)						

The scores obtained by a respondent on the above two dimensions were multiplied for each organization and the obtained scores of the respondent for all the organizations were added up to get his social participation score. The possible score ranged from 8- 72.

3.4.1.3.2 Social Relationship

This variable was measured using the type of the relationship maintained by a respondent with neighbours, peer groups and relatives. The following scoring procedure was adopted for this study.

Relationship	Relationship status		
	Good (3)	Average (2)	Poor (1)
Neighbours			
Friends			
Relatives			

The score of an individual respondent is the sum of scores of all the items. The possible score ranged from 3-9.

3.4.1.4 Natural capital

Natural capital was operationally defined as the natural resource stocks from which resource flows and services useful for livelihoods are derived. Natural capital component was found out by taking into consideration three sub components such as land holding, gross cropped area and utilisation of natural resources.

3.4.1.4.1 Land holding

It refers to the extent of land possessed by a respondent at the time of investigation. The scoring pattern followed is given below.

Land Holding	Score
No land	1
5-10 cents	2
11-25 cents	3
26-50 cents	4
51-100 cents	5
101-250 cents	6
>250 cents	7

The possible score ranged from 1-7.

3.4.1.4.2 Gross Cropped Area

It was operationalised as the sum of the area occupied by each of crop under cultivation. This was measured by collecting the area under cultivation of each crop based on its standard spacing irrespective of mono cropping or mixed cropping. The scoring procedure was as follows.

Name of the crop	Area/Number of plants

The area under each crop was added up to get the gross cropped area.

3.4.1.4.3 Utilisation of Natural resources

It was operationally defined as the utilisation of the identified natural resources by the tribes people to fulfil their livelihood requirements. The scoring procedure followed was given below.

Sourcing activity	Always (3)	Sometimes (2)	Never (1)
Hunting			
Cultivation			
Honey collection			
Collection of Minor Forest Produce			
Fuel wood collection			

The scores obtained by the respondent in all the items were added up to get his final score. The score ranged from 5-15.

3.4.1.5 Financial capital

Financial capital was operationally defined as the financial resources (mostly cash and equivalent) that people use to achieve their livelihood objectives. It is an important livelihood asset critical to the successful utilisation of other factors/assets. Financial capital was measured by taking into account the income, expenditure, savings and debts of the respondents.

3.4.1.5.1 Annual family income

The annual income of the family was operationalised as the yearly average income of the family of the respondent in cash. Different sources of income of the family were elicited from the respondents and the average monthly

income of the family was calculated. This was multiplied with 12 to obtain the annual family income of the respondents.

3.4.1.5.2 Expenditure pattern

Expenditure pattern was operationalised as the money spent annually for various items like food, cloth, education, health, ceremonies, alcohol consumption livestock management, cultivation, travelling, fuel, recreation and the like. Based on the responses of the tribes people and careful observation and probing by the investigator, the expenses under each item was worked out for one month.

Items	Total expenses per month
Food	
Cloth	
Electricity	
Medical expenses	
Education	
Cultivation	
Alcohol	
Ceremonies	
Recreation	
Travelling expenses	
Fuel	
Others	

This was then added up and multiplied with 12 to get the annual expenditure of the family of the respondent.

3.4.1.5.3 Savings

It was operationalised as the amount saved in the form of cash or any other means at the time of interview. This was obtained by asking the respondent,

the unutilised amount in hand, amount available in banks, post offices and other agencies including the cost of ornaments they possessed at the time of the interview.

3.4.1.5.4 Debt

Debt means the existing liabilities in the form of cash from different formal and informal agencies/ person. It was operationalised as the total debt in terms of money the respondent owed, at the time of survey to various money lending sources. This was obtained by directly asking the respondent, the debt owed by him to any of the sources

Measurement of Livelihood Capital Index

Based on the five livelihood capital components described above viz Human capital, Physical capital, Social capital, Natural capital and Financial capital, their indices were derived. It was necessary to compute different component capital indices for the measurement of Livelihood Capital Index. The procedure followed for computing these indices are detailed below.

In order to compute the component capital indices, the components under each capital were standardized. Except financial capital, the component capitals were standardized using the following formula.

$$y_i = \frac{y_{i\max} - y_i}{y_{i\max} - y_{i\min}} ;$$

where,

y_i = observation for the i^{th} variable of the component capital
($i = 1, 2, \dots, n$.)

$y_{i\max}$ = maximum value that the variable y_i can attain.

$y_{i\min}$ = minimum value that the variable y_i can attain.

Standardisation of financial capital components was done in a different way considering the limitations in fixing maximum attainable values for the financial capital components, unlike the other capital components.

For this, the financial capital was taken as the standardized value of the actual annual family income of the respondent, which is given by the following formula:

$$\text{Financial capital, } y = \frac{Y - Y_d}{Y_{\min}} \times 100$$

Where,

y = actual annual family income (y) of the respondent
(measured as mentioned in part 3.4.1.5.1)

y_d = annual interest on total debt the respondent is liable to pay
(The annual liability of the debt is considered as the interest incurred to the family on account of the 'debt as on the date of interview', and was computed as follows,

y_d = Interest per year for the debt he incurred, at the rate of 20%, if the credit source is institutional and 10% otherwise).

y_{\min} = minimum income required for meeting the essential needs of the family

(The poverty line of a rural person, as fixed by the government agencies is considered as the standard income level for this purpose. Thus, the poverty line fixed for 2004, deflated (using consumer price index) to the 2010 prices is computed as Rs.776.65 per standard person per month. It was converted to annual amount by multiplying with 12. The amount required for the whole family would be the product of this annual amount and the standard family size. The standard family size was taken as the number of adult family members plus half the number of children)

After standardization, the indices were calculated using the following formula.

$$y' = 100 - \left[1/n \cdot \sum_1^n y_i \times 100 \right]$$

where 'n' is the number of sub components under each capital.

y_i is the standardized value of each capital.

By applying the above formula, the different capital indices were calculated as follows.

$$\text{Physical capital index, } y^1 = 100 - \left[\frac{1}{7} \sum_{i=1}^7 y_i^1 \times 100 \right]$$

$$\text{Human capital index, } y^2 = 100 - \left[\frac{1}{5} \sum_{i=1}^5 y_i^2 \times 100 \right]$$

$$\text{Social capital index, } y^3 = 100 - \left[\frac{1}{2} \sum_{i=1}^2 y_i^3 \times 100 \right]$$

$$\text{Natural capital index, } y^4 = 100 - \left[\frac{1}{3} \sum_{i=1}^3 y_i^4 \times 100 \right]$$

$$\text{Financial capital index, } y^5 = 100 - \left[\frac{1}{3} \sum_{i=1}^3 y_i^5 \times 100 \right]$$

Livelihood Capital Index was obtained as the average of the five capital indices thus computed. Thus it was obtained as the one-fifth of the sum total of all the five capital indices.

By definition, Livelihood capital index ranged from 0 – 100. With the increase in the index value, the livelihood capital also increases. Zero or values near to zero indicates low livelihood capital value near to 100 points to the good livelihood capital.

Income adequacy ratio

In the case of Financial capital, two other parameters viz. *Income Adequacy Ratio* and *Poverty gap* were also found out for indepth analysis of present financial status of the tribes people.

Income adequacy ratio was operationally defined as the sufficiency of real income of the family of a respondent vis-à-vis the minimum income required for the family. It was found out by utilising the financial capital components such as income of the respondent, savings and debts. The following formula was used.

$$\text{Income adequacy ratio} = \frac{\text{Real income}}{\text{Required income}} \times 100$$

Where

Real income = actual annual income earned by the family + interest on savings
(8%) - interest on debts (20%, since the source was institutional)

Required income = Rural poverty line in Kerala as on 2010 (per capita, per year
Rs.9319.8) X standard family size

Standard family size= Number of adult+ Half the number of children

The Income Adequacy Ratio ranged from 0-100. Zero or value near to zero indicates inadequate income. With increase in the value, the income sufficiency and thereby livelihood opportunities increase.

Poverty gap

The poverty gap was operationalised as the amount required per annum to bring the family to be taken of the respondent just above the poverty line. It was found out by computing the difference between real income of the family and the minimum income required for the family, AS PER THE POVERTY LINE, 2010.

3.4.1.2 Extent of deprivation

It was operationally defined as a state of material, social and mental harm experienced by the tribes people due to denial of choices and opportunities including food, shelter, clothing, land, education, employment, recreation and the like.

Deprivation was measured in terms of availability and accessibility of 13 dimensions viz. food, nutrition, shelter, clothing, land, education, employment, forest, forest resources, income, health, credit and recreation. A scale consisting of 45 statements were prepared to measure the availability and accessibility of each item and the responses of the tribes people on these were rated on a five point scale, as given below.

Levels of deprivation	Score
Most deprived	1
Deprived	2
Neutral	3
Not deprived	4
Not at all deprived	5

The scores obtained by an individual on all the items (statements) under each dimension were added up to get total score on that dimension. The average value of this total score was taken as the deprivation index in that particular dimension. The overall deprivation index was obtained by computing the average of the indices of all the selected 13 dimensions of deprivation.

3.4.1.3. Social exclusion

Social exclusion was operationalised as a multidimensional process of progressive social rupture, detaching groups and individuals from social relations and institutions and preventing them from full participation in the normal, normatively prescribed activities of the society in which they live.

An arbitrary scale was developed to measure the social exclusion of *Kattunaikkan* tribe of Wayanad. For the purpose, statements reflecting the dimensions of social exclusion were prepared based on review of literature. After careful editing, 19 statements were selected. Screening of these items was done through Judges' relevancy rating, on a 3 point continuum as most relevant, relevant and least relevant, with scores 3, 2 and 1 respectively.. From the 19

items, 13 items which secured an average score of 2.5 and above were selected. Thus the final scale consisted of 13 statements.

The scale was administered among the respondents. The responses were collected on a three point continuum, the points being always (Score-3), sometimes (Score-2) and Never (Score-1). The score ranged from 13-39.

3.4.2 Operationalisation and measurement of independent variables

As mentioned earlier, the 10 independent variables selected for the study are age, land holding, family size, value orientation, social participation, political orientation, change resistance, modernisation, alcoholism, and attitude of *kattunaikkan* tribes towards developmental interventions. The measurement procedures used for these variables are depicted below.

3.4.2.1 Age

It refers to the number of years completed by a respondent at the time of interview. This variable was measured directly by asking the respondent the number of years he/ she had completed at the time of investigation.

3.4.2.2 Family size

In the present study family size was measured by taking into consideration the specific number of members in the family of the respondents living together. The respondents were asked directly that how many members are there in their family including male, female, children and migrants if any, and the purpose of migration.

3.4.2.3 Political orientation.

Political orientation was operationally defined as the degree to which a person recognizes the power relations existing in the society and believes that democracy, distributive justice and political parties are relevant and important for

resolving the problems of people in order to achieve the objective of people's sustainable development.

The scale developed by Kumaran (2008) was used for this study. It consisted of ten statements in which the responses were collected on a two point continuum viz. 'Agree' and 'Disagree' with scores of two and one respectively for positive statements and the scoring was reversed in the case of negative statements.

Response	Agree	Disagree
For positive statements	2	1
For negative statements	1	2

3.4.2.4. Value orientation

It was operationalised as the belief held by the tribes people that human situations and acts are pre-determined by some supernatural power and their positive attitude towards traditional institutions and practices. In this study, value orientation of the tribe was measured using the scale developed by Reddy (1974), used by Sushama (1979) and modified by Rajendralal (2005). This scale consisted of 6 items with four response categories ranging from strongly agree to strongly disagree. The scoring adopted was as follows.

Responses	Scores assigned	
	Positive item	Negative item
Strongly agree	4	1
Agree	3	2
Disagree	2	3
Strongly disagree	1	4

The possible score ranged from 6 to 24.

3.4.2.5. Change resistance

It refers to the opposition shown by the tribes when they perceive that a change is about to occur to them or in their community. An arbitrary scale consisting of six statements was prepared after judges' relevancy rating of 12 statements. The responses were collected on a three point continuum as follows.

Responses	Score
Always	3
Sometimes	2
Never	1

The scores ranged between 6 and 18

3.4.2.6. Modernisation

Modernization was operationalised as an evolutionary transition of tribes people from a traditional to a modern society. Modernisation was measured taking into account their liking towards giving good quality education to children, interest in the possession of modern equipments and inclination towards modern practices. An arbitrary scale consisting of four statements was developed for the study after judges rating of 11 statements. The responses were collected on a three point continuum as Agree, Undecided and Disagree with scores 3, 2, and 1 respectively. The score ranged from 4-12.

3.4.2.7. Alcoholism

Alcoholism refers to the extent of consumption of alcohol by a respondent. It was measured mainly based on the frequency of intake of alcohol products. Information on health complications, if any, of the respondent due to alcohol intake was also recorded. In addition to the responses from the family head (respondent), responses were also elicited from the female members of the family, for accurate measurement of this variable. The frequency of intake of alcohol was recorded as daily, weekly and occasionally. The scoring procedure used was as follows.

Frequency of intake	Score
Daily	3
Weekly	2
Occasionally	1

3.4.2.8. Attitude towards developmental interventions

A scale was constructed to measure the attitude of *kattunaikans* towards developmental interventions. . Attitude was defined as the degree of positive or negative affect associated with a psychological object towards which people could differ in varying degrees. Likert's method of summated rating was used for the present study.

Collection of items:

The items to be included in the attitude scale were obtained through review of related literature and discussion with experts at the College of Agriculture, Vellayani. Universe of contents related to different aspects of developmental interventions and their impact among the tribes people in general and *Kattunaikans* tribes in particular was collected. Total of 52 statements were collected.

Editing the statements:

The statements selected had been carefully edited in accordance with the criteria suggested by Edwards (1957) so as to avoid unambiguous and neutral statements and to get both favourable and unfavourable statements. Thus 18 statements were identified.

Item analysis:

The 18 identified statements were later administered to 50 respondents in a purposively selected settlement in a non-sample area. The responses were collected on a three point continuum viz., 'Agree' 'Undecided' and 'Disagree'.

Method of scoring:

After obtaining the responses from the 50 respondents the scoring was done in the order of 3, 2 and 1 for 'Agree' 'Undecided' and 'Disagree' responses respectively in the case of positive statements and reverse in the case of negative statements. By summing up the scores obtained for each of the statements in the scale, the total score for each of the respondents was obtained.

