LIVELIHOOD ANALYSIS OF IRULA TRIBE OF ATTAPPADY

by

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DECLARATION

I hereby declare that this thesis entitled "**Livelihood analysis of Irula tribe of Attappady**' 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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Certified that this thesis, entitled **"Livelihood analysis of Irula tribe of Attappady** is a record of research work done independently by **Ms.SHINCY. NI (2009-11-130)** 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 him.

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Introduction

1. INTRODUCTION

Indian society is a bewildering mosaic of different traditions and cultures. The tribes constitute a rich, unique, varied and critical element of Indian tradition. The ethnic minority groups in India constitute around eight percent of the total population. There are 573 Scheduled Tribes living in different parts of the country (Government of India, 2001). 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.

Tribespeople who are otherwise known as “Adivasis”, are generally docile, simple, honest, hard working and hospitable. But economically they are exploited, physically oppressed, socially ostracised and culturally isolated. Economically poor and backward, socially segregated and humiliated, they are politically unconscious as they have little education to understand issues in the right perspective. But the scenario is undergoing change because of modernisation.

Tribals in India form the very segment of the weaker sections of the society with their traditional skills and resources. They have been living as homogenous groups in clearly identifiable but generally inaccessible, remote forest and hilly areas. Lack of social and economic infrastructural facilities make their integration with the rest of the population poor. This natural isolation has deprived them of the fruits of development and scientific and technological advances on the one hand and it has led to their distinctive life styles, cultures and languages on the other. In fact, they are the most vulnerable section of the population and they are exploited by this age old social and cultural handicaps coupled with environmental factors. These elements have contributed towards their lower level of living and various degrees of economic

backwardness. Hence the constitution of India provides guarantee for the protection of the welfare of the tribals under Articles 15(4), 46,244(i) and 339.

Tribal population is the aboriginal inhabitants of our state who have been living a simple life based on natural environment and have cultural patterns congenial to their physical and social environment. The tribal development measures adopted during the second half of the last century in the state is still insufficient to improve their socio economic conditions. Every developmental intervention has to be assessed for its effect on quality of life and human well being. A development that while being sustainable in terms of resources over generations and across space recognises the legitimate claim of each person in a society to be an active and productive participant in the development process. The development status of tribal communities, whom the Indian constitution recognizes as a vulnerable group requiring special attention, has not been any different from that of other outlier communities in Kerala. Among the outlier communities, tribal communities 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 tribespeople and the choice of technology and policies will heavily influence the sustainability of tribal livelihood. Government of Kerala initiated several policies and programmes for the upliftment of the tribespeople. Even then, the benefits percolated to the tribals are not in proportion to the investment made and the question of sustainability of development still exists. The thesis envisaged to bring out a detailed picture of one of the most prominent tribal group in the Palakkad district.

1.1 Need for study

Though, Kerala has achieved remarkable social sector development, celebrated as 'Kerala Model of Development', it is observed that the development process fell short to encompass erstwhile tribal communities in its development process. The main objective of livelihood analysis is to understand and describe the means of living of people particularly the deprived classes of rural society. As a development tool livelihood analysis offers intensive method of capturing the story of how villagers 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/ extensification, livelihood diversification and migration etc. and how people's livelihoods are being enhanced or constrained. This is particularly true in the case of the tribal people who are the most neglected, dispossessd and subjugated class in rural hierarchy. Inspite of the implementation of all the developmental activities, the progress made by the tribespeople is mearge.

Hence, a study of this kind is of immence necessity to further augment and sharpen the developmental strategies and programmes in a much more effective way and to do social justice to the most discarded sections of our society. Even though many institutions and organizations have conducted studies regarding the livelihood aspects, they were mostly exploratory in nature. Hence, this study assumes particular significance in the light of the fact that this is a pioneering research attempt in this area.

1.2 Scope of the study

This study was conducted in Attappady block only and within that it was restricted to *Irula* tribe. If it was extended to more districts and more than one tribe generalisations would have been possible. As per the present study, the sections of

the society that depend on traditional resources for livelihood and the vulnerable sections like scheduled castes and scheduled tribes in the state were left out from Kerala's development experience. When comparing the status of these outlier communities to the general population one can observe that the factors that were kingpins in the chariot of Kerala's development experience, like high literacy, favourable sex ratio, better demographic indicators, Government spending in service sector, remittance income etc. have played only a limited role in the human development of these communities. In this context, Livelihood capital index proposed to be developed for the study will be of 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 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 tribespeople will be of phenomenal utility to those interested in research in these lines. The results can be used to support the decisions made by researchers and policy makers in their effort to secure sustainable development for tribespeople.

Objectives

Conduct livelihood analysis and study the extent of deprivation of *Irulas* of Attappady. The constraints experienced in livelihood security, the attitude of *Irulas* towards developmental interventions will also be studied.

1.3 Limitations of the study

Being a single investigator the reasearcher faced many limitations . Many different tribal hamlets were found scattered throughout the highlands of Attappady. Most of these were not accessible by motorised vehicle and must be reached onfoot.

Language was another limitation. The tribal language might vary 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 free from personal bias and prejudices. Care was taken to avoid this and make the study as objective as possible.

1.4 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, objectives and limitations of the study are discussed. The second chapter covers the review of the studies related to the present study. The third chapter is on methodology which provides the details on selection of the study area, sampling, data collection procedure, variables selection, empirical measures used, design of the research, statistical tools used etc. In the fourth chapter the results in relation to 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. THEORETICAL ORIENTATION

This chapter aims at developing a theoretical framework on the concept of "Livelihood analysis of Irula tribe of Attappady". This has been furnished on the basis of definitions, ideas and concepts. Each topic presented in the chapter is associated with the available research findings either directly or indirectly. This helps to give a proper orientation of the study and also to place the problem on a theoretical perspective. This also assists in evaluating one's own research efforts by comparing them with the related effort of others.

The review has been presented under the following heads:

2.1 Concept of livelihood analysis

2.1.1 Human capital

2.1.2 Social capital

2.1.3 Natural capital

2.1.4 Physical capital

2.1.5 Financial capital

2.1.6 Livelihood capital index

2.2 Concept of deprivation

2.3 Tribespeople of Kerala

2.3.1 Tribal communities in Palakkad

2.3.2 Irula tribe of Attappady

2.4 Profile characteristics of tribespeople

2.5 Attitude of Irulas towards developmental intervention

2.6 Constraints experienced by *Irulas* in attaining livelihood security

2.1 CONCEPT OF LIVELIHOOD ANALYSIS

Chambers (1994) described that livelihood analysis is concerned with stability, crises and coping, relative income, expenditure, credit and debt, in reality, livelihood analysis analyses multiple activities.

Ramakrishnan (1993) revealed that 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.

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.

According to Rajendralal (2005) 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 has the view 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.

2.1.1 HUMAN CAPITAL

Even if tribes are favourably disposed of towards innovations, their socio-economic and cultural barriers deter them for translating the innovations into action (Sushama, 1979).

Chandra (1992) mentioned that though the Toda have the maximum literacy rate yet it is the Irula, and then some group of Kurumba, who are maximum in number in Government Tribal Residential School (GTRS).

Gupta (2004) reported that the favourable factor for tribal development is high literacy both among the males and females.

Menon (2005) considered that , next to law and order, the highest priority should be accorded to Education, especially at the primary level. The Madhava Menon committee's main recommendations are:

1. Teachers belonging to the ST of Attappady may be identified and posted to schools in Attappady, in order to get over the shortage of personnel because of reluctance of outsiders to be posted there.
2. Permanent Teacher-appointees should not be posted at Attappady; instead these vacancies may be filled on temporary basis by selecting unemployed qualified members of ST of Attappady.
3. Special Recruitment drive to recruit 100 primary school teachers, exclusively reserved for members of ST of Attappady

Kerala Shastra Sahitya Parishad (2006) reported that in Kerala the lower socio-economic class largely depends on Government healthcare provisions and others depend more on private healthcare provisioning. Better facilities are the reason for preference of private sector, while lower cost is the major reason for seeking healthcare from government hospitals.

Nair (2007) reported that among the Irulas and Mudugas, women who resort to the allopathic system of medicine are more than those who resort to the indegenous

system alone. He also stated that those who resorted to both systems of medicine during pregnancy where more amoung the Irulas than among the Mudugas.