Computing 't' value:

Based on the total score of each respondent, they were arranged in descending order. Twenty five per cent of the subjects with the high total scores (high group) and twenty five per cent of the subjects with low total scores (low group) were used for selecting the items. The responses of the middle fifty per cent were not considered. To evaluate if each statement differentiate the high and low group, 't' values were computed using the following formula (Edwards, 1957)

$$t = \frac{\bar{X}_H - \bar{X}_L}{\sqrt{\frac{\sum X_H^2 - \frac{(\sum X_H)^2}{n} + \sum X_L^2 - \frac{(\sum X_L)^2}{n}}{n(n-1)}}$$

Where, \bar{X}_H = the mean score on a given statement for the high group

\bar{X}_L = the mean score on a given statement for the low group

n = total number of respondents.

Thus the 't' value for each of the 18 statements was worked out and 12 statements with 't' values greater than 1.75 were selected while the rest 6 were rejected. Out of the selected 12 statements 6 were positive and the other 6 were negative.

Validity of the scale:

To ensure that the obtained test would measure the variable it was supposed to, content validity of the scale was established. According to Kerlinger

(2004) content validity is the representativeness or sampling adequacy of the contents, the substance, the matter and topics of a measuring instrument.

Content validity of the attitude scale was established in two ways; first, the items selected for inclusion in the scale were based on extensive review of literature. Secondly, the opinion of a panel of judges was obtained to find out whether the items suggested were suitable for inclusion in the scale or not.

Reliability of the scale:

A scale is said to be reliable when it produces results with high degree of consistency when administered to the same respondents at different times. In this study, reliability of the scale was determined by split-half method. The 12 items in the scale administered to 50 respondents was divided into two halves based on odd-even numbers of statements. The scores on the odd numbered items as well as the scores of the even numbered items of the same respondents were correlated using Pearson's product moment correlation coefficient. The coefficient of internal consistency was worked out using the formula

$$r_{oc} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{[N \sum X^2 - (\sum X)^2][N \sum Y^2 - (\sum Y)^2]}}$$

Where, N= Number of respondents.

X= Value of odd numbered items score.

Y= Value of even numbered items score.

The r_{oc} value obtained was again correlated by using Spearman Brown formula and thus obtained the reliability, r_{tt} of the original test. The formula used was

$$r_{tt} = \frac{2 r_{oc}}{1 + r_{oc}}$$

The obtained r_{tt} value was 0.763, which indicated a high reliability of the scale.

Administering the scale:

The final scale with six positive and six negative statements was administered to 120 respondents and the responses were collected on a three point continuum viz., 'Agree' 'Undecided' and 'Disagree' with scores 3,2 and 1 respectively in the case of positive statements and the reverse in the case of negative statements. The individual scores of each of the respondent were obtained by summing up the responses on all items. The possible score ranged from 12-36.

3.4.1.4. Constraints experienced in livelihood security

In the present study constraint was operationalised as the difficulties or problems faced by *Kattunaikans* tribes people to have a secured livelihood.

Based on review of literature related to the *kattunaikans* of Wayanad and discussion with experts, 50 constraints were identified. The listed constraints were refined and modified during the pilot survey conducted to refine the interview schedule. Thus 24 constraints were listed in the final interview schedule. The response on each constraint was obtained on a four point continuum viz., 'Very severe' 'Severe' 'Not severe' 'Not at all severe' with weightages of 4,3,2 and 1 respectively.

For each constraint, the frequency of the response under each category was multiplied with the respective scores and added up to get the total score for that particular constraint. Then the mean scores were worked out, and constraints were ranked based on the mean scores, separately for each category of the respondents.

3.5 Tools and techniques of data collection

An interview schedule including all variables mentioned above was prepared for collecting data from the respondents. Before the actual survey, a pilot study was conducted in a non-sample *Kattunaikan* settlement, so as to refine the schedule. Later, 120 sample respondents were contacted in their respective houses and rapport was established. The questions were put in a conversational manner and

responses were transcribed in the schedule itself. In case of responses, which were not clear, rechecking was done.

3.6 Statistical tools used

The data collected from the respondents were scored, tabulated and analysed using suitable statistical methods. Keeping in view the objectives of the study and amenability, the data were subjected to different statistical tools. These tests included mean, standard deviation, coefficient of variation and percentage which were used in comparison of different categories and frequencies. Simple correlation analysis was also used in analysing the data. A brief description of the tools used is given below.

1. Averages

The mean scores for the variables were worked out to make suitable comparisons wherever necessary.

2. Percentage analysis

Percentage was done to make simple comparison wherever necessary and for easy comparison.

3. Simple correlation analysis:

Simple correlation analysis was done to measure the relationship between the dependent variables and independent variables.

Results and discussion

4. RESULTS AND DISCUSSION

Keeping the objectives in view, the findings of the study are presented with appropriate discussions under the following headings.

4.1 Profile characteristics of the *Kattunaikan* tribe of Wayanad.

4.2. Livelihood Analysis

4.3. Extent of deprivation

4.4. Social exclusion

4.5. Relationship between profile characteristics and the dependent variables

4.6 Constraints experienced by the *Kattunaikan* tribe in livelihood security

4.1 PROFILE CHARACTERISTICS OF THE *KATTUNAIKAN* TRIBE OF WAYANAD

This section reveals the distribution of *Kattunaikans*, with respect to their profile characteristics. The variables studied under their profile characteristics include age, land holding, family size, value orientation, change resistance, modernization, political orientation and alcoholism.

4.1.1 Age

The distribution of the sample *Kattunaikan* tribes people according to their age is furnished in Table 1.

Table1. Distribution of the respondents according to their age

Sl. No.	Category	Age (in years)	Frequency	Percentage
1	Young	≤35	66	55.00
2	Middle	36-59	51	42.50
3	Old	≥60	3	2.50
Total			120	100.00

It is interesting to note from Table 1 that, about 55 per cent of the respondents belonged to young category. Exactly 42.5 per cent of the respondents were middle aged and only 2.5 per cent of the respondents were old. This may be due to the high birth and death rate among the *Kattunaikans* of Wayanad. The figure 2.5 points to the low life expectancy of the *Kattunaikans* of Wayanad district. The result is in line with the finding of Vasudevan (2010) which reveals

that the life expectancy of tribes people is low when compared to general population.

4.1.2 Land holding

The details regarding the land holding of the sample respondents are furnished in Table 2.

Table 2. Distribution of the respondents according to their landholding

Sl. No.	Land area (in cents)	Frequency	Percentage
1	Up to 10 cents	63	52.50
2	11-25 cents	23	19.20
3	26-50 cents	20	16.70
4	51-100 cents	13	10.80
5	>101 cents	1	0.80
	Total	120	100.00

A quick view of Table 2 indicates that 52.5 per cent of the respondents were having only upto 10 cents of land holding. Exactly 19.2 per cent of the respondents were having 11-25 cents of land holding followed by 16.7 per cent with 26-50 cents. Only 0.8 per cent i.e., only one out of the 120 respondents was having a land holding of more than 100 cents.

Almost all the respondents were living in forest lease land. They were provided with a certificate showing the temporary ownership of the land. The *Kattunaikans* do not have the right to sell their land or cut the trees in the land. Except one family, no one was having absolute entitlements.

In contrary to the belief that the tribes people possess more land, here more than half of the respondents possessed less than 10 cents of land only. Prior to the colonial period, tribes people were the rulers of the forest, there was no private land ownership amongst the tribes people. The land was considered as a community asset. The change occurred during the British period when the tribes people were forcibly displaced for building large scale tea and coffee plantations.

Later, widespread alienation of tribal lands to settler farmers resulted in the high level of landlessness among the tribes people. (Krishnaprasad, 2010)

4.1.3 Family size

Family size is a major factor influencing the livelihood of any community. The distribution of respondents based on this variable is presented in Table 3.

Table3. Distribution of the respondents with respect to family size

Sl. No.	Family size	Frequency	Percentage
1	2 members	7	5.80
2	3-4 members	22	18.40
3	5 members	33	27.50
4	6 members	37	30.80
5	7 members	17	14.20
6	8 members	4	3.30
		120	100.00

It can be observed from Table 3, that 30.8 per cent of the respondents were having 6 members in their family, followed by 27.5 per cent with 5 member-families, 18.4 per cent having 3-4member families and 14.2 per cent with 7 member- families. . Majority of *kattunaikans* had comparatively larger family size consisting of parents and children. The married sons or daughters apply for new houses to the government and shift to it as and when they are allotted one. In the case of sample households, the average family size was 5.2, more than the average household size in Kerala which is 4.3 (Government of India, 2005) with minimum 2 members and maximum 8 members. In Kerala state, the household size of the tribes people in general, was worked out to be 4.83. But it varies from 3.9 to 6.44 when different communities are considered. The large family size may be due to unawareness of the advantages of small family and the importance of giving good quality education and other facilities to

children. Thus, the result indicates the ignorance of *Kattunaikans* on the importance of family planning.

4.1.4 Value orientation

Table4. Distribution of tribes people based on their Value orientation

Sl. No.	Category	Frequency	Percentage
1	Highly progressive	3	2.50
2	Progressive	15	12.50
3	Traditional	75	62.50
4	Highly traditional	27	22.50
	Total	120	100.00

A perusal of Table 4 shows that among the respondents, 62.5 per cent were traditional followed by 22.5 per cent highly traditional. It indicates the continuing inclination of the tribes people towards their values and traditions. Exactly 12.5 per cent of the respondents were progressive and only 2.5 per cent were seen as highly progressive. Similar result was found out by Rajendralal (2005). High value orientation may be due to their belief in customs and values. Majority of them were following traditional ways of living. Some of the *Kattunaikan* colonies of Wayanad were still following customary practices like "Adiyanthiram", which was performed during the death of a member. During this, all the *Kattunaikans* in the colony, near by colonics and their relatives from other states, especially from Karnataka would gather together, prepare food and play different musical instruments. The function would be continued for the whole day_till evening. Those section of the respondents who were living away from forest area and living in mixed colonies, were not seen following these customs strictly_and were in a stage of transition. They considered these practices as out dated. That may be how 15 per cent of the respondents fell in progressive to highly progressive categories.

4.1.5 Political orientation

Table 5. Distribution of tribes people based on their Political orientation

Sl.No:	Category	Score range	Frequency	Percentage
1	Apolitical	4-8	9	7.50
2	Political	9-12	111	92.50
			120	100.00

Table 5 reveals that 92.5 percent of the respondents were having high 'political' orientation. While 7.5 per cent had low level of orientation in politics, who are included in 'apolitical' category.

Even though the respondents were not actively participating in various activities of different institutions and organizations, they believed in democracy and group efforts for achieving objectives. That may be the reason why majority fell in 'political' category. To some extent, political bodies such as *Adivasi Kshema Samithi* and some of the enlightened leaderships played a role in creating awareness about the importance of group efforts. But political participation was found low among the *Kattunaikans* of Wayanad. Low political participation may be due to their low level of empowerment. Hence there is the necessity for political mobilization of *Kattunaikans*.

4.1.6. Change resistance

Table 6. Distribution of tribes people based on their Change resistance

Sl.No:	Category	Score range	Frequency	Percentage
1	Least resistant	6-11	111	92.50
2	Moderately resistant	12-14	8	6.70
3	Most resistant	15-18	1	0.80
			120	100.00

From table 6, it is clear that 92.5 per cent of the respondents were least resistant to change, 6.7 per cent were moderately resistant and only 0.8 per cent were highly resistant. This result is against the common belief that the tribes people are against changes, and they like to stick on old traditional design of

living. It is an interesting result that most of them wanted a change. So it is easy to introduce new developmental interventions into their society. Thus, it can be said that the *Kattunaikans* are in a transition stage even though they are holding their traditional values. This may be due to the awareness of tribes people about the need for change. The role of mass media and influence of other communities and interventions could not be neglected in this regard.

4.1.7 Alcoholism

Table 7. Distribution of tribes people based on their addiction to alcohol

Sl.No:	Category	Frequency	Percentage
1	Non users	55	45.80
2	Occasionally	31	26.70
3	Weekly	22	17.50
4	Daily	12	10.00
	Total	120	100.00

A bird's eye view of Table 7 shows that 45.8 per cent of the respondents were non users of alcohol and 26.7 per cent of these tribes used it occasionally. This was followed by 17.5 per cent who used it weekly and 10 per cent daily. Though majority (54.2%) of the respondents was alcohol users, it was not a severe problem among majority of the respondents. Chewing habit was more prevalent among *Kattunaikans* than alcoholism.

4.1.8 Modernization

Modernization was assessed by taking into account their level of aspiration towards quality education, modern equipments and the like.

Table 8. Distribution of tribes people based on their Modernization

Sl.No:	Category	Score range	Frequency	Percentage
1	Not modern	4-8	7	5.80
2	Modern	9-12	113	94.20
	Total		120	100.00

It is interesting to note from Table 8 that 94.2 percent of the respondents were modern, while only 5.8 per cent were not modern. This is fully against the common belief that the primitive tribes are against modernization. This may be due to their continued contact with the mainstream over the years. Heavy invasion of non-tribal people to Wayanad since 1940s, coupled with various developmental interventions and tribal exposure to modern education, political process, and mass media were some of the factors contributing to the situation. The result shows the wish of this primitive tribes people to live in a better way than they are. But money is the limiting factor. Joseph and Antony (2012) pointed out that as the tribal communities are getting modernized there is an imminent danger in losing their traditional knowledge. But here, it is a positive sign that they wanted to keep their tradition and culture, though needed a modern way of life.

4.1.9 Attitude of Kattunaikan tribes towards developmental interventions

Table 9. Distribution of respondents with respect to their Attitude towards developmental interventions.

Sl.No:	Category	Score range	Frequency	Percentage
1	Unfavourable	13-24	37	30.80
2	Favourable	25-36	83	69.20
Total			120	100.00

A glance at Table 9 revealed that a large percentage (69.2%) of the respondents had a high level of disposition towards developmental interventions where as the rest 30.8 per cent had an unfavourable attitude. The result indicates that majority of the *Kattunaikans* of Wayanad would welcome any programme aimed at their development. However, the developmental interventions must be socially sustainable and should have a lasting improvement in the quality of tribal life. Development programmes and technologies developed must be suited to the needs, abilities and value system of the *Kattunaikans*, which ultimately enables the capabilities of these tribes people. The favourable attitude is a positive sign

which can play a role in the acceptance of the developmental programmes of the Government. The theory of attitude behaviour congruency (Fishbein and Raven. 1973) indicates that the development of favourable or unfavourable attitude towards an object or situation will be dependent on the benefits associated with the object. To some extent, the government programs such as the housing schemes have benefited the *Kattunaikan* tribes, who were one among the most marginalized group of Kerala. Anyway, the results are positive and encouraging.