Wang and Costello (2009) investigated the innovations in small businesses and found that innovation intensity is dependent on the availability and sufficiency of financial and human resources. Furthermore, an organisational culture supporting new product development and an innovation-conducive structure / mechanism were found to influence the innovation outcomes.

2.1.2 SOCIAL CAPITAL

2.1.3 NATURAL CAPITAL

Rekha and Vasundhara (2001) reported that the tribal socio-economic system is close to forest. Their culture as well as livelihood support system is closely linked with forest. From the forest the tribals collect timber for house construction, fuel wood, wild tubers, leafy vegetables, mushrooms and different kinds of Non-Timber Forest Products (NTFPs). According to her, definitely a part of them is exchanged for meeting the cash requirement of the household but most importantly a major portion is used for consumption purpose. The part that is exchanged in the market for meeting the household requirements is normally made through at the doorstep or in the village *haat/* market. These commodities are exchanged for other essential commodities or sometime for cash, she observed.

Government of Kerala (2009) identified that among the backward communities only Muthuvans and Irula have reported to be holding more than 50 cents and most of the other communities have reported land holding of less than 10 cents or no land at all.

2.1.4 PHYSICAL CAPITAL

Muraleedharan and Sankar (1993) reported that domestication of animals is an alternative source of income of the Irulas of Attappady. Tribes of Attappady is endowed with a huge animal population consisting of cattle, goat and poultry and the development of animal husbandry has received prime importance ever since the formation of Integrated Tribal Development Project. Though majority of the tribes have domestic animals, most of them did not utilize the produce at home, instead they used to sell them to earn a few rupees to support their existence.

According to Saini (2004) mismanagement is the major cause for water shortage especially when people are not affluent. When the municipal water supply fails, poor rely upon ground water sources to ensure water supply.

Nair (2007) reported that out of 80 Irula households in Attappady only two have water sealed toilet facility and two have open pit, while all other houses do not have any facility.

A report of Government of Kerala (2009) indicates that there is significant disparity in the status of sanitary latrines in the case of Irula community, where 59 per cent have sanitary latrines while 41 per cent houses reported having no latrines. The variation is because while most of the Irula houses were built by AHADS which are new, and some of them are old houses where the latrines are not usable.

2.1.5 FINANCIAL CAPITAL

Mathur (1977) reported that the most important causes of indebtedness among the Irulas are their primitive agricultural technology, illiteracy, low wages, absence of marketing infrastructure and their social and religious obligations.

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. A survey conducted by her to ascertain the quantum of indebtedness among Irulas of Nakkupathy in Attappady revealed that one of the worst forms of exploitation to which these tribes are exposed is through traditional money lending. Her study on indebtedness revealed that the utilisation of loan for social and religious ceremonies is highest among Irulas.

George and Krishnaprasad (2006) noticed that most of the suicide victims in the Wayanad district of Kerala were in debt trap of private money lenders. The mental and social tensions, as well as stress in the family are due to the economic insecurity create an atmosphere of utter helplessness and disarray.

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.

Government of Kerala (2009) indicates that most of the members in the *Irula* community are agricultural labourers and the average household income ranges from Rs.350 to Rs.2350. Most of the households reported their average monthly income to be in Rs.1850-Rs.2350 range. It was also reported that *Irulas* have availed/ utilised bank loan for rearing livestock, maintenance of houses, treatment of illness and education of children.

2.1.6 LIVELIHOOD CAPITAL INDEX

The term index has been defined by different authors in connection with various fields of activities.

Theodorson and Theodorson (1969) defined index as any measurable or observable phenomena that is used to indicate the presence of another phenomenon, that cannot be measured directly or conveniently. According to them indicator refers to a single measure of an observable phenomenon , reserving the term index for a more complex combination of indicators.

Wolman (1973) stated that an index is a sign or number indicative of change in magnitude or point to a state of fact.

2.2 CONCEPT OF DEPRIVATION

Belavady et.al. (1959) showed that calorie and protein intake of Irulas and Kurumbas of Nilgiri hills were deficient whereas the calorie intake of Todas and Kotas was satisfactory with slight protein insufficiency.

KFRI (1980) in a study has recommended that Attappady is a relic of earlier vegetal luxuriance distributed in an altitudinal range of 250 m to 2300m and the rainfall zones. Ownership of the forests with little concern for scientific management resulted in over exploitation, denudation and irreversible decline of the vegetation. It was only the area reserved and brought under forest management which escaped irreversible trend of decline.

Thakur (1986) reported that the tribes occupy a significant position in Indian population; they contribute variety and richness of culture. Over centuries they have preserved distinct style of life. They stand out in sharp contrast to the general population of the land. Different tribal groups represent different levels of socio-economic development. They differ greatly in their members and complexity of social organisation, and there are wide variations in their customs and institutions.

As per a report published by FAO (1989) the impact of the declining consumption of forest foods have led to a poorer quality diet; most notably diets are becoming less diverse as people rely mostly on purchased foods.

Sharma (1989) observed that the development of the tribes and the development of the forests, as two co-equal goals, are fully consistent. The plan for tribal development must take the forest resources as the base on which tribal economy can progress with greatest confidence. Planning without participation of the people and their active involvement cannot be realistic.

Muraleedharan and Sankar (1991) reported that though majority of Irula tribes have their own land and cultivate different crops most of them were found to be working as agricultural labourers. Except Kurumbas all other tribes of Attappady have taken into settled agriculture from shifting cultivation and because of disposition of land, many of them became agricultural labourers. Due to low economic returns, low rainfall and land alienation to the settlers they were forced to work as agricultural labourers to meet their day-to-day essential needs.

Singh (1994) reported that some of the Irulas have made their agricultural land more productive by clearing stones and weeds from the land. Sometimes they transfer their land to the non Irulas but the whole transaction is kept secret.

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.

Malik (2004) stated that no organism does live in isolation, nor is the behaviour of any organism understandable without the reference to other organisms. An ecological deterministic approach has to be developed to understand the facets of tribal life and culture, he added.

Chacko (2005) reported that in almost all developing and developed societies, tribals are viewed as the 'other'- an anachronism or an object of curiosity. Initially marginalized by the creation of the boundaries of the nation- state, these indigenous people were further hedged in by colonialism and, then, by the indifferent or patronizing modern state. Forced by technology, the market economy, social pressures and state policy, the way of life of tribal communities has undergone significant change in recent decades, he concluded.

According to Menon (2005) incidence of crime against tribal women was perceived to be very high. This was attributed as partly due to their involvement in Tai Kula Sanghams, spontaneous organisations of women, that had been formed to curb and control activities of illicit distillers and vendors of alcoholic liquor.

Sen (2005) viewed that, the standard of living of a society should be judged not by the average level of income but by people's capabilities to lead the life they value. The economic advancement of a poor family needs a broader enabling and sustaining environment. Established network need maintenance as in health care and water supply system. Deprivation in basic necessities for well being such as housing

quality, access to drinking water, good sanitation and electricity lighting need infrastructural upgradation.

According to Mitra and Singh (2006) the scheduled tribes are educationally backward along with other backwardness which prompted the governments to make elementary education as priority scheme in all the tribal sub-plans from the 5th five year plan onwards and it got a thrust with the formulation of National Policy on Education. This was not only because of the constitutional obligation, but also because of the felt necessity for the total development of the tribal communities in the changing socio-economic scenario which was possible only through the instrument of education. They also reported that the tribal communities 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.

Nair (2007) reported that the percentage of area alienated to total area was highest for Mudugas (46%), then for Irulas (43%), followed by Kurumbas (10%). Among the three panchayats in Attappady the alienation is highest in Agali(45%) and lowest in Pudur (19%) while sholayur falls in between ie.36%

Kerala State Planning Board (2008) reported that 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. When comparing the incidence of poverty among all sections, we find that the incidence of poverty in ST population is about 3 times that of general population.

Samu (2008) reported that large areas of the forest were destroyed by the timber and land mafia who snatched tribal's land. He also reported that in many states, the tribals did not have documents to prove ownership of the land on which they had been living for generations.

Aerthayil (2008) reported that globalisation has brought about tremendous economic changes in India and its effect is differently experienced by different sections of people. He also reported that globalization had a negative impact on tribals in Kerala, the most backward and marginalized sections in the state, on their livelihood, including employment and the availability of essential commodities, and on the socio-cultural life, including their cultural and religious practices.