4.2 LIVELIHOOD ANALYSIS

The term livelihood is often understood as an income generation activity or means of living pursued by the target group. This in fact represents only one angle of livelihood system. A livelihood concept is much broader than this. In other words it comprises the capabilities, assets and activities for a means of living, people use to support themselves, to survive and to prosper (Chambers and Conway, 1992). Livelihood of any community is mostly dependent upon two important aspects which can be classified into community specific intrinsic factors and general external factors. Access to different levels and combination of assets has probably the major influence on choice of livelihood options. However, the importance of the other factors such as capabilities of people exploiting assets and the nature of the environment cannot be undermined. The diversities in livelihoods exist by locality as a result of variation in factors mentioned above.

In this study, livelihood analysis was done utilizing the five capital components of Sustainable Livelihood Framework of FAO (2009). The variables suggested by Sabaratinam (2002) were blended under these five capitals.

4.2.1. Human capital

The Human capital consists of sub variables such as Education, Hygiene, Addictive behavior, Health care seeking behavior and Food habits.

4.2.1.1. Education

Education in the modern society assumes roles ranging from a basic ingredient for successful functioning to a mechanism capable of weaving the multitude of distinctly different threads that can create a better tomorrow. Table 10 depicts the categorization of *Kattunaikans* based on their educational status.

Table 10. Distribution of the respondents based on their Education

Sl. No	Category	Frequency	Percentage
1	Illiterate	61	50.80
2	Up to primary level	26	21.70
3	Middle school	17	14.20
4	High school	8	6.70
5	Higher secondary school	5	4.20
6	Graduate	3	2.50
7	Professional degree	0	0.00
Total		120	100.00

A glance at Table 10 reveals that with respect to education, the *Kattunaikans* are still in primitive stage with 50.8 per cent illiterates, followed by 21.7 per cent having education up to primary level. Only 14.2 percent of the respondents were having education up to middle school, while 4.2 percent of the respondents were having higher secondary level of education. Not even a single person was having professional level of education. The table clearly shows that when goes up in educational hierarchy, the number of respondents decreases.

Poverty may be one important factor contributing to the low literacy and high dropout rates among the *Kattunaikans*. In rural areas, the demand for education among the poorer sections of the population was much lower than it is in urban areas. Poor tribes people in rural areas had to work in order to cope with their daily living and did not place a high value on education unless it is linked to vocational training. Additionally, since most of the *Kattunaikans* were residing in forest areas where a good infrastructure was lacking, they found it difficult to have access to schools. Another important problem was the wild animal menace, especially in early morning hours, which hindered children from going to school.

Even though educational interventions were there, many tribes people didn't find it necessary to educate their children. Instead, the children were mostly engaged in their traditional jobs to meet the day-to-day needs. They were oriented towards family life at a very young age itself according to their social customs. For them bread was more important than education. The tribal students joining with higher educational institutions were very low. In the case of *Kattunaikans*, the low educational status was mainly due to high dropout rates. Almost all tribal children joined the schools but majority discontinued as dropouts at different levels of education. The important thing is that the *Kattunaikans* of Wayanad speak a language which is a mix of Malayalam and Kannada. But in school syllabus, they had to learn either in Malayalam or English. So the children may find it difficult to understand and cope up with the language. The study of Mohanlal (2001) highlights that the main reason for dropout was the total incompatibility between the students and the use of language in the textbooks and language used by the teachers in the school. Moreover, the parents of the tribal children being generally illiterate, neither attached much importance to education nor insisted their children to attend classes regularly. The study of Krishnan (1999) points out that the major factor accounting for low educational achievements and low aspirations on the part of tribe folk in Wayanad was their poor social and economic condition. In order to improve education among tribes people, the primary efforts should be on eradication of poverty. The parents of the tribal children have to be provided with regular employment for earning income to meet their day-to-day requirements, which will help to send their children to school. The low level of education, as revealed in this study, surely, is an important impediment for their vertical mobility in social life.

Fig.2.Distribution of repondents based on age

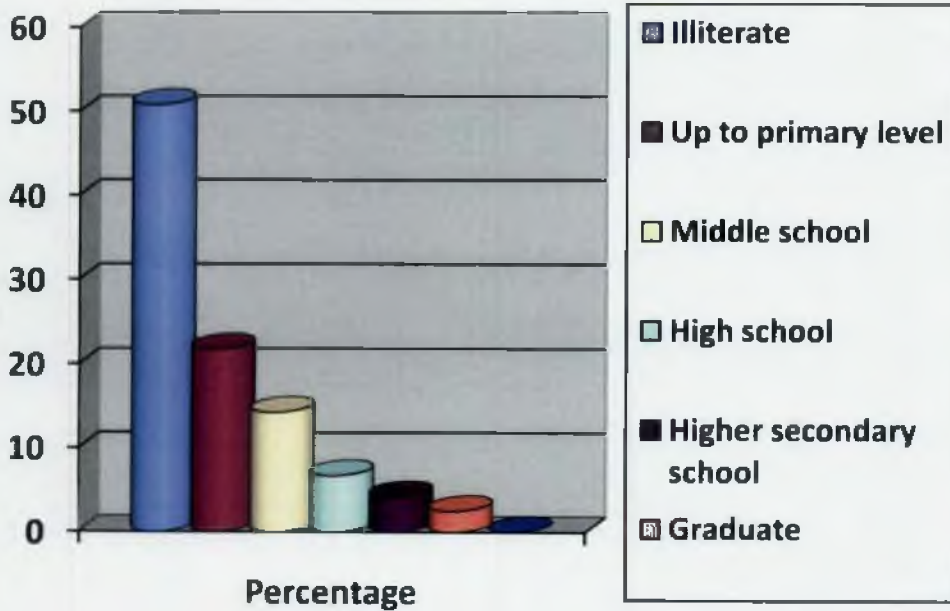
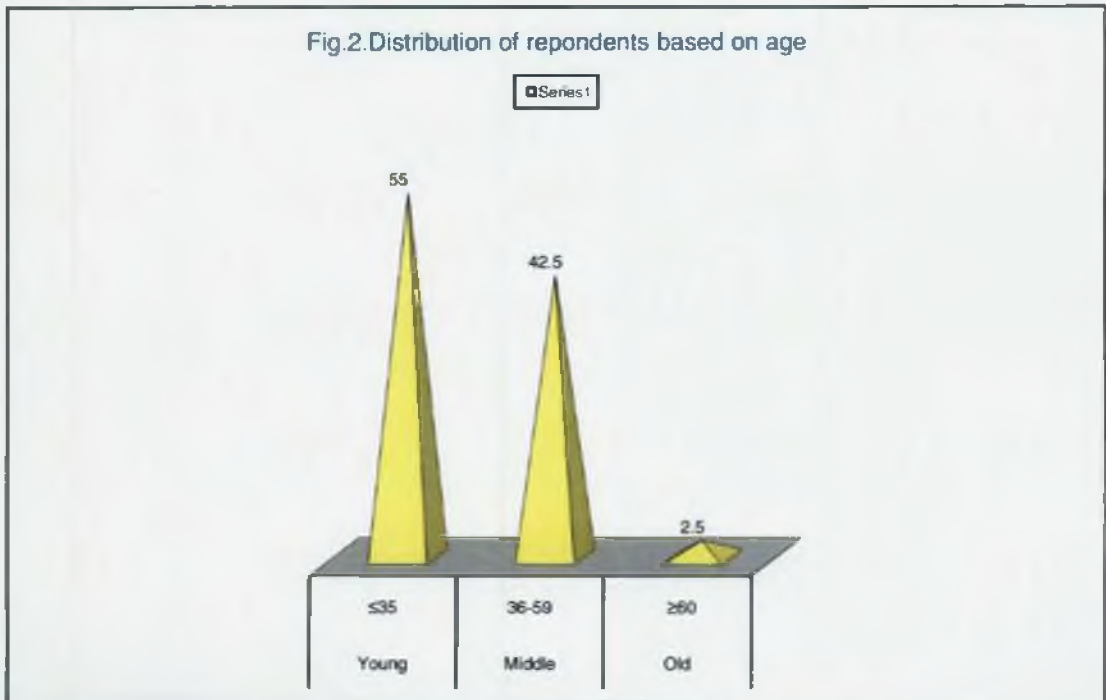


Figure3: Distribution of the respondents based on education

4.2.1.2. Hygiene

Table 11. Distribution of the respondents based on their Hygiene

Sl. No	Category	Score range	Frequency	Percentage
1	Low	2-6	0	0
2	Medium	6-8	18	15
3	High	9-11	102	85

Table 11 reveals an interesting fact that 85 percent of the respondents fell in the high hygiene category followed by 15 percent in the medium category. None of the respondents fell in the Low category. Traditionally, the *Kattunaikans* give primary importance to cleanliness. This may be the reason why majority of the respondents fell in high hygiene category. They were having the habit of keeping their home and premises clean and tidy. The result is against the general belief that most tribes people live in poor hygienic condition.

4.2.1.3. Addictive Behaviour

Table 12. Distribution of *Kattunaikans* based on their Addictive behaviour

Sl. No	Category	Score range	Frequency	Percentage
1	Low	4-6	9	7.5
2	Medium	7-9	35	29.2
3	High	10-12	76	63.3

Among the *Kattunaikans*, 63.3 per cent belonged to the high addictive behavior category followed by 29.2 per cent in the medium category and 7.5 per cent in the low category. Absence of health awareness among *Kattunaikans* resulted in high prevalence of chewing tobacco, alcoholism and smoking. However, the high addictive behavior was mainly due to the habit of betel chewing with tobacco by almost all the respondents. *Kattunaikans* having the age 15 or above, irrespective of their sex, used tobacco regularly for chewing purpose.

4.2.1.4. Health care seeking behaviour

Table13. Distribution of the respondents based on their Health care seeking behaviour

Sl. No	Category	Score	Frequency	Percentage
1	Poor	1	74	61.7
2	Good	2	46	38.3

The data presented in Table13 points to the fact that 61.7 percent of the respondents were having poor health care seeking behaviour, whereas 38.3 percent were having good health care seeking behaviour. The low health care seeking behaviour may result in poor health condition and high mortality rate. Compared to the earnings of the respondents, the expenditure on health could be a heavy burden which might be one reason for their poor health care seeking behaviour. Absence of health awareness and poverty may also have prevented them from approaching hospitals and healthcare centers until illness became serious. This resulted in various problems such as low life expectancy, high morbidity and high infant mortality rate. However, the *Kattunaikans* had no hesitation in using allopathic drugs. As reported by Amuthavalluvan and Devarapalli (2011), in the changing situation *Kattunaiakans* are gradually accepting modern health care systems according to their economic conditions. Earlier they were using indigenous system of medicine.

4.2.1.5. Food Habits

Table 14. The type and periodicity of food intake by the respondents

Type of food	Periodicity of intake									
	Thrice a day	Twice in a day	Once in a day	Once in two days	Once in three days	Once in a week	Fort nightly	Once in a month	Occasionally	Never
	Frequency distribution of the respondents									
Cereals- Rice	5 (4.2)	112 (93.3)	3 (2.5)							
Pulses		2 (1.7)	16 (13.3)	35 (29.2)	34 (28.3)	21 (17.5)	11 (9.2)			
Tuber crops					18 (15)	29 (24.2)	48 (40)	25 (20.8)		
Vegetables		3 (2.5)	40 (33.3)	49 (40.8)	28 (23.3)	1 (0.8)				
Leafy vegetables				2 (1.7)	1 (0.8)	7 (5.8)	31 (25.8)	48 (40)	31 (25.8)	
Fruits							2 (1.7)	6 (5)	112 (93.3)	
Honey									116 (96.7)	4 (3.3)
Milk							1 (0.8)	1 (0.8)	10 (8.4)	108 (90)
Fish					39 (32.5)	61 (50.8)	14 (11.7)	2 (1.7)	1 (0.8)	2 (1.7)
Egg							7 (5.8)	17 (14.2)	66 (55)	30 (25)
Meat						10 (8.4)	22 (18.3)	37 (30.8)	39 (32.5)	12 (10)

(Figures in parentheses indicate percentage)

Rice was the staple food of *Kattunaikans*. They used to take food twice a day. From Table 14, it is clear that majority (93.3%) of the respondents took rice twice in a day. Below five percent of the respondents were taking cereals (rice) alone, thrice a day. Most of the times, they consumed rice with a single side dish called "chammanthi", a preparation with chilli alone. Only 13.3 percent of the respondents consumed pulses at least once a day. Exactly 29.2 per cent of the respondents consumed pulses once in two days followed by 28.3 per cent

consuming once in three days and 17.5 per cent once in a week. It is highly pertinent to note that 90 per cent of the respondents had not consumed milk so far. Majority of them took fish once in a week, while they consumed meat occasionally. Put together, the protein intake was found to be very less. Further, the table points out that the intake of fruits, egg and honey was very less among the *Kattunikans* of Wayanad.

In short, it can be said that majority of the respondents took food only twice in a day; that too with mainly carbohydrates. The use of vegetables and pulses was found limited to twice or thrice in a week. The results further indicate lower level of diversification of food intake among these tribes people. The findings is in conformity with the study conducted by Indira (1993) in which she found out that about 30-80 per cent of the money spent for food was incurred for the purchase of cereals by the tribal families. Considering two or less than two meals per day, that too mainly with carbohydrates alone as an indicator of food insecurity, it can be inferred that majority of kattunaikans were vulnerable to food insecurity. The consumption pattern further indicates another alarming situation. The number of growing children was comparatively more in the *Kattunaikan* settlements; their growth would be badly affected by their less protein intake. Thus the two shocking inferences emerged from the above results are: 1) majority of the *Kattunaikans* were severely under nourished and 2) the little nourishment they get was severely unbalanced.

4.2.1.5. Diet Balance Index

A Diet Balance index (DBI) was developed to measure the dietary quality of *Kattunaikan* tribes of Wayanad. After analyzing the food habits, to get a clear view of the balance in nutrient intake, the diet balance index was computed by taking in to consideration the carbohydrate, protein, and vitamin and mineral intake. Based on the diet balance index, the respondents were categorized into two categories, those who were taking unbalanced diet (index 0-50) and those who were taking balanced diet (index of 51-100).

Table 15. Distribution of the respondents based on their Diet balance index

Sl. No	Category	Score range	Frequency	Percentage
1	Unbalanced	0-50	111	92.5
2	Balanced	51-100	9	7.5
Total			120	100

A glance at Table 15 reveals that majority (92.5 %) of the respondents were having a diet balance index between 0-50. It indirectly points to the fact that the *Kattuniakans* were not consuming 50 percent of nutrients what actually needed by them. This shows the severe form of malnutrition prevailing among them. They were severely facing food insecurity. Only 7.5 per cent of the respondents were taking balanced diet. The result is in line with the findings of National Nutrition Monitoring Bureau (1998-99). They had reported that higher prevalence of under nutrition was there among tribes people and it might be due to poverty, lack of awareness about, access to and utilisation of the available nutrition supplementation programmes.

4.2.2. Physical capital

The Physical capital includes factors such as Type of house, Condition of the house, Livestock possession, Material possession, Access to safe drinking water, Toilet facility and Electric connectivity.

4.2.2.1. Type of house

Shelter is a basic indicator of livelihood security along with food. Thus 'type of house' assumes great significance in livelihood analysis.

Table 16. Distribution of the respondents based on their Type of house

Sl. No	Category	Score range	Frequency	Percentage
1	Thatched	1	7	5.8
2	Tiled	2	45	37.5
3	Asbestos	3	4	3.3
4	Concrete	4	64	53.4
Total			120	100

It is clear from Table 16 that 53.4 per cent of the respondents were having concrete houses followed by 37.5 per cent having tiled and 5.8 per cent having thatched houses. Only 3.3 per cent were having houses with roof made of asbestos. In *Kattunaikan* settlements, the number of thatched houses was decreasing. The fall in the number of thatched houses was an indicator of livelihood promotional activities by the governments. The various schemes of the governments helped them in getting new concrete houses. That was the reason why majority of the respondents were having concrete houses. In the earlier scheme of the government, the *Kattunakans* were provided with tiled houses, which may be the reason why 37.5 per cent were having tiled houses.

4.2.2.2. Condition of the house

Table 7. Distribution of the respondents based on their Condition of the house

Sl. No	Category	Frequency	Percentage
1	Poor	19	15.8
2	Average	50	41.7
3	Good	51	42.5

A cursory view of Table 17 reveals that 42.5 per cent of the respondents were having houses in good condition, followed by 41.7 percent having average house condition and only 15.8 per cent were having poor houses. All of the families got a small portion of land and houses built by the Government. . Since newly constructed, majority of the houses were in good condition.

4.2.2.3. Material possession

The living standard of people and thereby the livelihood security in the modern world does not rest with food security alone, but it extends to the ownership over wide range of assets, both tangible and intangible including household appliances. Modern man wants diverse type of facilities to satisfy his needs in a relative manner than absolute manner.

Table 18. Distribution of tribes people based on their Material possession

Sl. No	Score range	Frequency	Percentage
1	<500	5	4.20
2	500-1000	13	10.80
3	1000-5000	49	40.80
4	5000-10000	30	25.00
5	10000-25000	19	15.80
6	>25000	4	3.30

A pathetic situation which can be noticed from Table 18 is that 4.2 per cent of the respondents were not even possessing materials amounting to 500 rupees. The table indirectly depicts the level of poverty among the *Kattunaikans* of Wayanad. Among the respondents, 40.8 percent possessed materials of 1000-5000 rupees followed by 25 percent having materials of 5000-10000 rupees, 15.8 per cent having materials of 10,000-25000 rupees and 10.8 per cent having material worth 500-1000 rupees. Only 3.3 per cent of the respondents were having material possession of more than Rs. 25000. Majority of them were having only kitchen utensils as their own. Very few of the respondents had furniture which included chair, almirah and cot. It was found out that very few of the respondents owned mobile phones and a few had television sets.

4.2.2.4. Livestock possession

Being a forest based community, the livelihood of *Kattunaikans* was not much depended on animal husbandry. Still livestock possession would improve their livelihood security.

Table 19. Distribution of tribes people based on their Livestock possession

Sl. No	Category	Frequency	Percentage
1	No animal	48	40
2	≤500	32	26.7
3	501-1000	2	1.7
4	1001-5000	4	3.3
5	5001-10000	11	9.2
6	10001-20000	6	5
7	>20001	17	14.2

A cursory view of Table 19 indicates that 40 per cent of the respondents had no livestock. Twenty six point seven percent were having livestock costing less than 500 rupees. Only 14.2 percent of the respondents possessed livestock costing more than Rs. 20001. Under various schemes, the government was providing buffaloes to tribes people and this contributed to 14.2 per cent in this category. Altogether, it is clear that the livelihood of *Kattunaikans* was not mainly dependent on livestock.

4.2.2.5. Toilet facility

Individual toilets assume importance from the point of view of providing privacy as well as preventing communicable diseases and improving hygiene. Thus it plays a significant role in livelihood security.

Table 20 Distribution of tribes people based on their Toilet facility

Sl. No	Category	Score range	Frequency	Percentage
1	Yes	2	83	69.2
2	No	1	37	30.2

Careful examination of Table 20 indicates that 69.2 per cent of the households had in-house toilet facility and 30.2 per cent of the households had no toilet facility at all. The 30.2 percent of the *Kattunaikan* households did not have toilet facilities is a matter of concern, especially for a state like Kerala which has high Human Development Index .Kerala stands first in the case of Human Development Index, which is 0.790. (Government of India, 2011b). It was shocking that, in one of the sample colonies, only one toilet was there for the whole settlement consisting of 40 families. Another notable fact is that even though they were having toilet facility, many of them were not utilizing the same, because of the belief that if they defecate in toilets situated near to their home, which will badly affect their cleanliness.

4.2.2.6. Electric connectivity

Table 21. Distribution of tribes people based on Electric connectivity

Sl. No	Category	Score range	Frequency	Percentage
1	Yes	2	72	60
2	No	1	48	40

A cursory view of Table 21 indicates that 60 per cent of the respondents were having electric connectivity in their houses followed by 40 per cent families having no electricity in their houses. The 40 per cent houses having no electricity indicate a worse situation. Majority of the families were living within forests. The difficulty in giving electric connection to forest settlements after stretching electric lines may be one among the major reasons for 40 per cent having no electric connectivity. Kerosene lamps were the alternatives for lighting among those who did not have electric connectivity.

4.2.2.6. Access to drinking water

Table 22 Distribution of tribes people based on Access to drinking water

Sl. No	Category	Score range	Frequency	Percentage
1	House premises	6	10	17.5
2	Up to 500m	5	89	74.2
3	500m- 1km	4	21	8.3
4	1-2km	3	0	0
5	2-4km	2	0	0
6	>4km	1	0	0

A glance at Table 22 shows that 74.2 percent of the respondents had to go up to 500 m for collecting water. Drinking water was available only for 17.5 per cent of the respondents in house premises. A worse condition which could be noticed from the table is that 8.3 per cent of the respondents had to walk up to 1 Km to collect water to sustain their life. Though Government had made a number of interventions to provide drinking water facilities to tribes people, most of them had to travel long distances to access water. Drinking water problem was seen among 82.5 per cent of the respondent *Kattunaikan* families, which was mainly

Fig4: Distriution of respondents according to their access to drinking water

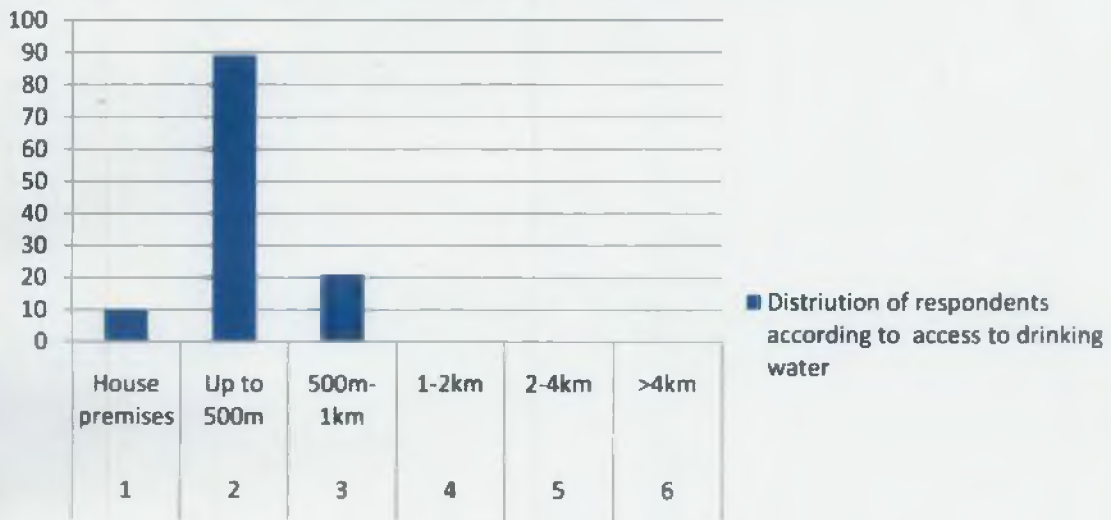


Plate 1. Kattunaikans of Ponkuzhi colony collect water from Noolpuzha



Plate 2. "Daivapura" of Kattunaikans at Ponkuzhi colony

due to the distance. Even though natural water resources are available, the distance to the sources play the major role in causing drinking water problem. The *Kattunaikans* were mainly utilizing rivers, hill water and public wells for drinking water purpose. The result is in contrast to the findings of Nazer, (2003) who had reported that drinking water problem is less significant among the *Kattunaikans*.

4.2. 3. Financial capital

Table 23. Financial capital position of the *Kattunaikans* of Wayanad.

Capital components	Minimum	Maximum	Mean	SD	CV %
Annual family Income	6200	96000	22435	12283.91	54.75
Expenditure pattern	6200	44980	20605.83	7258.48	35.23
Savings	0	65000	4194.17	11973.59	285.48
Debts	0	25000	375	2664.15	710.44

A quick view of the table indicates that the income of the family of respondents ranged from Rs.6200/- to Rs.96000/-. The average annual income was found to be Rs 22435/- among the surveyed families. Only five respondents were having annual family income more than Rs. 60000. Income of majority of the *Kattunaikans* was not enough to feed family members properly, especially considering the high family size. They depended on forest produces and wage labour for their livelihood. Some of the respondents had government jobs who were working as forest watchers (seasonal, who were called as 'Thee watchers' and permanent forest watchers) and some others as mahouts. During monsoon, they depended only on daily manual work to meet their expenses. The Coefficient of Variation of the annual family income of *Kattunaikans* was 54.75 per cent. Thus there was disparity in income among the surveyed families. This may be due to the fact that most of the respondents did not have a constant income, but a very few had government jobs like forest watchers, anganawadi teachers and mahouts. The household income can directly decipher into food security and other livelihood assets. The result is in line with the findings of Ninan *et al*

(2000), in which they had estimated that total value of non-timber forest products per household was around ` 6287 per annum.

In the case of expenditure, the minimum amount was ` 6200/- and the maximum was `96000/-. The mean expenditure was Rs.20605.83/- and the coefficient of variation was 35.23 per cent, which indicates less variation among the respondents with regard to expenditure. The table clearly shows that the difference between minimum income and expenditure was zero, which indicates that they spent all the money they earned. They earned and spent the money daily.

Majority of the *Kattunaikans* did not have the habit of saving money; it was evident from the coefficient of variation, of 285.48 per cent. Exactly 75.8 percent of the *Kattunaikkans* had no savings at all; 4.2 percent of them had a debt as well. Only 29 persons (24.2%) among the sample were having savings. They had, on an average, a fixed or liquid assest of Rs.17355. Only 9.2 percent of the respondents had a fixed asset worth the name like gold worth an average of Rs. 39273. Among the respondents, only 18 persons were having liquid assets especially savings as money in Self Help Groups (SHGs), banks and post offices and the average is Rs. 3961.

Only 5 persons (4.2 %) were indebted, and the average amount of debt was found to be Rs. 9000. The level of indebtedness was less among the *Kattunaikans*, as compared other tribes and non- tribes people. Because of low family income and repayment capacity, the *kattunaikans* hesitated to take loan. Rather, it may be difficult for them to get credit. The indebtedness was seen more among high income group than the low income group. However, availing loan was not part of their culture. Majority of these tribes people spent only what they earned.

4.2.3.1 Poverty gap

Poverty gap is the average amount needed per annum to take a family from the present income to just above the poverty line. It was estimated as the difference between the minimum required income (poverty line) and real annual

income. The real annual income was the actual income earned plus the imputed value of interest (8 percent) on fixed and liquid assets (savings) -10 percent interest on debts incurred. The minimum required family annual income was estimated based on the rural poverty line in Kerala as on 2010. That means the poverty line of a rural person, as fixed by the government agencies is considered as the required income level for this purpose. Thus, the poverty line fixed for 2004, deflated (using consumer price index) to the 2010 prices is computed as Rs.776.65 per standard person. It is multiplied with 12 to obtain required annual per capita income and is obtained as Rs. 9319.8 per capita per annum. Thus, the amount required for the whole family would be the product of this amount with the standard family size. The standard family size is taken as the number of adult family members plus half the number of children. The standard family size was obtained as 4.33. It was found that that only 9.2 percent of the *Kattunaikkan* people had really earned what was required for a minimum standard of living of the family. The rest (90.8 percent) were the people trapped in poverty. Economically the tribes people were the weakest section in the social hierarchy; so the poverty level was high among the tribes. The poverty gap among *Kattunaikans* was estimated as Rs. 20242. The average annual real income of the family was estimated to be Rs. 20115. In other words, these poor families had to find almost the same amount as they currently earned to get rid off the poverty trap.

4.2 3.2. Expenditure pattern

Table 24. Monthly expenditure pattern of a *Kattunaikan* household.

Sl. No:	Items	No. of respondents (households) spending money		Mean	Mean (non-0s)	%share-all	%Share-non-0s)
		0's	Non-0's				
1	Food	0	120	9344.17	9344.17	45.35	45.35
2	Cloth	0	120	1876.25	1876.25	9.11	9.11
3	Cultivation	79	41	256.67	751.22	1.25	3.65
4	Health	0	120	527.5	527.5	2.56	2.56
5	Education	77	43	599.58	1673.26	2.91	8.12
6	Livestock	109	11	42.08	459.09	0.2	2.23
7	Electricity	47	73	297.83	489.59	1.45	2.38
8	Ceremonies	0	120	706	706	3.43	3.43
9	Fuel	119	1	16.67	2000	0.08	9.71
10	Travel	0	120	2804.58	2804.58	13.61	13.61
11	alcohol consumption	55	65	3066.67	5661.54	14.88	27.48
12	Others	0	120	1068.67	1068.67	5.19	5.19

On an average, a tribal *Kattunaikan* household spent Rs.9344 per year for food items and the corresponding figure for cloth was Rs.1876. Their expenditure on food items was 45.35 per cent of the total expenditure. Even though *kattunaikans* were spending around 50 per cent money on food, they were not at all taking enough nutrients. Diversity was very less in the case of food items. The per cent of money spend was only 9.1, in the case of cloth. All the respondents were spending money for both food and cloth items. Out of the 120 respondents, only 41 were spending money for crop cultivation. This may be due to the fact that *Kattunaikans* depended on forest and forest produces for their livelihood and dependence on agriculture was very less. Table 24 further depicts a pathetic situation that the poor *Kattunaikans* were spending 27.48 per cent of their income for alcohol consumption. Among the 120 respondents, 65 were consuming alcohol while 55 were non- drinkers. But those who were consuming alcohol were spending 27.48 per cent of their income for the purpose. Expenditure on travel was another major item, for which they were spending 13.61 per cent of their income. Since they were living inside the forest, they had to travel a lot to

purchase food items and cloths, and also for medical and educational purposes. Only one respondent was seen spending money for fuel. Others used twigs and wood materials collected from forest as source of fuel. All the respondents were spending money for ceremonies, which indicated that they were giving importance to their customs and traditions. A notable result was that only 2.91 per cent of their income was spent for educational purpose.