Government of Kerala (2009) indicates that the accessibility of facilities to tribal community is a major issue as the majority of the tribal settlements is 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 Km 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 Km away and therefore 60 per cent of the tribal households had to travel at least 20 Km to reach there.

2.3 TRIBESPEOPLE OF KERALA

"The term tribes commonly signifies a group of people speaking a common language, observing uniform rules of social organisation and working together for common purpose. Broadly, tribe is an aggregated group of people sharing social values, common dialect, territory and culture. But in a restricted sense, tribe means a

group of people usually under a chief and maintaining distinct cultural traits" (Dubey, 1977)

A 'Tribe' is an anthropological concept. It is referred to by certain authors as 'Animistic' or 'Aboriginal'

Tribe may be defined as "a group of people speaking a common language, observing uniform rules of social organisation and working together for common purposes 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 descent" (Verma, 1996)

A Scheduled Tribe is primarily an administrative and constitutional concept. It refers to a tribal community which is enlisted under Article 342 of the Indian Constitution.

2.3.2 IRULA TRIBE OF ATTAPPADY

Singh (2002) reported that among the different stories of the origin of *Irulas*, their version is that they are the progenies of a couple who came out from an anthill and escaped from a deluge in a canoe. The canoe after its wandering reached the western ghats where they clung to a branch of the "Irul" tree just above the water. After the deluge they climbed down, hence they got the name, meaning the one who came down the Irul tree.

2.4 PROFILE CHARACTERISTICS OF TRIBESPEOPLE

2.4.1 Family size

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 and the average family size of the Irula families surveyed was found to be only 4.73.

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

2.4.2 Food security

Indira (1993) reported that the requirements of various foods by the tribal population were below the Recommended Dietary Allowances suggested by Indian Council of Medical Research for an adult man engaged in moderate activity.

2.4.3 Environmental orientation

According to Prabhu (1993) tribals are forest dwellers. Even today almost 90 per cent of them still live in forest tracts. Their intricate link with the forest as their *anna, aarogya, aasra* (food, well being, security) had been the basis of their symbiotic relationship, their physical and cultural survival. He also reported that as the modern management systems have failed, it is time to look at the tribal holistic, futuristic, ecologically sustainable and culturally specific modes of management and development as the new way with responsible stewardship of the renewal resources and capacity to determine their own future and quality of life.

According to Joseph (2004) in the past, there were little awareness about the importance of flora and fauna and their conservation in natural habitat. Since tribes and forest have two way relation, the development of tribes symbiotically lead to environmental enrichment.

2.4.4 Family educational status

Chandrasekhar et al.(1990) reported that the educational status of Irula children was found to be better than the adult. The high literacy status among the children may be due to the free educational facilities enjoyed by the scheduled tribes and the financial support received from the governmental and non governmental agencies for the same. Another notable point in this context was that the tribal families gave equal treatment for boys and girls with respect to education.

Nair (2007) reported that on education Irulas, Mudugas and Kurumbas of Attappady spend only 3.1 per cent, 2.01 per cent & 2.88 per cent respectively. Even though the government gives concessions for education, this low spending on education reflects their attitude towards education.

2.4.5 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.

2.4.6 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.

2.5 ATTITUDE OF IRULAS TOWARDS DEVELOPMENTAL INTERVENTION

Prasad (1988) opined that to revitalise the tribes, socio-economically and psychologically is rather challenging. Living for centuries in hilly and forested ecology, they are adjusted to the tradition-oriented style of life. Once they get adjusted, they have developed the attitude of 'no hangers'. To save the tribes from further decline, study their social and economic structures in depth and prepare social schemes, and evolve effective machinery to arrest the decline in population and accelerate the tempo of transformation on a healthy line.

D'Souza (1990) conducted a study on the effects of planned interventions among tribals 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 tribals.

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 individuals 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.

2.6 CONSTRAINTS EXPERIENCED BY *IRULAS* IN ATTAINING LIVELIHOOD SECURITY

Gopalakrishnan (1976) reported that the major constraints of Irula tribe of Attappady are land alienation, lack of credit facilities and consequent exploitation, low income, low literacy, Poor housing conditions and lack of communication facilities.

Methodology

3.METHODOLOGY

This chapter deals with the description of the methods and procedures adopted in conducting the present research study. The various aspects are furnished in this chapter under the following subheadings.

3.1 Research Design

3.2 Locale of the study

3.3 Selection of sample

3.4 Operationalisation and measurement of variables

3.5 Methods used for data collection

3.6 Statistical tools used for the study

3.1 Research Design

A research design is a fundamental plan for gathering the empirical data necessary to corroborate or refute the basic conceptual framework models or theories being investigated (Hoffer and Bygrave, 1992)

Ex-post facto design was employed in the present study. According to Kerlinger (2004) research design is the plan, structure and strategy of investigation conceived so as to obtain answers to the research questions and to control variance.

3.2 Locale of the study

The study was conducted in Palakkad district of Kerala. This district has been purposively selected for conducting the study because this is one of the districts in Kerala having the highest concentration of tribal settlements of *Irulas,* who constituted 80% of tribal population and the widespread ecological degradation consequently affected livelihood security of people adversely, especially the tribal population.

Brief description of the district

Palakkad is the largest district in Kerala bordered on north by Malappuram district, on the south by Thrissur district, in the west by Thrissur and Malappuram districts and east by Coimbatore district of Tamilnadu. Palakkad is 13.6 per cent urbanised and the district titled as the 'granary of Kerala'. Its population is 2617482 and population density 584/ Sq. Km. The total area of the

district is 4480 Sq.Km which is 11.5 per cent of the state area. Of the total area, about 1360 Sq.km of the land area is covered by forest. Palakkad district comprises of five taluks, 13 blocks, 4 municipalities, 163 revenue villages, one district panchayat, 13 block panchayat and 91 grama panchayats. The Sahya ranges bordering the region and the 32 Km long gap (Palakkad gap) in the mountains assert a dominant influence on the climate of the region. The district lies between 10º21' and 11º14' north latitude and 76º02' and 76º54'east longitude.

3.2.1 Selection of grama panchayats

Attappady, one of the prominent forest regions of Kerala is situated in the northeastern part of Palakkad district of Kerala. It is one of the 43 tribal development blocks in India. According to 2001 census the tribal population constituted 39,665 while the total population was 26, 17,482. (Government of India, 2001). Attappady is predominantly a tribal block and it lies at the eastern half of the Mannarghat taluk of Palakkad. Administratively the Attappady development block consists of three grama panchayats namely Agali, Pudur and Sholayur and it spreads over six revenue villages such as Agali, Kallamala, Pudur, Padavayal, Sholayur and Kottathara. The population of Attappady consists of tribespeople and non-tribespeople (Settlers or *vanthavasis*). The non-tribal population, which largely consists of settlers from the states of Tamil Nadu and Kerala, constitutes 55 per cent of the population, and the ST and SC comprise 45 per cent. The tribesfolk of Attappady reside in small nuclear villages called *Oorus*. Each *Ooru* contains, on an average, 50 houses constructed in rows, close to one another. The *Irulas* form the majority among the tribals and live in 144 hamlets.

3.3 Selection of sample

The study was conducted in three panchayats of Attappady tribal developmental block namely Attappady I (Agali panchayat) Attappady II (Pudur panchayat) and Attappady III (Sholayur panchayat). Numerically dominant and relatively advanced group among the three tribes in the area, *Irulas* are distributed in all the three panchayats of Attappady. One I*rula* settlement from

each of the three Panchayats will be identified for the study. From these settlements 40 respondents (20 male and 20 female) were selected randomly for the study making the total sample size 120. Accordingly the total number of respondents for the study was 120. Besides the respondents, 30 social activists also were purposively selected to find out their perception about the tribal livelihood.

3.4 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.Attitude of *Irulas* towards developmental interventions

Independent variables

1. Age
2. Family size
3. Family education status
4. Food security
5. Environmental orientation
6. Alcoholism
7. Self confidence
8. Political orientation.

3.4.1 Operationalisation and measurement of the dependent variables

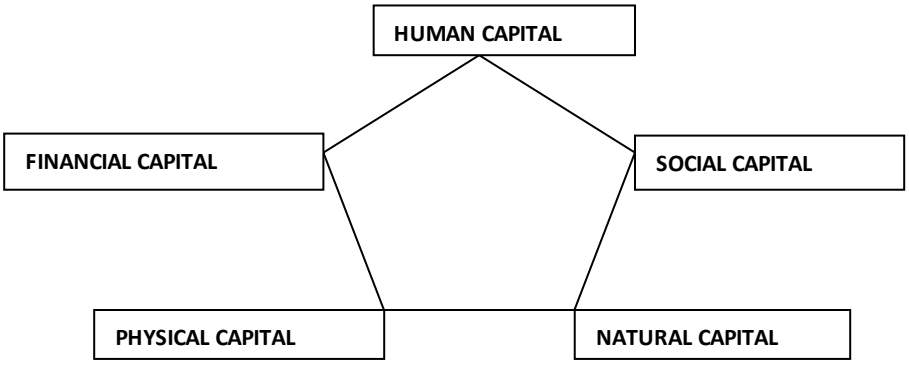
3.4.1.1 Livelihood capital

A livelihood is operationally defined as comprising the capabilities, assets, (including both material and social resources) and activities required for 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 several components, some of which represent the economic categories of capital, and others - claims and access to resources.

Generally, five categories of assets are identified as contributing to livelihoods (FAO, 2009). They are human assets, social assets, natural assets, physical assets and financial assets. A livelihood is sustainable when it can cope with and recover from stresses and shocks and maintain or enhance its capabilities and assets both in the present and in the future, while not undermining the natural resource base. People draw on a set of 'capital assets' as a basis for their livelihoods.

In this study Sustainable Livelihood Framework (FAO, 2008) was used for conducting livelihood analysis. For analysing the availability and access of people to various capitals, we use the 'asset pentagon' which consists of human assets, social assets, natural assets, physical assets and financial assets. The asset pentagon lies at the core of the livelihoods framework 'within' the vulnerability context. A vulnerability context is a complex array of influences having direct or indirect impact on livelihoods and it frames the external environment in which people exists.

Livelihood asset pentagon



For assessing the livelihood capital status of *Irulas* in the study area, a measurement procedure was developed. Livelihood capital comprising five component capitals as was given in the Sustainable Livelihood Framework and its component parameters were measured using scoring procedure developed for the study or adopted from elsewhere with suitable modifications. The component parameters were selected on the basis of consultation with experts and review of literature.

Component parameters and method of quantification

Component capitals	**Component parameters**
3.4.1.1.1 Human capital	
	3.4.1.1.1.1 Formal education
	3.4.1.1.1.2 Informal education
	3.4.1.1.1.3 Mass media exposure
	3.4.1.1.1.4 Social participation
	3.4.1.1.1.5 Contact with extension agency
	3.4.1.1.1.6 Leadership quality
	3.4.1.1.1.7 Innovativeness
	3.4.1.1.1.8 Addictive health behaviour
	3.4.1.1.1.9 Healthcare seeking behavior
	3.4.1.1.1.10 Constraints in availing healthcare services.
	3.4.1.1.1.11Anthropometric measurements
3.4.1.1.2 Social capital	
	3.4.1.1.2.1 Relationship with family members
	3.4.1.1.2.2 Relationship with others
	3.4.1.1.2.3 Activities in public space
	3.4.1.1.2.4 Concerns towards the weaker sections
	3.4.1.1.2.5 Interdependence and networking
3.4.1.1.3 Natural capital	
	3.4.1.1.3.1 Land owned
	3.4.1.1.3.2 Utilisation of Natural resources to fulfil livelihood requirements
	3.4.1.1.3.3 Common property resources
3.4.1.1.4 Physical capital	
	3.4.1.1.4.1 Type of house
	3.4.1.1.4.2 Nature of house based on ownership

	3.4.1.1.4.3 Livestock possession
	3.4.1.1.4.4 Material possession
	3.4.1.1.4.5 Access to safe drinking water
	3.4.1.1.4.6 Toilet facilities
	3.4.1.1.4.7 Electricity connectivity
	3.4.1.1.4.8 Distance to be travelled
3.4.1.1.5 Financial capital	
	3.4.1.1.5.1 Income per month
	3.4.1.1.5.2 Expenditure pattern
	3.4.1.1.5.3 Indebtedness
	3.4.1.1.5.4 Savings propensity
	3.4.1.1.5.5 Assets as land
	3.4.1.1.5.6 Borrowing pattern

Component capitals

3.4.1.1.1 Human capital

Human capital is operationally defined as the skills, knowledge, ability to labour and good health that together enable people to pursue different livelihood strategies and achieve their livelihood objectives

3.4.1.1.1.1 Formal education

It is defined as the level of educational status attained by the respondent at the time of investigation. The level of education was measured with the help of scale developed for the study.

The scoring procedure was based on the minimum number of years required to complete each level of class. The scoring procedure used was as follows.

Category	**Score**
Illeterate	1
Can read only	2

Can read and write	3
Primary school	4
Middle school	7
High school	10
Higher secondary school	12
Graduation	15
Post graduation and above	17

3.4.1.1.1.2 Informal education

Informal education is operationalised as educational intervensions outside the formal system of education. The level of informal education was measured with the help of scoring procedure developed for the study.

It was obtained by recording the number of informal educational interventions to which a respondent is exposed to till date. Some of the identified interventions were promoter training course, embroidery and fabric painting, grass broom making, compost making, decopaech, sericulture, jam and jelly making, animal husbandary, coir making, scientific and sustainable harvest, saksharatha class, book binding, mobile phone repairing and vegetable cultivation. A score of '2' was given if he/she has participated and a score of '1' for non participation. The score of an individual respondent is the sum of scores over all of the items.

3.4.1.1.1.3 Mass media exposure

It refers to the degree to which the respondent was exposed to various mass media channels. This was measured by the procedure followed and used by Prasidha (2006) with slight modifications. The score of an individual respondent is the sum of scores overall of the items. The possible score ranged from 6-18.

Sources	**Frequency**		
	Regularly (3)	Occasionally (2)	Never (1)
News paper			
Radio			

Television			
Films			
Magazines			
Internet			

3.4.1.1.1.4 Social participation

It refers to the content and nature of participation of tribespeople in various activities. In this study social participation was measured using the scale followed by Fayas (2003).

The scale has two dimensions namely membership in organizations and participation in organizational activities. The scores were assigned as follows.

1. Membership in organization

Membership in each organization	1
Office bearer in each organization	2

2. Frequency of participation

Always	3
Sometimes	2
Never	1

The scores by a respondent on the above two dimensions were multiplied across each items for all the organizations which gave his/her social participation score. The score ranged from 14-84.

3.4.1.1.1.5 Contact with extension agency

It refers to the extent of contact of tribespeople with different extension agencies. The scoring procedure used and the response was measured as follows. The scores obtained on each of the category were summed up to arrive at the individual score. The possible score ranged from 13-39.

Category of personnel	**Frequency of contact**		
	Regularly (3)	Occasionally (2)	Never (1)
NGO's 1.Nature 2.ASSO 3.Sarang 4.Ushus 5.Bharathayathra center 6.Kaanakam 7.Vishwamythri 8.Guruvu 9.Unarvu			
10.Agricultural officer/ Assistant			
11.AHADS			
12.VEO			
13.LVEO			
14.Health workers			
15. Others			

3.4.1.1.1.6 Leadership quality

It is operationally defined as the ability of the tribespeople to influence others to co-operate in the attainment of a goal. It was measured using the scale followed by Meera (2001) with slight modification. The scale consisted of five statements weighted on a three point continuum always, sometimes and never with scores 3, 2 and 1 respectively. The score ranged between 5-15.

3.4.1.1.1.7 Innovativeness

Innovativeness refers to the interest and desire of the tribespeople to seek new techniques and technologies suitable for their livelihood.

The scale developed by Seema (1997) was used in the measurement of this variable. The scale consisted of five statements of which three were negative. The responses were obtained on a five point continuum ranging from 'strongly agree' to 'strongly disagree' with scores of 5,4,3,2 and 1 in that order. The scoring procedure was reversed in the case of negative statements. The possible scores ranges from 5 to 25.

3.4.1.1.1.8 Addictive health behaviour

Unhygienic health behavior is operationally defined as the extent to which a respondent is addicted to the habits of smoking, consumption of alcohol, drugs etc. It was obtained by asking the respondent whether he got any of the above habits.The scores were assigned as follows. The score of an individual respondent is the sum of scores overall of the items. The score ranged between 4-12.

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

3.4.1.1.1.9 Healthcare seeking behavior

It is operationally defined as the personal actions resorted to for promoting optimal wellness, recovery, and rehabilitation.