4.2.3.3. Income Sufficiency Ratio

Table 25. Distribution of tribes people based on their Income Sufficiency Ratio

Sl. No	Category	Score range	Frecquency	Percentage
1	Worst	0-25	21	17.5
2	Less	25-50	45	37.5
3	Average	50-75	44	36.7
4	Good	75-100	10	8.3

Income Sufficiency Ratio gives a clear picture about income adequacy of the respondents based on the data compiled. In the case of any community or for any individual, income plays a crucial role in livelihood security. By taking into account the actual and required income, income sufficiency ratio was found out. Based on that, the respondents were classified into 4 categories. A glance at Table 25 reveals that 37.5 per cent of the respondents belonged to the 'less income sufficiency' group followed by 36.7 per cent in average and 17.5 per cent in 'worst income sufficiency' group. Exactly 8.3 per cent of the respondents were in a good condition in the case of income. It means that majority of the *Kattunikans* of Wayanad did not have sufficient income to meet their daily family expenses. This might be due to their dependence on traditional occupations and large family size. Their low level of human development and empowerment also might have prevented them from bargaining for better wages and acclimatize to the changed environment.

4.2.4 Social capital

In any community, the community economic development depends upon social capital, that is the level of inter-personal trust, civic engagement and organisational capability (Fukuyama ,1995). In the present study, the social capital was studied taking into account two dimensions such as social

participation and social relationship. Based upon the score range, these two dimensions were categorized into different classes.

4.2.4.1. Social participation

Table 26. Distribution of tribes people based on their Social participation

Sl. No	Category	Score range	Frequency	Percentage
1	Low	<20(8-20)	64	53.3
2	Medium	26-32	56	46.7
3	High	>32	0	0

A bird's eye view of Table 26 indicates that 53.3 per cent of the respondents belonged to the low social participation category followed by 46.7 per cent in the medium. Not even a single respondent had high social participation. Poverty and low literacy rate might have contributed to their overall low level of social participation. Though the constitution guarantees equality, the feudal hangover was still persisting in the mind set of people. Those *Kattunaikans* who had opportunities to be in contact with various extension agencies and social organizations had enhanced self confidence which in turn improved their ability to take rational decisions and such tribes men were giving better education to their children also.

4.2.4.2 Social relationship

Table 27. Distribution of tribes people based on Social relationship

Sl. No	Category	Score range	Frequency	Percentage
1	Poor	4-6	1	0.8
2	Average	7-9	46	38.3
3	Good	10-12	73	60.9

A cursory view on Table 27 indicates that 60.9 per cent of the respondents were having a good relationship with other members of the society followed by 38.3 per cent having medium and only 0.8 per cent having a poor relationship. Even though *kattunaikans* were having low level of participation and membership in

organizations, they had good relationship between members of the society. The basic premise is that such interaction enables people to build communities, to commit themselves to each other, and to knit the social fabric.

4.2. 5. Natural capital

The *Kattunaikans*, since living inside the forest area, naturally the dependence on natural resources may be there for life and livelihood. The Natural capital was assessed by taking into account the sub components such as Land holding, Gross Cropped area and Utilisation of natural resources.

4.2.5.1. Land holding

Table28. Distribution of tribes people based on Land holding

Sl. No	Category	Frequenc y	Percentag e
1	Up to 10 cents	63	52.5
2	11-25 cents	23	19.2
3	26-50 cents	20	16.7
4	51-100 cents	13	10.8
5	>101 cents	1	0.8
	Total	120	100

Land continues to be the most important asset in the rural areas where income and employment opportunities are dependent to a great extent on the possession of land and its characteristics. Among the *Kattunaikans* of Wayanad, the dependence on land for agriculture was very less since their livelihood practices comprised of collection of minor forest produces, wage labour and other forest related jobs such as forest watchers and making boundaries of forest by burning waste materials.

Because of migration of people from the southern districts of Kerala to Wayanad in the 1940s and 1950s and the stipulations of the Forest Laws, most of the Adivasis (tribes) of this district are entitled with either no land or very little. Governments had provided the tribes small holdings, but were without proper title deeds. A quick view of Table 28 indicates that 52.5 per cent of the

respondents were having only upto 10 cents of land holding. Exactly 19.2 per cent of the respondents were having 11-25 cents of land holding followed by 16.7 per cent with 26-50 cents, 10.8 percent with 51-100 cents and 0.8 percent (one respondent) with more than 100 cents. The most striking fact was that, except one or two families, no one was having absolute entitlements. Almost all the respondents were living in forest lease land. They were provided with a certificate showing the temporary ownership of the land. The tribes people did not have the right to sell the land or cut the trees in the land.

The findings of the study are in line with those of Shylajan (2009)

4.2.5.2. Gross Cropped Area

Gross Cropped Area was calculated by summing up area under each crop. In the case of multiple cropping, area covered by each crop was separately taken and added up to get the gross cropped area. Based on the gross cropped area, the respondents were categorized into five classes-Very low, Low, Below medium, Medium and High.

Table 29. Distribution of tribes people based on Gross Cropped Area

Sl. No	Category	Score range	Frequency	Percentage
1	Very low	0-10	60	50
2	Low	10-25	25	20.9
3	Below Medium	25-50	19	15.8
4	Medium	50-100	12	10
5	High	>100	4	3.3

In the case of *Kattunaikans*, agriculture was only a subsidiary activity. Major source of income was derived from collection of minor forest produce, casual wage labour, forest works and the like. Only a very small per cent of the *Kattunaikans* cultivated plantain, ginger, tapioca, coconut, coffee, pepper or paddy in the available lands.

A careful examination of Table 29 shows that 50 per cent of the respondents had 'very low' gross cropped area followed by 20.9 per cent in the 'low' category. Among the respondents, 15.8 per cent were in 'below medium' category, 10 per cent in medium and only 3.3 per cent in 'high' category in the

case of gross cropped area. Since the *Kattunaikans* were in the pre-agrarian culture, the crop cultivation and the gross cropped area was negligible.

4.2.5.3. Utilization of natural resources

Utilisation of natural resource was measured in terms of the extent of participation of the *Kattunaikans* in hunting, cultivation, honey collection, collection of minor forest produces and fuel wood collection.

Table 30. Distribution of tribes people based on Utilization of natural resources

Sl. No	Category	Score range	Frequency	Percentage
1	Low	5-8	7	5.8
2	Medium	9-11	45	37.5
3	High	12-15	68	56.7

Table 30 shows that 56.7 per cent of the respondents depended heavily on natural resources for their livelihood followed by 37.5 per cent who were having medium level of utilization of natural resources and 5.8 per cent having less utilization. The results can be related to the poverty level of the *Kattunaikans* of Wayanad. WWF (2012) pointed out that the poor people depended more on natural resources than the rich.

Given the proximity to the forest, heavy dependence on forest produces for livelihood, availability of dry twigs and minor timber, life of *Kattunaikans* were closely interwoven with natural resources. Most of the families used firewood as the sole source of fuel and it was collected from forest. It was found that most of the families collected firewood two to three times in a week. All the family members especially husband, wife and sometimes children also actively participated in collecting wood from the forest. The use of traditional sources of fuel was a matter of concern as it emits carbon and other harmful gases in the atmosphere which lead to environmental problem, especially in an ecologically fragile region. For water, they were utilising rivers and hill water. Those who were having land, also practiced agriculture. But their number was very less.

Honey, Gooseberry, lichens, and medicinal plants were some among the minor forest produces. Collection of honey was the main source of income for the

Kattunaikans of Wayanad. The honey harvesting season was from April to September. As April approaches, the *Kattunaikan* men would begin preparations for their treasure-hunt in the deep forests. Wild honeybees make hives every year on the same trees, which the tribal people call 'honey trees'. They spent more than a week in the forests to collect honey. The honey was collected from hives atop trees in the deep forest forms a major chunk of annual income for tribes people, only at night. According to the respondents, the honey production would vary during different years according to the climatic conditions. Their folk knowledge, familiarity with the terrain and ability to withstand the ordeal made the *Kattunaikans* good honey collectors. The honey collectors spent more than a week in the forests to harvest honey, which was not a sweet job as often they had to suffer not just single stings but dangerous attacks by drones. Honey was collected only during night as that was the traditional method.

The heavy dependence of *Kattunaikans* on natural resources can be related to their high level of illiteracy and dwelling in forest. It is pertinent to quote Shylajan (2009), who reported that income, ownership of land and number of educated adults negatively correlated with collection of non-timber forest produces.

4.2.6. Percentage contribution of various capital components to the Livelihood Capital Index

The livelihood capital index was obtained by taking the average of the 5 capital indices. The livelihood capital index ranged from 0-100. A value near to zero means very poor livelihood and that near to 100 means a very good livelihood.

Table 31. Percentage contribution of various capital components to the Livelihood Capital Index

Sl No:	Capital components	Index	CV	% contribution	Rank
1	Physical	59.9	29.88	19.38	I
2	Financial	59.6	54.7	19.28	II
3	Human	51.6	18.02	16.69	III
4	Social	50.6	17.98	16.37	IV
5	Natural	35.9	27.02	11.61	V
Livelihood capital index		51.5	17.28	100	

A perusal of Table 31 gives a clear picture of the contribution of different capital components to livelihood capital. The maximum contribution to the livelihood capital was given by physical capital followed by financial, human, social and natural capital respectively. The physical capital index was estimated as 59.9. Compared to other capitals, the respondents were in a better position in the case of physical capital. It may be due to different tribal development measures adopted by the Governments, both central and state, from time to time. Financial capital also contributed much to the livelihood capital, but the coefficient of variation was 54.7 per cent, which indicates unequal distribution of income among the respondents. Even though they were having low income, among the capital components, financial capital registered the second position. This indicates their backwardness in different capital components. Human capital contributed next to the financial capital. Its contribution was 16.69 per cent only which might be due to the low educational status and poor health condition of *Kattunaikans* of Wayanad district. Social capital occupied fourth rank among the capital components. The low social participation of the respondents may be the reason for the situation. The least contribution was registered by the natural capital, since majority of the respondents did not have sufficient land for cultivation. The Overall Livelihood Capital Index obtained was 51.5 with a CV per cent of 17.28, which indicates that *Kattunaikans* of Wayanad

were in a medium level in the case of livelihood capital and the variation among the respondents in this regard was very less.

4.2.7 Classification of tribes people based on Livelihood Capital Index

Based on Livelihood Capital Index, the respondents were classified into 3 categories named Low, Medium and High, and the results are furnished in Table 32. Those respondents having index value up to 33 were categorized as low, 34-66 medium and 67-100 as high.

Table 32. Classification of tribes people based on Livelihood Capital Index

Sl No:	Category	Frequency	Percentage
1	Low	12	10
2	Medium	93	77.5
3	High	15	12.5
Total		120	100

Among the *Kattunaikans*, 77.5 per cent were having medium livelihood capital index followed by 12.5 per cent having high and 10 per cent having low livelihood capital index. Majority of the respondents were having medium level of livelihood index indicates that there is scope for livelihood promotion activities. Intensive and concentrated livelihood promotion efforts through educational and economic development among the *Kattunaikans* of Wayanad by keeping their culture and value systems intact can help them in achieving better livelihood.

4.3 EXTENT OF DEPRIVATION

Deprivation among the *Kattunaikans* of Wayanad was assessed using a five point continuum. A mean value of 1 to 3 indicates that the respondents were not deprived in terms of the respective items. Mean value more than three means existence of deprivation, and a value near to 5 indicates maximum deprivation. The items were ranked on the basis of mean values.

Table 33. Extent of deprivation among the *Kattunaikans* of Wayanad district

Sl. No	Dimensions of deprivation	Mean	SD	CV	Rank
1	Cultivable land in forest	4.99	0.1	2.01	1
2	Income	3.82	0.69	18.06	2
3	Land	3.77	0.3	7.96	3
4	Employment	3.65	0.62	17.01	4
5	Recreation	3.41	0.33	9.67	5
6	Nutritional security	3.29	0.82	24.94	6
7	Clothing	3.22	0.57	17.71	7
8	Food	3.21	0.77	24	8
9	Credit	2.78	0.3	10.81	9
10	Shelter	2.63	0.87	33.04	10
11	Health	2.17	0.34	15.69	11
12	Forest resources	1.98	0.57	28.8	12
13	Education	1.91	0.41	21.41	13
	Over all	2.83	0.24	8.47	

The results in Table 33 indicate that the respondents were mostly deprived of cultivable land in the forest. This was followed by income deprivation, which was very much prevalent among the *Kattunaikans* of Wayanad district. The next major item was land deprivation. The average annual income and expenditure of the *Kattunaikan* households was low which also shows the overall economic deprivation of this group. During the lean season, they depended only on daily manual work to meet their expenses. Baiju (2011) opined that the tribes people may be less empowered and hence command fewer wage when compared to their non tribal counterparts.

Deprivation in employment, recreation, nutrition, clothing and food was also seen among the *Kattunaikans* of Wayanad district. However, they were not deprived in the case of education, forest resources, shelter and health. The *Kattunaikans* depended mainly on forest and forest produces for their livelihood.

The government provided them the right to collect the forest produces. No restriction was imposed on them in the collection of minor forest produces. In the field of housing, health and education, the Government had implemented a number of programmes from years back. These might be the reasons why kattunaikans were not deprived in the respective areas. In the case of credit also, they were not seen deprived. Since their wants were very less, and were in a stage of spending only what they earned they did not reach a level to feel the need of credit facilities.

As mentioned, deprivation was not noticed in the case of education among the *Kattunaikans* of Wayanad. But they were not effectively utilizing the available educational opportunities. The ignorance of the importance of education, their remote residence and poverty prevented them from sending their children to schools. That may be low educational status was seen among them, though they were not deprived of educational facilities. Nazer (2003) also found out that *Kattunaikans* had comparatively lesser problem with regard to school infrastructure facilities. Fernandes (2008) pointed out that even though special economic programmes and sub-plans were prepared for the tribes people, that did not change their situation because this approach only ensured that schools, hospitals and legal support were made available but not accessible to them.