The scoring was as given below.

Healthcare seeking nature	**Score**
Usually visit Hospitals/ Health care centres even for minor illness	2
Usually visit Health care centres only when illness became serious/ chronic.	1

3.4.1.1.1.10 Constraints in availing healthcare services.

In the present study constraint is operationalised as difficulties or problems faced by the respondents in availing healthcare services.

Based on review of literature and discussions with experts, various constraints faced by the tribespeople in availing healthcare services were identified. Of those, 10 important items were selected. The responses were collected on a three point continuum viz. Very important, Important and Least important with the scoring of 3,2 and 1 respectively. The scores of the above 10 items were summed up to get the final score of the respondent. The possible score ranged from 10-30.

3.4.1.1.1.11Anthropometric measurements

Anthropometry refers to the measurement of the human individual. Body mass index (BMI) is defined as the individual's body weight divided by the square of his or her height. The formulae universally used in medicine produce a unit of measure of kg/m^2

Procedure adopted for anthropometric measurements:

Weight for age

For weighing platform weighing balance was used as it is portable and convenient to use in the field. The weighing scale was checked periodically for accuracy. The scale was adjusted to zero before each measurement. The subject was having minimum clothing and was asked to stand on the platform of the scale, without touching anything and looking straight ahead. The weight was recorded to the nearest 0.25 Kg. Each reading was taken twice to ensure correctness of the measurement.

Height for age

To determine height the anthropometric rod designed by the National Institute of Nutrition was used. The rod was placed perpendicular to the ground, taking care to see that the floor was even and not rough. The subject was asked to remove the slippers, stand with the centre of the back touching the scale, with the feet parallel and heels, buttocks, shoulders and back of the head touching the rod. The head was held comfortably erect, the arms hanging loosely by the side. The

ruler was held on the top of the head in the centre, crushing the hair at right angle to the scale and the height read off from the lower edge of the ruler to the nearest 0.5 cm. Each reading was taken twice to ensure correctness of the measurement.

The current value settings are as follows: a BMI of less than 16.0 may indicate severely underweight, a BMI of 16.0 to 18.5 suggests the person is underweight, a BMI of 18.5 to 25 indicate optimal weight, a value from 25 to 30 suggests the person is overweight, obese class I value ranges from 30 to 35, Class II from 35 to 40 and a number above 40 suggests that the person falls in obese Class III.

3.4.1.1.2 Social capital

Social capital is operationally defined as the social resources upon which people draw in pursuit of their livelihood objectives. These are developed through networks and connectedness, membership of more formalised groups; and relationships of trust, reciprocity and exchanges.

This variable was measured with the help of a number of component parameters viz.relationship with members within the family, relationship with members outside the family, activities in public space, concern towards the weaker sections and interdependence and networking altogether indicates interpersonal relationship status

3.4.1.1.2.1 Relationship with family members

The scale was developed for the study and it consists of the type of bilateral relationships the members have inside the family and the quality of such relationships. The score of an individual respondent is the sum of scores overall of the items. The scoring was as given below.

Relationship	**Relationship status**		
	Good (3)	**Average (2)**	**Poor (1)**
Father-child			
Mother-child			
Father-mother			

Brother- sister			
Brother-brother			
Sister-sister			

The scores range from 4-12

3.4.1.1.2.2 Relationship with others

This variable was quantified using the type of the relationship maintained by the respondent with the neighbours, peer groups and relatives. The score of an individual respondent is the sum of scores overall of the items. The scores were assigned as follows.

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

The possible score ranged from 3-9

3.4.1.1.2.3 Activities in public space

A public space refers to the social space that is open and accessible to all, regardless of gender, race, ethnicity, age or socio-economic level.

It refers to the extent of participation of the tribespeople by identifying the main activities in the settlement and it was measured by the frequency of participation viz. Always, Sometimes and Never with the scoring of 3, 2 and 1 respectively. The activities identified were informal get togethers and discussions, participation in the neighbourhood groups and involvement in community activities like festivals, death and marriage. The score of an individual respondent is the sum of scores overall of the items.

3.4.1.1.2.4 Concern towards the weaker sections

The degree of concern of the respondents have towards the weaker sections of the society were collected on a five point continuum viz., 'very much concerned', 'concerned', 'neutral', 'not concerned', 'not at all concerned' with weightage of 5,4,3,2 and 1 respectively. The possible score ranged from 4-20.

3.4.1.1.2.5 Interdependence and networking

Interdependence refers to the relationship and contact the respondents have with members of a social system in such a way that each is mutually dependent on the others. The respondent's interdependence and networking towards the particular sections of the society was studied and the scores were assigned as follows.

	Extent to which you maintain interdependence and reciprocal relationships		
	Regularly (3)	**Occasionally (2)**	**Never (1)**
Neighbours			
Friends			
Relatives			
Government functionaries			
Social activists			
Others			

The score of an individual respondent is the sum of scores overall of the items. The possible score ranged between 5-15.

3.4.1.1.3 Natural capital

Natural capital is operationally defined as the natural resource stocks from which resource flows and services useful for livelihoods are derived.

3.4.1.1.3.1 Land owned

It refers to be in the position of authority of possessing sufficient land and right and control over it and its resources for a secure living.

This will be measured by directly asking the respondents to indicate the total land owned by him / her and would be recorded as cents.

3.4.1.1.3.2 Utilisation of Natural resources to fulfil livelihood requirements

Utilisation of Natural resources was calculated by identifying the natural resources requirements of the tribespeople and the extent of utilisation of the natural resources to fulfil these requirements. The scoring was as given below and the individual score of each of these requirements were added up to get the final score.

Type of requirements	**Always (3)**	**Sometimes (2)**	**Never (1)**
Hunting			
Cultivation			
Honey collection			
Collection of minor forest produce			
Fuel wood collection			

3.4.1.1.3.3 Common property resources

It was operationally defined as a type of goods consisting of a natural resource system whose size or characteristics make it costly, but not impossible, to exclude potential beneficiaries from obtaining benefits from its use. Unlike pure public goods, common property resources face problems of congestion or overuse, because they are subtractable. A common property resource typically consists of a core resource which defines the stock variable, while providing a limited quantity of extractable fringe units, which defines the flow variable. While the core resource is to be protected or entertained in order to allow for its continuous exploitation, the fringe units can be harvested or consumed.

The scale has two dimensions namely access and quality. The scores were assigned as follows.

1. Access

Unlimited/ unrestricted	2
Highly restricted	1

2. Quality

Currently in good condition	3
Depleting	2
Almost depleted	1

The scores by a respondent on the above two dimensions were multiplied against each items for all the resources which gave his/her common property resource score. The score ranged from 6 to 36.

3.4.1.1.4 Physical capital

Physical capital was operationally defined as the man made assets and the basic infrastructure and producer goods needed to support livelihoods**.** Infrastructure is commonly a public good that is used without direct payment, consisting of changes to the physical environment that help people to meet their basic needs and to be more productive. Producer goods are the tools and equipment that people use to function more productively. Producer goods may be owned on an individual or group basis or accessed through rental or 'fee for service' markets, the latter being common with more sophisticated equipment.

3.4.1.1.4.1 Type of house

The scale has two dimensions namely material by which the house was made and the condition of the house. The scores were assigned as follows.

1. Type of material

Type of material	**Score**
Thatched shed (wall & roof)	1
Mud walled thatched	2
Brick or laterite walled thatched	3
Brick or laterite walled tiled	4
Concrete house (small)	5
Concrete house (big)	6

2. Condition of the house

Good	3
Average	2
Poor	1

The scores by a respondent on the above two dimensions were multiplied against each items for all the types which gave his/her type of the house score. The score ranged from 1 to 18.

3.4.1.1.4.2 Nature of house based on ownership

This variable was measured by directly asking the respondents whether the house was constructed by themselves or with the support of the government. The scores were assigned as follows.

Own house	2
Own house but constructed by the government support	1

3.4.1.1.4.3 Livestock possession

Livestock possession is referred to as the quantum of animals possessed by an individual.

The score depends on the weightage of the items as given in the Table. and the scores were assigned after judgement rating.

Type of animal	Score
Bullock(one)	2
Mitch cow(one)	2.5
Goat(one)	1.5
Piggery(one)	1.5
Duckers(upto 25 nos.)	1
Poultry Duckers(upto 25 nos.)	1

3.4.1.1.4.4 Material possession

Material possession was referred to as the materials (both productive and non-productive) possessed by an individual.

The score depends on the weightage of the items as given in the table and the scores were assigned after judgement rating.

Possessions	Score
Tractor/ Power tiller	7
Motor cycle/ Scooter	6.5
Pump set	6
Thresher	5.5
Farm cart	5
Sewing machine	4.5
Knapsack sprayer	4
Power sprayer	4
Radio/ Transistor	3.5
Bicycle	3
Country/ Iron plough	2.5
Levelling board	2.5
Almirah	2
Table	1.5
Cot	1
Chair	0.5

3.4.1.1.4.5 Access to safe drinking water

This variable was operationally defined as the respondents access to unpolluted source of water for daily use.

Measurement procedure by NSSO (2002) was slightly modified for this study. It was measured as distance from home to unpolluted source of water for daily use.

The scores were assigned as follows.

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

3.4.1.1.4.6 Toilet facility

This was measured by directly asking the respondent whether they possess toilet facilities in their house or not. The responses were rated on a two point continuum of Yes (2)/No (1)

3.4.1.1.4.7 Electricity connectivity

This was measured by directly asking the respondents whether they have electricity connection in their house or not. The responses were rated on a two point continuum of Yes (2)/No (1)

3.4.1.1.4.8 Distance to be travelled

It was measured by directly asking the respondents to indicate their total distance both to and fro to collect firewood from the forest. The daily figure was added up to get the weekly figure.

3.4.1.1.5 Financial capital

Financial capital is operationally defined as the financial resources (mostly cash and equivalent) that people use to achieve their livelihood objectives. This helps as a medium of exchange critical to the successful utilisation of the other factors/assets.

3.4.1.1.5.1 Income per month

The annual income of the family was the total earnings of the household for a month including the income through all the sources. This was obtained by directly asking the respondent, the income of his/ her family for a month. The income from all the sources was added up to get the total income.

3.4.1.1.5.2 Expenditure pattern

It was defined as the total amount spent on food, non-food consumptive items, travelling, recreation etc. Total expenditure was obtained by the summation of these individual expenses as given below.

Items	**Total expenses per month**
Food	
Cloth	
Electricity	
Medical expenses	
Education	
Religion/ Social function	
Taxes	
Alcohol	
Recreation	
Travelling expenses	
News paper/ Magazine	
Fuel	
Mobile phone charges	
Others	

3.4.1.1.5.3 Indebtedness

It was defined 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.

3.4.1.1.5.4 Savings per year

Refers to the amount which was saved out of daily expense for future use as a source of credit in emergency situations.

This was obtained by directly asking the respondent, the savings of his/ her family at the time of the survey.

3.4.1.1.5.5 Assets as land

It refers to be in the position of authority of possessing sufficient land and right and control over it and its resources for a secure living. This was measured by directly asking the respondents to indicate the total land owned by him / her and was noted down as cents.

3.4.1.1.5.6 Borrowing pattern

It denotes the source of borrowing to meet consumptive and productive needs.

This was measured by directly asking the respondents to indicate their source of borrowing by putting a tick (√) mark in the appropriate column.

Source of borrowing	
From non institutional sources for daily expenses	
From non institutional sources for productive purposes	
From non institutional sources for consumption purposes	
From non institutional sources when contingency occurs	
From Income Generation Activity Group	
Only from institutional sources	

Measurement of livelihood capital index

Livelihood capital will be assessed using livelihood capital index which will be derived from five component capital indexes viz. Human capital, Social capital, Natural capital, Physical capital and financial capital. The procedure for computing component capitals is detailed as follows.

Human capital

Variable Code	Component parameters	Score range
YA1	Formal education	1-18
YA2	Informal education	14-28
YA3	Mass media exposure	6-18
YA4	Social participation	0-84
YA5	Contact with extension agency	14-42
YA6	Leadership quality	5-15
YA7	Innovativeness	5-25
YA8	Unhygienic health behaviour	0-16
YA9	Healthcare seeking behavior	1-2
YA10	Constraints in availing healthcare services.	10-30
YA11	Anthropometric measurements	16-40

Variables YA1 to YA10 were standardized in the following form:

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

where, y_i = observation for the i^{th} human capital variable I = 1,2, … , 10

y_{imax} = maximum value that the variable y_i can attain, which is given in the table (No xx)

y_{imin} = minimum value that the variable y_i can attain, which is given in the table (No xx)

By definition, $y_i^{'} \varepsilon [0,1]$; that is, $y_i^{'}$ ranges from 0 to 1, both inclusive.

The Human capital variable YA11, Body Mass Index (BMI) which is measured in the unit Kg/ m^2 is defined as the ratio of body weight (in Kg) of the individual to the square of his/her height (in m).

The variable YA11 is standardized using the formula:

$$y_i^{'} = 10 - \frac{y_i - y_{inorm}}{y_{i\max} - y_{i\min}} x10, \text{if } y_i > 18.5$$

$$= 10 - \frac{y_{inorm} - y_i}{y_{i\max} - y_{i\min}} x10, \text{if otherwise.},$$

where y_{inorm} is the normal value for the BMI of an adult (18.5 Kg/m^2).

$$\text{Human capital index}, y^{'} = y_{11} . \sum_{i=1}^{10} y_i$$

The social capital, natural capital and physical capital variables are standardized using the same formula used for Human capital variables YA1 to YA10

Social capital

Variable Code	Component parameters	Score range
YB1	Relationship with family members	4-12
YB2	Relationship with others	3-9
YB3	Activities in public space	15-45
YB4	Concerns towards the weaker sections	4-20
YB5	Interdependence and networking	5-15

After standardizing the 5 variables in the Social capital component, the social capital is measured as the sum of the standardized scores of the social capital variables. That is,

$$\text{Social capital index}, y^{'} = \frac{1}{5} \sum_{i=1}^{5} y_i^{'} x100$$

Natural capital

Variable Code	Component parameters	Score range
YC1	Land owned	

YC2	Utilisation of Natural resources to fulfil livelihood requirements	6-18
YC3	Common property resources	6-36

$$\text{Natural capital index}, y' = \frac{1}{3}\sum_{i=1}^{3} y_i' x100$$

Physical capital

Variable Code	Component parameters	Score range
YD1	Type of house	1-18
YD2	Nature of house based on ownership	1-2
YD3	Livestock possession	0-6
YD4	Material possession	0-16
YD5	Access to safe drinking water	1-6
YD6	Toilet facilities	1-2
YD7	Electricity connectivity	1-2
YD8	Distance to be travelled	

$$\text{Physical capital index}, y' = \frac{1}{8}\sum_{i=1}^{8} y_i' x100$$

By definition, these indices y' viz., human capital, social capital, natural capital & physical capital, ranges 0 – 100.

Financial capital

Financial capital is estimated using three variables, Family income, Family size, total debt he/ she is liable to pay (as on the survey date), and the source of credit he availed (institutional, or others). The Financial capital of a family could be conceived as his capability to earn an income above a minimum income required for meeting the essential needs to lead a decent living. 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. 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. Let the minimum income required by the family is y_{min}.

The per-month liability of the debt is considered as the interest incurred to the family on account of the debt, and is computed using the formula,

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

Financial capital is taken as the standardized income of the individual (y) variable which is given by the following formula:

$$\text{Financial capital, } y' = \frac{y - y_d}{y_{\min}} x100$$

Livelihood capital index is one-fifth of the sum total of all the five capital indices thus computed.

By definition, Livelihood capital index also ranges from 0 to 100.

3.4.1.2 Extent of deprivation

Deprivation is operationalised as a status of material and social harm which affects a person or a group as a result of discrimination or denial of human needs owing to the existence of prevailing political, economic and social structures. Based on review of literature, discussions with experts and observation made by the researcher, a list of 18 dimensions of deprivation were identified which was sent to 30 judges for eliciting weightages to dimensions so as to compute deprivation index. The judges selected were Agricultural developmental experts, social activists, governmental and non-governmental developmental functionaries. Deprivation is measured on the basis of availability and accessibility status of each dimension. Statements were prepared and rated on a five point continuum.