4.4. SOCIAL EXCLUSION

Social exclusion can be viewed as marginalization from the prevailing social system and its rights and privileges. This may be due to poverty or other social issues. Social exclusion was studied using an arbitrary scale developed for the study. Based on the score range, the respondents were categorised into five classes as shown below.

Table 34. Distribution of the respondents based on Social exclusion

Sl. No	Category	Score range	Frequency	Percentage
1	Negligible	13-17	36	30
2	Low	18-23	61	50.84
3	Medium	24-29	23	19.16
4	High	30-34	0	0
5	Very high	35-39	0	0

Careful examination of Table 34 shows that 50.84 per cent of the respondents fell in the low social exclusion category followed by 30 per cent in the negligible category and 19.16 per cent in the medium level of social exclusion category. Not even a single respondent fell either in high or very high category in the case of social exclusion. Thus the social exclusion was comparatively less among the *Kattunaikans* of Wayanad. Even though they were geographically isolated and economically deprived, no one was prevented from engaging in the normal activities of the society. This may be due to the social situation prevailing in the high literate state of Kerala.

Yet, the livelihood system of *Kattunaikans* was more or less closed. Closed means they need not to interact with non-tribes people for their social, cultural and physical existence. This very nature of *kattunaikans* kept themselves away from the rest of the world. The tribal people had crude form of trade relations with non-tribal world, but that was not sufficient to penetrate their social core. Thus, it is quite clear that exclusion of tribal societies was a self-imposed criterion. The *Kattunaikans* were in a social inertia, which prevented them to come forward to the main stream of the society. But in Kerala condition, other well hearted people tried to include them to the general stream. That may be the reason why not even a single respondent fell in 'high' social exclusion category. Due to the influence of the external world, now some changes could be noticed among the *Kattunaikans* of Wayanad, which means that they were in a stage of transition. Traditionally, *Kattunaikans* were Hindus. Among some respondents, a change towards Christianity was also noticed. This indicates that they were

mingling with other people and in a positive or negative way, change was occurring in their society.

However, medium level of social exclusion was seen among 19.16 per cent of the respondents, which may be due to their high poverty rate. According to Maner *et.al.*, (2007), poverty may be one factor contributing to social exclusion. Poverty is the lack of capability to live a decent life as social beings and it has to be centre staged in any strategy on Social exclusion.

4.5 RELATIONSHIP BETWEEN PROFILE CHARACTERISTICS AND THE DEPENDENT VARIABLES

In order to study the relationship between the dependent variables and independent variables, correlation analysis was done. Thus the correlation of the profile characteristics with the three dependent variables under study viz. Livelihood Capital, Extent of deprivation and Social exclusion was analysed.

4.5.1 Relationship between profile characteristics and livelihood capital index

Table35. Correlation between Profile characteristics and Livelihood Capital Index.

Sl No:	Profile characteristics	Correlation Coefficient
1	Age	0.1716
2	Land holding	0.3903**
3	Family size	-0.1424
4	Value orientation	0.1073
5	Political orientation	0.1275
6	Change resistance	-0.0443
7	Modernization	-0.0697
8	Alcoholism	-0.1531
9	Attitude towards developmental interventions	0.1738

** significant at 0.01 level

Of the eight independent variables studied, only one variable i.e., land holding was positively and significantly correlated with livelihood capital Index. This may be due to the fact that those who were having more land earned more by working on that land. It means that they could utilize their land as a source of income. This finding is in accordance with that of Subedi (1999) in which he pointed out that the economic wellbeing of the people is tied-up with the amount of land owned by the household.

No other variables showed significant relationship with the livelihood capital index. The variables age, political orientation, value orientation and attitude towards developmental interventions showed positive but insignificant relationship with livelihood capital. Family size, change resistance, modernisation and alcoholism showed negative, insignificant relationship with livelihood capital.

4.5.2 Relationship between profile characteristics and Extent of deprivation

Table 36. Correlation between Profile characteristics and Extent of deprivation

Sl No:	Profile characteristics	Correlation Coefficient
1	Age	-0.1198
2	land holding	-0.1724
3	Family size	0.1511
4	value orientation	-0.0799
5	Political orientation	-0.1333
6	Change resistance	0.0769
7	Modernization	-0.0507
8	Alcoholism	0.1254
9	Attitude towards developmental interventions	-0.2829**

** significant at 0.01 level

The results presented in Table 36 revealed that among the nine independent variables only one variable namely attitude towards developmental

interventions showed negative significant relationship with deprivation. This may be due to the fact that those who were having positive attitude would utilize available opportunities and become more empowered leading to less deprivation. The variables alcoholism, change resistance and family size showed positive relationship with extent of deprivation, but they were insignificant. The rest of the variables age, land holding, value orientation, political orientation and modernization showed negative insignificant relationship with extent of deprivation.

4.5.3. Relationship between Livelihood assets and Extent of deprivation

The relationship of various livelihood component capitals with extent of deprivation was also analysed, the results of which are furnished below.

Table 37. Correlation between Livelihood assets and Extent of deprivation

Sl No:	Livelihood assets	Correlation Coefficient
1	Human capital	-0.2072*
2	Physical capital	-0.1451
3	Social capital	-0.2425**
4	Natural capital	0.1212
5	Financial capital	-0.3805**

** significant at 0.01 level

* significant at 0.05 level

A scrutiny of Table 37 brought to focus the following findings, with respect to the relationship between livelihood assets and extent of deprivation. Extent of deprivation was negatively and significantly correlated with financial capital, social capital and human capital. With the increase in income, deprivation would decrease. In the case of social capital, those who were socially more active may be less deprived. Possession of human capital which was the most importance resource would definitely reduce deprivation. Deprivation showed negative relationship with physical capital but it was not significant. Natural

capital showed positive insignificant relationship with deprivation. It's quite natural that poor people would depend more on natural resources.

4.5.4. Relationship between profile characteristics and Social exclusion

Table 38. Correlation between Profile characteristics and Social exclusion

Sl No:	Profile characteristics	Correlation Coefficient
1	Age	-0.0900
2	land holding	-0.0768
3	Family size	0.0320
4	value orientation	0.0373
5	Political orientation	-0.0892
6	Change resistance	0.2503**
7	Modernization	-0.2275*
8	Alcoholism	0.1322
9	Attitude	-0.1154

** significant at 0.01 level

* significant at 0.05 level

Table 38 reveals that change resistance was positively and significantly related with social exclusion at 1% level while modernisation was negatively and significantly related with social exclusion at 5% level. It means that, those who resisted innovative developmental efforts and changes were more prone to social exclusion. Similarly, those who were excluded from the society would naturally resist changes occurring to them. They might think that they were secure in the isolated condition and so would resist changes. As mentioned, modernisation was negatively and significantly correlated with social exclusion. The modernization may be due to their mass media exposure, contact with other people and the external world. Those people who mingle with others for the purpose of education, occupation and the like may naturally be less excluded. The variables family size, value orientation and alcoholism were positively and insignificantly related to social exclusion. Age, land holding, political orientation, and attitude towards developmental interventions showed negative insignificant relationship with social exclusion.

4.6 Constraints experienced by the *Kattunaikans* in livelihood security.

Table 39. Constraints experienced by the *Kattunaikan* tribe of Wayanad in livelihood security.

Sl. No:	Constraints	Mean score	Rank
1	Absence of title deeds (<i>Pattayam</i>)	3.9	1
2	Landless & Inadequate land for cultivation	3.8	2
3	Alcoholism& smoking	3.4	3
4	Growing unemployment.	2.9	4
5	Scarcity of drinking water	2.6	5
6	Wild animal menace	2.6	6
7	Lack of road connectivity	2.1	7
8	Lack of Health Facility	2.1	8
9	Depleting forest resources.	2	9
10	Forest fire	1.9	10
11	Dilapidated houses	1.8	11
12	Lack of educational facilities	1.8	12
13	Lack of electricity	1.6	13
14	Unavailability of social security schemes like pension	1.6	14
15	Declining price of forest produce	1.4	15
16	Flood	1.4	16
17	Drug addiction	1.3	17
18	Corruption and red tapism of administration	1.3	18
19	Eviction	1.2	19
20	Exploitation of women and children	1.1	20
21	Sharp decline in the forest area	1.1	21
22	Denied access to forest	1.1	22
23	Land alienation	1.1	23
24	Lack of credit facilities	1	24

From Table 39, it is evident that the most important constraint faced by these tribes people was the absence of title deeds. Other major constraints

identified in the order of importance were lack of land & inadequacy of land for cultivation, alcoholism and smoking, growing unemployment and scarcity of drinking water. Seasonal unemployment particularly in the monsoon season was one of the main problems being faced by the *Kattunaikans* of Wayanad. Since they were living inside the forest, it was difficult for them to get outside during monsoon season. Wild animal menace was a major threat to the income and livelihood of *Kattunaikans*. Due to wild animal menace, cultivation was not possible except of ginger, even though they wanted to cultivate. Lack of road connectivity was one among the major problems for those who were living inside the forest area. This was mainly due to the restrictions to make roads inside the forest. The least important constraints identified were lack of credit facilities, exploitation of women and children, sharp decline in forest area, land alienation and denied access to forest. Low literacy rate, high drop-out rate in school, nutritional deficiencies, and poor living conditions, and degradation of forest resources, negligence are the long-term problems faced by tribes people (Nazer,2003).

Plate 5. Excerpts from data collection



Plate 3. Kattunaikan ladies during bamboo seed collection



Plate 4. Dilapidated houses of Kattunaikans at Begur colony



Summary

5. SUMMARY

In India, the tribes people constitute one of the weakest sections. Even though a number of developmental interventions have been made, they still remain as backward. Many reasons can be there that push them backward in their development. This study attempts to find out the livelihood strategies of *Kattunaikkan* tribes of Kerala who are one of the most backward among the primitive tribes people of Kerala. Livelihood analysis can be very useful for showing how an intervention fits with the livelihood strategies such as agricultural intensification, livelihood diversification and migration and how people's livelihoods are being enhanced or constrained. This is particularly true in the case of the tribes people, especially primitive tribes people who are the most neglected and subjugated class in rural hierarchy. This study entitled "Livelihood Analysis of *Kattunaikkan* tribe of Wayanad" was conducted to analyse livelihood capital and to study the extent of deprivation of *Kattunaikkan* tribe of Wayanad. Their social exclusion, attitude towards developmental interventions, and the constraints experienced by them in livelihood security were also studied. Based on these a strategy was formulated for the development of *Kattunaikkan* tribes people of Kerala.

The study was conducted in three developmental blocks of Wayanad district namely Sulthan Batheri, Mananthavady and Kalpetta. Based on the population of *Kattunaikkans* in different developmental blocks, proportionate sampling was done for the selection of number of settlements from each block. Thus Idinjakkolly settlement from Kalpetta block, Begoor and Thirunelli settlements from Mananthavady block, Ponkuzhi, Chukalikuni, and Anakamp settlements from Sulthan Batheri block were selected for the study. The random sampling technique was followed in the selection of beneficiaries from different settlements. From each settlement, 20 family heads were randomly selected. Thus a total of 120 *Kattunaikkan* family heads were the respondents.

Based on the above mentioned objectives, detailed review of literature, discussions with experts and scientists in agricultural extension, the variables

were selected. The livelihood capital, deprivation and social exclusion were the dependent variables. For Livelihood analysis, the five capital components under Sustainable Livelihood Framework of FAO (2009) were used. Along with this, other variables suggested by Sabaratinam (2002) were also included under the five capital components. The variable, livelihood capital was measured in terms of five capital components such as Human capital, Physical capital, Financial capital, Social capital and Natural capital. Human capital was measured in terms of five components such as Education, Hygiene, Addictive behavior, Health care seeking behavior and Food habits. Physical capital includes sub variables such as Type of house, Condition of the house, Material possession, Livestock possession, Toilet facilities, Electricity connectivity and Access to safe drinking water. Financial capital was measured by taking into account Annual family income, Expenditure pattern, Savings and Debts. Based on the Financial capital components, Income Sufficiency Ratio was found out. Poverty gap was also found out in the study. For the measurement of Social capital, Social participation and Social relationship were considered. Natural capital included components such as Land holding, Gross cropped area and Utilization of natural resources. Thus, five capital indices were found out, and based on that livelihood capital index was also found out.

The extent of deprivation was measured taking into account the availability and accessibility dimensions. Social exclusion was measured using a scale developed for the study. The profile characteristics of the respondents such as age, family size, landholding, value orientation, political orientation, change resistance, modernization, alcoholism, attitude and constraints also were studied. Besides it was also proposed to formulate a strategy for the development of *Kattunaikan* tribe of Wayanad. The data were collected using a pretested and structured interview schedule. The statistical tools used were frequency, simple percentage analysis and simple correlation analysis.

The salient findings are summarized below:

1. The frequency distribution of the profile characteristics of the respondents revealed that about 55 per cent of the respondents belonged to young category. Exactly 42.5 per cent of the respondents were middle aged and only 2.5 per cent of the respondents were old.
2. Regarding land holding, 52.5 per cent of the respondents were having only upto 10 cents of land holding. Only 0.8 percent of the respondents were having the land holding more than 100 cents.
3. With respect to family size, 30.8 per cent of the respondents were having 6 members in their family and 27.5 per cent having 5 members.
4. Majority (62.5 %) of the respondents were traditional.
5. With respect to political orientation, majority (92.5 %) of the respondents were political
6. It was found that 92.5 per cent of the respondents were least resistant to change.
7. With regard to alcoholism, 45.8 per cent of the respondents were non users of alcohol.
8. Majority (94.2 %) of the respondents were modern. Modern in terms of giving good quality education to children, liking towards modern equipments and so on. Even though they are getting modernized, they wanted to keep their culture and tradition, which is a positive sign.
9. With regard to attitude, 69.2 per cent of the respondents had a high level of disposition towards developmental interventions and only 30.8 per cent of them had an unfavourable attitude.
10. The major findings of the study regarding education revealed that 50.8 per cent of the respondents were illiterate. Among the literates majority were having education up to primary level only.