Measurement of dimensions of deprivation

According to Amarthya Sen capability is the freedom to achieve valuable beings and doings. He called the valuable beings and doings, functionings. The term dimension is referred to as functioning by Sen (1999) and the term functioning would be used in this study also. The deprivation from a functioning is conceived in this study as to have occurred not only due to a situation by which

the resource was not available to him, but also due to a condition that the resource, though available, was not made accessible to him owing to social discrimination or otherwise. A primary understanding of the livelihood of the Irula tribe, gathered through personal visits and the very little literature available on them, made us conclude that 18 functionings cause largely the deprivation of this tribe, in its totality. Therefore, a numerical assessment of the deprivation in its totality could be arrived at only by taking all these functionings into consideration. But all these functionings may not contribute equally to the total deprivation of the tribesman. An attempt to quantify the extent of deprivation on account of all these identified 18 functionings would hence entail a process of assigning weight to each of these functionings in proportion to the relative assessment of the contribution of these functionings to the totality of deprivation. A weighted average of these functionings score with the weights thus assigned to them is considered as a true measurement of deprivation in its totality. With this objective in mind to identify the weights that could be scientifically assigned to the functionings, to avoid investigator bias, and also to accommodate the assessment on these functionings in the context of the livelihood of the study population (Irulas), a primary survey on a small sample of social activists with different perspectives who worked among these tribes as part of different development projects for them, has been conducted. These functionings were rated by them in a 5-point scale (‘Most deprived’ – score 1 to ‘Least deprived’ – score 5). The average of these ratings corresponding to each functioning is taken as the weight for the functioning. Responses for each functionings was collected by statements and the number of statements vary according to the nature of functionings. As the number of statements in the interview schedule are different from one function to another the median value of the scores, instead of their summated ratings is taken as the score of the functioning. These individual score of the functionings are weighted by the weights assigned to them by the social activists. The list of functionings and the respective weight thus arrived at is given in the table below

Deprivation-stimulant Functioning and the weights assigned to them

No	Functioning	No of statements	Weight
1	Owned land for cultivation	3	9.87
2	Forest land for cultivation	1	5.73
3	Forest resources	1	7.07
4	Income	1	7.13
5	Employment	1	6.73
6	Education	4	7.87
7	Health	5	6.53
8	Housing & Drinking water	3	7.2
9	Other public services/ goods	1	4.4
10	Food security	1	7
11	Nutritional security	1	4.87
12	Protection	1	3.73
13	Access to mass media & communication	1	3.73
14	Social recognition	1	3.33
15	Ethnic identity	1	3.6
16	Cultural capital	1	3.8
17	Democratic participation	1	3.4
18	Credit	1	4
Total			100

Source: Average of the weights assigned to these functionings by the sampled (N=30) social activists

The deprivation on each of these functionings has, thus, two components, the availability component and the accessibility component. The weight for both the components of a functioning is taken as the same.

The median (x_i) of the score of the availability/ accessibility over the all the statements relating to the functioning is taken as the score of the availability/ accessibility of the functioning.

$$\text{Availabili ty score} = \frac{\sum_{i=1}^{n} w_i x_i}{\sum_{i=1}^{n} w_i};$$

where w_i is the weight assigned to the i^{th} functioning, and n is the number of functionings.

$$\text{Similarly, Accessibility score} = \frac{\sum_{i=1}^{n} w_i x_i}{\sum_{i=1}^{n} w_i}$$

Deprivation index is defined as the product of the availability and accessibility indices.

3.4.1.3 Attitude of *Irulas* towards developmental interventions

According to Thurstone (1946) attitude is the degree of positive or negative affect associated with a psychological object towards which people could differ in varying degrees. An attitude scale was constructed for the present study. Likert's method of summated rating was used for measuring attitude of *Irulas* towards developmental interventions.

Collection of items

The items to be included in the attitude scale were obtained through review of literature related to the *Irulas* of Attappady and discussion with experts of the College of Agriculture, Vellayani and few other officers and social activists working in AHADS (Attappady Hill Area Development Society). Universe of content related to different aspects of developmental intervensions like major objectives of the programme, sponsoring agencies, implementing agencies, funding agencies, major activities of the programme etc. were collected.

Editing of the statements

The statements selected had been carefully edited in accordance with the criteria suggested by Edwards (1957) so as to indicate both favourable and unfavourable attitude towards developmental intervensions.

Item analysis

These selected statements were later translated into Malayalam, the regional language of Kerala and administered to 100 respondents in a purposively selected village in a non-sample area in Agali panchayat. The responses were collected on a five point continuum viz., 'Strongly agree' 'Agree' 'Undecided' 'Disagree' and 'Strongly disagree'.

Method of scoring

After obtaining the responses from the 100 respondents the scoring was done in the order of 5,4,3,2 and 1 for 'Strongly agree' 'Agree' 'Undecided' 'Disagree' and 'Strongly 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

Considering the total score of each respondent, they were arranged in the descending order. Twenty five per cent of the subjects with the high score and twenty five per cent of the subjects with low total scores were used for the selected items. The responses of the middle fifty per cent were not considered. To evaluate if each statement differentiate between high and low group 't' values were computed using the formula given by Edwards (1957). Thus the 't' value for each of the 25 statements was worked out and the statements with 't' values greater than 1.75 were selected (16) and the rest 9 were rejected. Out of the selected statements 8 were positive and the other 8 were negative. (See Appendix-I).

Validity of the scale

To ensure that the obtained test measured the variable it was supposed to, validity of the scale has to be established. Content validity or construct validity was the methods generally followed to know the validity of the scale.

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 scale were based on extensive review of literature. Secondly, the opinion of 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 scale administered to the 100 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 same respondents were correlated using the Pearson's product moment correlation coefficient.

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

$$r = \frac{2\,roc}{1+\,roc}$$

The obtained r_{tt} value was 0.785, which indicated a high reliability of the scale.

Administering the scale

The final scale with eight positive and eight negative statements (see Appendix-I) was administered to 120 respondents and the responses were

collected on a five point continuum viz., 'Strongly agree' 'Agree' 'Undecided' 'Disagree' and 'Strongly disagree' with the scoring 5,4,3,2 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 for all items. The maximum score possible was 80 and minimum 16.

3.4.1.4. Constraints experienced in livelihood security

In the present study constraint was operationalised as the difficulties or problems faced by the tribespeople to have a secured livelihood.

Based on the review of literature related to the *Irulas* of Attappady and discussion with experts, the list of constraints were identified and presented separately, for respondents and social activists.The procedure used for administering the scale was as follows.

The response of each constraint was obtained on a four point continuum viz.,'Very severe' 'Severe' 'Not severe' 'Not at all severe' with weightage of 4,3,2 and 1 respectively.

The individual scores of each of the respondent were obtained by summing up the responses for all items. The maximum score possible was 100 and minimum 25.

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 in the descending order of importance separately for each category of the respondents.

3.4.2 Operationalisation and measurement of independent variables

3.4.2.1 Age

It refers to the number of calendar years completed by the respondents 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 were there in their family.

3.4.2.3 Family educational status

Family educational status was operationalised as the extent of formal learning possessed by the family members of the respondents who were above 21 years old at the time of interview. This was measured using the scale developed for the study. The scoring procedure was as follows.

The specific number of members of the family of the respondent was noted to know the size of the family. They were asked directly how many members were there in their family. The family education status was calculated by taking into account the individual score of the members who are above 21 years old and later adding the scores and dividing the total score by the total number of members. The mean score was taken as the family educational status.

3.4.2.4 Food security status

Food security refers to the extent to which the respondents get sufficient food that provides safe nutritional requirements and subsistence living. Measurement procedure was developed for the study. This was measured by directly asking the respondents to indicate whether they had sufficient food or not. The scores were assigned as follows.

Category	**Score**
Secure	3
Medium	2
Insecure	1

3.4.2.5 Environmental orientation

This was operationalised as the degree to which tribespeople was concerned about his environment. The scale developed by Sreevalsan (1995) was used with some modification. The scale consisted of five statements and the

respondents were asked to state their agreement or disagreement to each of the statements and scores of two and one were assigned for agree and disagree respectively. The responses were summed up to obtain the environmental orientation score. The score range was between ten and five.

Statements	**Agree**	**Disagree**
Man is exploiting the earth too much		
Man has to be greatly concerned about environmental issues like deforestation.		
There is truth in what environmental activists claim and we should lend our support to them		
Do you agree that older methods of farming were more safer than present		
Intensive agricultural practices cause environmental hazards.		

3.4.2.6 Alcoholism

Alcoholism refers to the extent of consumption of alcohol by the respondents which would lead to ill health, conflicts in his family and also unproductive use of family income. Measurement schedule is developed for the study.