11. Eighty five per cent fell in the high hygiene category.
12. Study regarding addictive behavior revealed that 63.3 per cent were having high addiction towards tobacco, smoking and alcohol.
13. It was found that 61.7 percent of the respondents were having poor health care seeking behavior.
14. With regard to food habits, rice is the staple food and majority (93.3%) of the respondents took rice twice in a day. Only 13.3 percent of the respondents consumed pulses at least once a day. It is relevant to note that 90 per cent of the respondents had not consumed milk so far.
15. The diet balance index revealed that 92.5 per cent of the respondents were taking unbalanced diet.
16. Human capital, which encompasses personal capabilities and assets including education, hygiene, food habits and health related aspects was estimated as 51.6, which mean that the Kattunaikans tribes people were having medium level of Human capital.
17. More than 50 per cent of the respondents were having concrete houses.
18. It was found that 42.5 per cent of the respondents were having houses in good condition and 41.7 percent with houses in average condition.
19. More than 40 percent of the respondents were having material possession worth 1000-5000 rupees only. Exactly 4.2 per cent of the respondents were not even having materials of 500 rupees.
20. Study regarding livestock possession revealed that 40 per cent of the respondents were having no livestock.
21. It was found that 69.2 per cent of the households had in-house toilet facility while 30.2 per cent of the households had no toilet facility at all.
22. Sixty per cent of the respondents were having electric connectivity in their houses.

23. Majority (74.2%) of the respondents had to go up to 500 m for collecting water.
24. Physical capital, which was assessed on the basis of manmade assets and infrastructure facilities, as estimated as 59.9. This indicates that the tribes people were having a medium level of Physical capital.
25. Annual income of the respondents ranged from Rs.6200 to Rs.96000. The average annual income was found to be Rs 22435/- among the surveyed families.
26. The study on the expenditure of *Kattunaikans* of Wayanad revealed that the expenditure ranged from Rs.6200 to Rs.96000. The mean expenditure was found out as Rs.20605.83/-. The expenditure for food was 45.35 per cent of the total expenditure.
27. The *Kattunaikans* do not have the habit of saving money. Only 24.2 percent of the respondents were having savings.
28. Only 5 persons i.e 4.2 percent had a debt for an average amount of Rs. 9000.
29. Financial capital was estimated by taking into account income, savings and debts as 59.6, which indicates that *Kattunaikans* were in a medium level in the case of Financial capital.
30. The poverty gap was estimated as Rs. 20242. More than 90 per cent of the respondents were trapped in poverty.
31. The social capital analysis revealed that 53.3 per cent of the respondents belonged to the low social participation category.
32. Majority (60.9%) of the respondents were having a good social relationship.
33. Social capital was estimated as 50.6. The result indicates that the respondents can be included in a medium category in the case of

relationship within and between the members of a society and participation in various social organizations.

34. It was found that 50 per cent of the respondents were in the 'very low' category in the case of gross cropped area.
35. Study regarding utilization of natural resources revealed that 56.7 per cent of the respondents depended heavily on natural resources for their livelihood.
36. Natural capital Index was found out as 35.9. The result shows that the *Kattunaikans* were in a below medium level in the case of Natural capital.
37. The Livelihood Capital Index, which was obtained as the average of five capital indices viz., Human, Physical, Financial, Social and Natural was estimated as 51.5, which indicates that the respondents were in a medium level in the case of Livelihood capital.
38. It was found out that 77.5 per cent were having medium livelihood capital index and 12.5 per cent having high
39. The respondents were mostly deprived of cultivable land in the forest, income, land, employment, recreation, nutrition, clothing and food.
40. Study regarding social exclusion revealed that 50.84 per cent of the respondents fell in the low social exclusion category followed by 30 per cent in the negligible category and 19.16 per cent in the medium level of social exclusion category.
41. Results of the correlation between the independent and dependent variables of respondents revealed that among the selected nine independent variables only one variable namely landholding showed positive significant relationship with livelihood capital.
42. With regard to deprivation, only one variable namely attitude towards

developmental interventions showed negative significant relationship with deprivation.

43. In the case of social exclusion, the variable change resistance showed positive significant relationship and modernization showed negative relationship.
44. Extent of deprivation is negatively and significantly correlated with human, social and financial capital.
45. The most important constraint faced by the tribes people is the absence of title deeds. The other constraints identified in the order of importance were landless or inadequate land for cultivation, alcoholism and smoking, growing unemployment, wild animal menace and scarcity of drinking water.

Strategies for the development of tribes people.

The study, though limited in scope, brings out some important constraints faced by the *Kattunaikans* of Wayanad which need to be corrected for the upliftment of tribes people. From the present study it was found out that educationally, *Kattunaikans* were so backward, about 50 per cent of the respondents were illiterate. Among the literates, majority were having education up to primary level only. So primary importance has to be given to the educational development of the *Kattunaikan* tribes people. Study also revealed that even though they want to live in a better way as the modern people, the tribes people want to keep their tradition and culture. So the *Kattunaikans* has to be developed by considering their norms and values without losing their cultural identity. Some of the strategies are discussed below.

- Empowerment in social, economic and educational front and for defense against exploitation, deliberate and concerted educational programmes are to be implemented. There may be chances of losing their traditional values and customs due to educational empowerment. So value oriented

education giving special emphasis to the importance of cultural identity has to given. 'Cultural education', which means educational system of special emphasis to the nature, importance of culture and traditional values has to be included with the formal system of education. So that along with educational development, they will be culturally oriented also.

- Even though a number of developmental programmes are coming for the development of tribes people, they are utilizing a negligible percent of them or they are getting the benefits of only a few. This may be due to their unawareness or low empowerment to get things done which are for them. So government, government agencies and civil society should work for the uplift of the tribes people. Empathetic pro-active political will and affirmative action on the part of government and civil society is needed.
- The *Kattunaikans* of Wayanad mainly depended on forest and forest produces for their livelihood. The marketing of the forest produces is mainly through co-operative societies. Almost all the respondents were linked to co-operative societies through the marketing of produces. So economic development activities through these societies will be feasible. Contributory saving schemes through the co-operative societies (contributing equal amount by the government, of those which the tribes people are investing through the sale of minor forest produces) have to be established so that that it help them through financial assistance at contingency.
- Main streaming the tribes people without affecting their cultural heritage and identity preferably in economic and educational domains. In the first stage of development, anganwadis and high schools have to be started near to their colonies and those who are educated in the colonies have to be posted as teachers so that 'problem of language'. can be rectified. The tribes people are talking a language, which is a mix of Kannada and Malayalam, children find it difficult to understand Malayalam or English.

Many of the children stop education by primary school itself mainly due to lack of money for transport facility to schools. These two problems can be avoided by providing up to high school facility near to their colonies.

- Empowerment of women through self-help groups, ensure participation of all, so that they will be economically empowered and teach them the importance of nutrient rich food and all, so that they can feed their children properly and this will ultimately provide them better health to the future generation. Self employment opportunities have to be provided for women especially through the value addition of forest produces which the male counter parts are collecting.
- Distribution of adequate cultivable land, to those who needed near the habitats of the *Kattunaikan* tribes so as to ensure livelihood security. Also efforts should be there from the part of forest department to dig trenches around the cultivable land so as to provide protection from wild animals since wild animal menace is one of the major problems faced by the *Kattunaikans* of Wayanad especially for cultivation.
- The study found out that the life expectancy of *Kattunaikans* is less and it may be due to their poor health condition. So establishment of deaddiction centres, health education and counseling through these centres will help them live in a better way.
- Efforts should be there from the part of government to provide proper title deeds ('Pattayams') to *Kattunaikans* of Wayanad.
- Since the *Kattunaikans* are living inside forest area and in close contact with nature, they are rich indigenous knowledge about wild yams and medicinal plants. Promotion and utilization of their rich indigenous system of medicine through collaboration with Health department especially for ayurvedic medicines. Efforts should also be there for getting remuneration for revealing their traditional knowledge.

- A common forum for the *Kattunaikans* in different areas so that they can share values each other, can identify those who are educated and well in their community and different opportunities existing.

Suggested areas of future research

1. Studies to revalidate the livelihood index to be conducted for its application in other areas of weaker sections.
2. Action research studies may be conducted to analyse livelihood of different tribal communities in Kerala.
3. In depth studies into the deprivation and social exclusion of different tribes people in Kerala may be undertaken.
4. In depth analysis of forest dependence of *Kattunaikan* tribes people and the impact of climate change on them in their livelihood.
5. Research work can also be initiated in the tribal development programmes and the reasons for the success or failure of different Government and Non-Governmental Organizations' efforts.

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Appendices

APPENDIX- I

Attitude of Kattunaikkan tribe towards developmental interventions

Sl.No	STATEMENTS	't' value
1	Developmental interventions are not intended for the needy one.	0.30
2	Benefits of the developmental interventions are always utilized by a very small section of the tribes people.	2.67*
3	Developmental interventions never bring any betterment to tribes people.	0.73
4	Developmental efforts results in changing the identity of Kattunaikkan tribes.	2.78*
5	Developmental interventions help the tribes people to reach the main stream of the society.	1.91*
6	Upliftment of tribes people through developmental programmes is a futile dream.	4.36*
7	Developmental efforts help to improve the social participation and interaction with non-tribes people.	0.44
8	The tribes people will not be affected if the developmental programmes are cancelled/ discontinued.	3.46*
9	Developmental interventions help to bridge the gap between tribes and non-tribes.	2.64*
10	Bureaucracy and red tapism creates impediments for the tribes people in availing desired benefits.	1.46
11	Developmental efforts are not giving any betterment of tribes people and is merely a waste of time & money.	2.08*
12	It is very difficult for the tribes people to get the benefit of the developmental efforts.	1.51
13	The needs of the tribes people are not taken into account while formulating the developmental programmes.	1.96*
14	The developmental efforts have brought about good changes in the tribal community.	1.84*
15	It is easy for the tribes people to get the benefit of the developmental efforts.	2.23*
16	A group of officials are utilizing the benefits of the developmental interventions	0.73
17	The developmental interventions are against the ethnic culture of Kattunaikkan tribes.	2.17*
18	Developmental interventions by the government help to improve the standard of living of tribes people.	2.55*

* selected statements for the final scale

APPENDIX- II

KERALA AGRICULTURAL UNIVERSITY
 DEPARTMENT OF AGRICULTURAL EXTENSION,
 COLLEGE OF AGRICULTURE, VELLAYANI, THIRUVANANTHAPURAM

From

Vellayani

Date:

Dr. A. Sakeer Husain

Assistant Professor (SS)

To

Dear Sir/Madam,

Mrs. Sreeja S, M.Sc. Student of this department is undertaking a research study entitled "Livelihood Analysis of *Kattunaikan* tribe of Wayanad" under my guidance. The main objective of this study is to analyze the Livelihood of *Kattunaikan* tribe of Wayanad, to study the extent of deprivation, social exclusion and attitude of the tribe towards developmental interventions.

The student is developing a scale on "Social exclusion". In this regard some statements to identify social exclusion are listed. On the right hand side of each statement, there are set of columns representing degree of relevancy of the statements. You are requested to tick (✓) in the appropriate column which indicates degree of relevancy of the statement on a three point continuum namely "most relevant, relevant, least relevant". **Please note that response indicates the relevancy of the statements in the real sense and not of yours as a judge.** Please see that no statement is left out and kindly return the same at the earliest possible time.

Thanking You

Yours faithfully,

Dr. A. Sakeer Husain

Social exclusion

Social exclusion is a multidimensional process of progressive social rupture, detaching groups and individuals from social relations and institutions and preventing them from full participation in the normal, normatively prescribed activities of the society in which they live.

Sl. No	STATEMENTS	Relevancy Weightage
1	Denied from participating in social functions like marriages of non tribes people.	74.86*
2	Denied from visiting theatres for watching movies and other recreational activities.	60.00
3	Entry to religious institution is restricted.	69.14*
4	Denial of technical support & information access from government institutions like krishibhavan	54.84
5	The contribution given by Kattunaikkan tribe in the society goes unrecognized.	68.57
6	Denied from taking water from public wells/public taps.	73.14*
7	Not allowed to express opinion in political institutions like Gramasabhas.	70.29*
8	The opportunities to participate and express opinion in Self Help Groups are prevented	70.03*
9	Denied from taking food from restaurants/hotels.	59.43
10	Entry to Government institutions is restricted.	62.86
11	Denial of opportunities to work with non tribes.	65.71*
12	Denial of opportunity to participate in decision making for developmental interventions.	68.00*
13	Denial of admission to prestigious educational institutions.	70.29*
14	Even though highly paid jobs are there, Kattunaikkan tribes are prevented from getting it.	61.71
15	Denied from visiting the house of non tribes.	71.43*
16	Denied from expressing opinion in public places.	66.85*
17	Travel with non tribes in public conveyance facilities like buses, autorikshaws, motor cars, train etc. prevented.	65.14*
18	Children are getting equal opportunities to go and study in Anganwadis with children of non tribes people.	70.71*
19	Not allowed to participate in public meeting.	68.00*

* selected statements for the final scale

APPENDIX- III**INTERVIEW SCHEDULE****Livelihood Analysis of *Kattunaikan* tribe of Wayanad**Respondent No:

1. Name:
2. Age :
3. Address
 - a) House No :
 - b) Hamlet :
 - c) Village :
 - d) Panchayat :

4. Sub tribe if any :

5. Family details				
Size of family		Number		
a. Men				
b. Women				
c. Children				
d. Migrants for months				
Purpose				
a. education				
b. Labour				
c. Job				
d. Any other(specify)				
6. Educational Status				
Sl.no	Category	Educational status	Family educational status	
1	Illiterate		1	2 3 4 5
2	Can read			
3	Can read & write			
4	Primary school			
5	Middle school			
6	High school			
7	Higher secondary school			
8	Graduate and above			

9	Professional degree		
7. Possession of house : Yes/No			
Type of House	Own	Own house but constructed with government support	On Rent/ Rented
Thatched			
Tiled			
Asbestos			
Concrete			
Condition of the House	Poor	Average	Good
Are you having electricity in your house? Yes/ No			
8. Land holding			
Land holding (in cents)	Type of land		
	Wet land	Garden land	Dry land
No land			
5-10			
11-25			
26-50			
51-100			
101- 250			
>251			
9. Nature of farming			
Crops alone	Area (in cents)		
a. Sole cropping			
b. Mixed cropping			
c. Multi- tier cropping			
Mixed farming (specify)			
Any other			
10. Live stock possession			
Type of animal	No:		
Goat			
Sheep			
Buffalo			
Bullock			
Milch cow			
Piggery			
Poultry			
Duckery			
Others (specify)			
11. Annual income:			
Amount (in Rupees):			

12. Sources of income	
Source	Total income
Collection of forest produces	
Wage labour	
Agriculture	
Livestock	
Fish culture	
Sericulture	
Any other (Specify)	
13. Expenditure pattern	
Activities	% of money spent
Cultivation	
Food	
Cloth	
Health	
Education	
Livestock management	
Electricity	
Ceremonies	
Recreation	
Fuel	
Travel	
Alcohol consumption	
Others	
14. Seasonal variation in expenditure	
Activities	Month in which expenditure is more
Cultivation	
Clothing	
Education	
Livestock management	
Ceremonies	
Others	
15. Savings	
Nature of saving	Amount saved in Rupees
Cash in hand	
Bank	
Post office	
Groups	
Chits	
Insurance	
Ornaments	

Number of times food taken in a day

18. Sources of food

Source	
Farm	
Forest	
Purchased	
Gifts from friends and relatives	

19. Material possession

Sl No:	Materials possessed	No:
1	Country/ Iron plough	
2	Levelling board	
3	Thresher	
4	Farm cart	
5	Pump set	
6	Knapsack sprayer	
7	Power sprayer	
8	Tractor/Power tiller	
9	Bow & arrow	
10	Radio	
11	Telephone	
12	Mobile phone	
13	Television	
14	Bicycle	
15	Motor cycle/ scooter	
16	Car	
17	Refrigerator	
18	Washing machine	
19	Household utensils (a) Mud (b) Brass (c) Steel (d) Copper (e) Others	
20	Sewing machine	
	Furniture (a) table (b) Chair (c) Cot (d) Almirah	

(e) Others				
20. Education of children		No.		
Remaining at home without studying				
Working without studying				
Both studying and working				
Going to school and not working				
Studying in government school				
Studying in private school				
Studying in convent school				
Studying in Residential school				
21. Health				
(1) Hygienic factor				
a. Do you take bath? Y/N				
How often Twice a day, daily, Once in two days, Once in three days, Once in a week, occasionally.				
b. Do you wash your clothes?				
How often Daily, Once in two days, Once in three days, Once in a week, occasionally.				
c. Do you have a separate latrine for your home?				
(2) Do you or any of your family members have the following habits?				
Sl No:	Habits	Frequency		
		Regularly	Occasionally	Never
1	Smoking			
2	Use of alcohol			
3	Use of narcotics/ drugs			
4	Betel chewing			
(3) Health care seeking behavior				
Sl. No:	Kind of treatment measures	Government hospitals	Private hospitals	Both
(a)	Usually visit hospitals/ health care centers even for minor illness			
(b)	Usually visit hospitals when illness became			

	serious.			
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22. Alcoholism

Level of intake		Frequency of intake	
Less moderate		Daily	
Moderate		Weekly	
Habitual drunkard		Occasionally	

23. Social participation

Do you participate in the activities of any organization?

If yes, please indicate your position and frequency of attendance.

Sl. No.	Organisation / Institution	Member	Office bearer	How often do you attend the meeting		
				Regularly	Occasionally	Never
1	No membership in any organisation					
2	Grama panchayat					
3	Gramasabha					
4	Ooru Vikasana Samathi					
5	Oorukkoottam					
6	SHGs					
7	Co-operatives					
8	Tribal organisations					
9	Others (specify)					

24. Nature of relationship with others

Sl No:	Relationship	Relationship status		
		Good	Average	Poor
1	Neighbours			
2	Friends			
3	Relatives			
4	Others			

Extent of deprivation

1-Not at all deprived

2-Not Deprived

3-Neutral

4-Deprived

5-Most deprived

Sl No;	Statements	Extent of deprivation				
		1	2	3	4	5
1	Food a. Availability of food items which you would like to eat b. The purchasing power to buy the food items. Nutritional security a. The availability of nutrient rich food items b. The accessibility of nutrient rich food items in the community					
2.	Shelter a. Availability of shelter with adequate facilities b. Availability of sufficient space c. Availability of a peaceful atmosphere in home					
3	Clothing a. Availability of textiles/weaving centers in nearby area b. Accessibility to the textile shops c. Purchasing power of desired cloths					
3	Land a. Availability of cultivable own land b. Availability of leasable cultivable land c. Accessibility of leasable cultivable land d. Accessibility of other cultivable land					
4	Forest a. Availability of cultivable land in the forest b. Accessibility to cultivate the land in the forest					
5	Forest resources a. Availability of forest resources in adequate quantity b. Accessibility to collect forest resources					
6	Income a. Opportunities exists, to earn income to lead a decent life b. Accessibility to utilize opportunities to lead a decent life.					
7	Credit a. Availability of credit facilities					

	b. Availability of Banks in nearby areas to invest money				
	c. Availability of ATM facilities				
	d. Accessibility to the financial institutions				
9	Employment				
	a. Employment Opportunities exists, to lead a decent life				
	b. Accessibility to utilize employment opportunities to lead a decent life.				
10	Education				
	a. Availability of education institutions in near by area.				
	b. Accessibility of education institutions in near by area.				
	c. Proper utilization of the serviced of the teacher.				
	d. Availability of physical facilities in the near by school				
	e. Utilization of physical facilities				
	f. Availability of mid day meal in the school				
	g. Utilization of mid day meal				
11	Health				
	a. Availability of hospitals in the nearby area				
	b. Accessibility to the hospitals in the nearby area				
	c. Availability of adequate equipments in the nearby hospital				
	d. Accessibility to the proper utilization of these equipments				
	e. Availability of adequate no. of doctors				
	f. Accessibility to utilize service of doctors				
	g. Availability of adequate no. of supporting staff				
	h. Accessibility to utilize services of supporting staff.				
	i. Availability of adequate medicines				
	j. Accessibility to utilize medicines				
12	Recreation				
	Availability of theatres, recreation clubs in nearby areas				
	Accessibility to utilize the facilities				

Social exclusion

Sl. No.	Statements	Always	Sometimes	Never
1	Denied from participating in social functions like marriages of non tribes people.			
2	Entry to religious institution is restricted.			
3	Denied from taking water from public wells/public taps.			
4	Not allowed to express opinion in political institutions like Gramasabhas.			
5	The opportunities to participate and express opinion in Self Help Groups are prevented			

6	Denial of opportunity to participate in decision making for developmental interventions.			
7	Denied from expressing opinion in public places.			
8	Denial of opportunities to work with non tribes.			
9	Not allowed to participate in public meeting.			
10	Travel with non tribes in public conveyance facilities like buses, autorikshaws, motor cars, Train etc. prevented.			
11	Denied from visiting the house of non tribes.			
12	Children are not getting equal opportunities to go and study in Anganwadis with children of non tribes people.			
13	Denial of admission to prestigious educational institutions.			

Attitude of Kattunaikan tribe towards developmental interventions

Sl No;	Statements	A	N	DA
1	Developmental interventions by the government help to improve the standard of living of tribes people.			
2	The developmental interventions are against the ethnic culture of <i>Kattunaikkan</i> tribes.			
3	Benefits of the developmental interventions are always utilized by a very small section of the tribes people.			
4	Developmental efforts results in changing the identity of kattunaikkan tribes.			
5	Developmental interventions help the tribes people to reach the main stream of the society.			
6	Upliftment of tribes people through developmental programmes is a futile dream.			
7	The tribes people will not be affected if the developmental programmes are cancelled/ discontinued.			
8	Developmental interventions help to bridge the gap between tribes and non-tribes.			
9	Developmental efforts are not giving any betterment of tribes people and is merely a waste of time & money.			
10	It is easy for the tribes people to get the benefit of the developmental efforts.			
11	The needs of the tribes people are taken into account while formulating the developmental programmes.			
12	The developmental efforts have brought about good changes in the tribal community.			

Profile characteristics of *Kattunaikan* tribe

1. Political orientation

Please state agreement or disagreement to each of the statements below

Sl No.	Items	Agree	Disagree
1	Democracy is the best political principle and philosophy for ideal governance		
2	Individual approach will not help in solving problems.		
3	Organizing people for asserting their genuine and fundamental rights is an important pre-requisite for a democratic society.		
4	Political parties are inevitable and indispensable for development of a society		

2. Modernization

Sl. No.	Items	A	UD	DA
1	It is felt that sending children to English medium schools will give them better education			
2	Use of latest agricultural practices will give more profit			
3	Possessions of latest gadgets help in easy access of information			
4.	Ready to move from traditional to modern way of living.			

3. Value – orientation (Conservatism – progressivism)

Sl. No.	Items	SA	A	DA	SDA
1	It is believed that value system associated with traditional ways of living hinders the development process of your society				
2	It is believed that most of the indigenous practices are eco-friendly and contribute to the sustainable development				

3	It is felt that an appropriate combination of modern and indigenous practices is essential for the sustainable development of tribal society				
4.	What is predestined must have its course				
5.	The traditional ways of life should be the guiding lines of our behaviour				
6.	Scientific knowledge can never be equal to traditional knowledge				

4. Change Resistance

Sl no.	Statements	Always	Sometimes	Never
1	Very much hesitant to adjust with a new situation.			
2	I would like to continue the present situation and change is not needed.			
3	Change in life is essential according to the changing world.			
4	Change from the present condition make me uncomfortable.			
5	Continuing present way of life will not give any progress in life.			
6.	Ready to welcome new developmental interventions			

The constraints experienced by the *Kattunaikan* tribe in their livelihood security

Sl No:	Statements	Very severe	Severe	Not severe	Not at all severe
1	Lack of road connectivity				
2	Lack of electricity				
3	Scarcity of drinking water				
4	Wild animal menace				
5	Dilapidated houses				
6	Absence of title deeds(Pattayam)				
7	Exploitation of women and children				
8	Alcoholism& smoking				
9	Drug addiction				

10	Growing unemployment.				
11	Sharp decline in the forest area				
12	Declining price of forest produce				
13	Denied access to forest				
14	Depleting forest resources.				
15	Land alienation				
16	Lack of credit facilities				
17	Eviction				
18	Lack of educational facilities				
19	Lack of Health Facility				
20	Corruption and red tapism of administration				
21	Flood				
22	Forest fire				
23	Unavailability of social security schemes like pension				
24	Landless & Inadequate land for cultivation				

LIVELIHOOD ANALYSIS OF KATTUNAIKAN TRIBE OF WAYANAD

by

SREEJA.S

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Abstract of the thesis

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Abstract

8. ABSTRACT

The study entitled “Livelihood Analysis of *Kattunaikan* tribe of Wayanad” was conducted to analyse Livelihood capital and to study the Extent of deprivation of *Kattunaikan* tribe of Wayanad. Their Social exclusion, Attitude towards developmental interventions, and the Constraints experienced by them in livelihood security were also studied.

The study “Livelihood Analysis of *Kattunaikan* tribe of Wayanad” was conducted in three developmental blocks of Wayanad district namely Sulthan batheri, Mananthavady and Kalpetta. The selection of number of settlements from each block was done based upon the population of *Kattunaikans* in each block. Three settlements Random sampling technique was followed in the selection respondents. From each settlement, 20 family heads were randomly selected. Total sample size for the study was 120.

The dependent variables selected for the study were Livelihood capital, Extent of deprivation and Social exclusion. Independent variables were selected which includes Age, Landholding, Family size, Value orientation, Political orientation, Change resistance, Modernization, Alcoholism and Attitude. The correlation between dependent and independent variables was studied using correlation analysis. Constraints experienced in livelihood security were also recorded from a number of identified statements as perceived by the tribes people.

The data were collected using pre-tested structured interview schedule prepared for the study. The statistical tools like mean, percentage analysis and correlation analysis were used to analyse the data.

The salient findings are presented below.

Majority of the *Kattunaikans* (55%) belonged to young category. Most of the *Kattunaikans*(52.5%) had only upto 10 cents of land holding. More than 30 per cent of the *Kattunaikans* had six members in their family. Majority (62.5%) of

the respondents were traditional. Ninety two point five per cent of the respondents were politically oriented. Majority (92.5%) of the respondents were least resistant to change. Forty five point eight per cent of the respondents were non users of alcohol. More than 90 percent of the respondents were modern. Majority (69.2%) of the respondents had a positive attitude towards developmental interventions.

In the case of Human capital, it was observed that 50.8 per cent of the respondents were illiterate. More than three fourth (85%) of the respondents were included in the high hygiene category. Majority (63.3%) were having high addictive behaviour. More than half (61.7%) of the respondents were having poor health care seeking behavior. Majority (92.5%) of the respondents were taking unbalanced diet. Human capital was estimated as 51.6.

With respect to Physical capital it was found out that More than 50 per cent of the respondents were having concrete houses. Exactly 42.5 per cent of the respondents were having houses with good condition. More than 40 percent of the respondents were having Material possession of only 1000-5000 rupees. Forty per cent of the respondents were having no livestock possession. More than half (69.2%) of the households have in-house toilet facility. Sixty per cent of the respondents were having electric connectivity in their houses. Majority (74.2%) of the respondents have to go up to 500m for collecting water. Physical capital was estimated as 59.9

Annual income of the respondents ranges from Rs.6200 to Rs.96000. The average annual income was found to be Rs 22435/-. The mean expenditure was found out as Rs.20605.83/-. Only 24.2 percent of the respondents were having savings. Only 4.2 percent had a debt for an average amount of Rs. 9000. Financial capital was estimated as 59.6. The poverty gap was estimated as Rs. 20242. More than 90 per cent of the respondents are trapped in poverty.

The study indicated that 53.3 per cent of the respondents belong to the low social participation category. Majority (60.9%) of the respondents were having a good social relationship. Social capital was estimated as 50.6

With respect to gross cropped area, 50 per cent of the respondents were in the category of 'very low'. More than half (56.7%) of the respondents depend heavily on natural resources for their livelihood. Natural capital Index was found out as 35.9.

The Livelihood Capital Index was obtained as 51.5. More than three fourth (77.5%) of the respondents were having medium livelihood capital index

The respondents were mostly deprived of cultivable land in the forest, income, land, employment, recreation, nutrition, clothing and food.

Nearly half (50.84%) of the respondents were in the low social exclusion category.

The relationship between independent and dependent variables revealed that landholding showed positive significant relationship with Livelihood capital. Attitude showed negative significant relationship with Deprivation. Change resistance showed positive significant relationship and modernization showed negative relationship with social exclusion. Extent of deprivation is negatively and significantly correlated with Human capital, Social capital and Financial capital.

The most important constraint faced by the tribes people is the absence of title deeds. Landless and inadequate land for cultivation, alcoholism and smoking, growing unemployment, wild animal menace and scarcity of drinking water were the other important constraints faced by the *Kattunaikan* tribe in livelihood security.

Kattunikans have to be developed by considering their culture and tradition. From the study it is clear that even though they were having an inclination towards their values, they are getting modernised. It can be said that they are in a

transition stage. They are less empowered. Empowerment through education is essential. Illiteracy, income deprivation and associated ill effects are very much prevalent among them. So educational development by utilizing the educated *Kattunaikans* as teachers, establishment of value addition units of forest produces and in the settlements especially for women and contributory savings schemes (through co-operative societies) have to be established.