The respondents were asked directly whether he had a habit of consuming alcohol. Also the frequency of intake was recorded as daily, weekly and occasionally. Also information about any health complications due to alcohol intake was recorded. The scoring procedure was as follows.

Frequency of intake	**Score**
Daily	1
Weekly	2
Occasionally	3
Never	4

3.4.2.7 Self confidence.

Self confidence is operationally defined as the extent of feeling about one's own powers, abilities and resourcefulness to perform any activity which he desires to undertake.

Self confidence was measured using the scale followed by Geetha (2002). The scale consisted of eight statements. The respondents were asked to state their response on a five point continuum ranging from 'Always' 'Most often' 'Often' 'Occasionally' and 'Never' with the scores of 5,4,3,2 and 1 respectively for the positive statements . The scoring procedure was reversed in the case of negative statements. Total score was obtained by summing of all the scores for each statement. The score range was between forty and eight.

Response	**Score**				
	Always	Most often	Often	Occasionally	Never
For positive statements	5	4	3	2	1
For negative statements	1	2	3	4	5

3.4.2.8 Political orientation.

Political orientation is 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 peoples 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 the 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

3.5 Methods used for data collection

An interview schedule including all aspects mentioned above was prepared in English and translated into Malayalam for collecting data from the respondents. All the 120 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. Since *Irulas* have their own dialect of speaking, questions were asked with the help of a promoter who was working in AHADS. In case of responses, which were not clear, rechecking was done.

3.6 Statistical tools used for the study

The following statistical methods were employed in the analysis and interpretation of the data.

1. Categorizaton

Categorization of each independent variable is done by calculating the frequency percentage of the total score obtained by the respondent in each category.

2. Percentage analysis

Percentage was used for finding out the distribution of the respondents 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

The findings of the study in line with the objectives set forth are presented here, with appropriate discussions, under the following titles.

4.1 Profile characteristics of the *Irula* tribespeople

4.2 Livelihood analysis

4.3 Relationship between profile characteristics and livelihood capital

4. 4 Extent of deprivation of *Irula* tribespeople

4.5 Relationship between profile characteristics and extent of deprivation

4.6 Relationship between component capitals and extent of deprivation

4.7 Attitude of *Irula* tribespeople towards developmental interventions

4.8 Constraints experienced by the *Irula* tribespeople in livelihood security

4.1 PROFILE CHARACTERISTICS OF IRULA TRIBESPEOPLE

This section reveals the distribution of tribespeople, with respect to various profile characters and it includes the discussions relevant to those characters. The variables studied under profile characteristics were age, gender, family size, family educational status, food security, environmental orientation, alcoholism, self confidence and political orientation

4.1.1 Age

Table 1. Distribution of tribespeople according to their age

Sl.No.	Category	Age (in years)	Frequency	Percentage
1	Young	≤35	51	42.5
2	Middle	36-59	51	42.5
3	Old	≥60	18	15
Total			120	100

Mean: 41.35

It is interesting to note from Table 1. that about 42.5 per cent of the respondents belong to young age category who were heading the households. Change of the family structure from joint family to nuclear family as is happening in

the mainstream society holds good among *Irulas* too. This may be the reason that only 15 per cent of old people as head of the households were being selected as respondents.

4.1.2 Family size

Table 2. Distribution of tribespeople with respect to family size

Sl. No.	Category	Frequency	Percentage
1	Small family (≤ 4 members)	20	16.67
2	Medium family (5-7 members)	94	78.33
3	Large family (8 members & above)	6	5
		120	100

Mean: 5.175

Family size is a major factor influencing the living standard of tribespeople. It can be observed from Table 2, that 78 per cent of the respondents were having 5 to 7 members in their family, followed by 16.67 per cent having less than or equal to four members and five per cent having 6 members in their family. The result indicates the ignorance of *Irulas* regarding the importance of family planning.

Majority of *Irulas* have medium sized families consisting of parents and children. The married sons or daughters living under the same roof cook food separately forming sub units within the family. Considering the tribespeople in the state as a whole, household size works out to be 4.83. But it varies from 3.9 to 6.44 when different communities are considered. In the case of 26 out of 35 tribal communities, the average household size is between 4 to 5. This is in conformity with the findings of Rajendralal (2005) and Indira (1993)

4.1.3 Family educational status

Table 3. Distribution of tribespeople according to their family educational status

Sl. No.	Category	Frequency	Percentage
1	Illiterate	18	15
2	Can read only	12	10
3	Can read and write	15	12.5
4	Primary school	42	35
5	Middle school	3	2.5
6	High school	12	10
7	Higher secondary school	15	12.5
8	Graduation	3	2.5
9	Post graduation and above	0	0
	Total	120	100

Mean: 3.90

A perusal of the Table 3 gives us an idea that among the respondents 35 per cent had primary school level family educational status followed by 12.5 per cent having higher secondary school level family educational status. 10 per cent of the respondents have high school level and 2.5 per cent have graduation level family educational status.

This results once again underscores the fact that though the literacy rate is very high in Kerala, tribespeople are still very much backward in educational status. Even then *Irulas* are not reluctant to educate their children. Female educational status is very backward as they are more oriented towards family life at the very young age itself according to their social customs. This low level of education is an important impediment for their vertical mobility in social life. So this study highlights the importance of educational interventions among *Irula* tribespeople.

4.1.4 Food security status

Table 4.Distribution of tribespeople based on food security

Sl.No:	Category	Frequency	Percentage
1	Secure	21	17.5
2	Medium	24	20
3	Insecure	75	62.5
		120	100

Mean: 2.8

A cursory view of Table 4 indicates that 62.5 per cent of the respondents are insecure with respect to food security status followed by 20 per cent of them had medium level. Only 17.5 per cent of the respondents were obtained as secure group with respect to food security. Livelihood security depends to a great extent on food security dimension as food is the most important basic need compared to other needs. People often give priority to other needs by consuming food not according to the physiological requirement.

None of the families who were selected for study did any food planning in advance and the daily food consumption does not include variety and choice of food items. In almost all the families rice or ragi kali were the main items included in the daily diet. Most of the families did not keep any specific time schedule for consuming food.

4.1.5 Environmental orientation

Table 5. Distribution of tribespeople based on their environmental orientation

Sl.No:	Category	Score range	Frequency	Percentage
1	Low	≤7	9	7.5
2	Medium	8	48	40
3	High	≥9	63	52.5
			120	100

Mean: 8.63

Table 5 indicates that 52.5 per cent of the respondents had high level of environmental orientation followed by medium (40%) and 7.5 per cent had low level. The Table clearly shows that more than 50 per cent of the respondents showed a high level of environmental orientation. Deforestation and other environmental issues directly impacted the livelihood security and the very survival of the tribespeople and consequent to which they became more aware of the imperative for the protection and conservation of environment. Various NGO's and voluntary organizations working among tribespeople also made efforts to educate them regarding the importance of conservation of the environment. All these might have contributed to the high level of environmental orientation of tribespeople as was shown in the table.

4.1.6 Alcoholism

Table 6. Distribution of tribespeople based on their addiction to alcohol

Sl.No:	Category	Frequency	Percentage
1	Non users	93	77.5
2	Daily	9	7.5
3	Weekly	3	2.5
4	Occasionally	15	12.5
		120	100

Mean:0.5

A bird's eye view of Table 6 shows that 77.5 per cent of the respondents were non users of alcohol and 12.5 per cent of them use it occasionally. This was followed by 7.5 per cent who use it daily and 2.5 per cent weekly. This finding is very interesting as it contradicts the popular perception that alcoholism is an important social menace among them. This might be due to the result of educational interventions by the government and voluntary agencies.

4.1.7 Self confidence

Table 7. Distribution of tribespeople based on their self confidence

Sl.No:	Category	Score range	Frequency	Percentage
1	Low	≤18	9	7.5
2	Medium	19-28	111	92.5
3	High	≥29	0	0
Total			120	100

Mean:20.83

A perusal of Table 7 reveals that the self confidence level was medium among majority of tribespeople (92.5%). 7.5 per cent belonged to low category and there was none who had high level of self confidence.

The lack of faith in one's own capabilities and powers leads to lack of optimism and interdependence. This in turn creates apprehension about the success of their initiatives, which culminates in the loss of self confidence. Education contributes to enhance and awareness and thereby instilling confidence among the members. Human resource development interventions expose the members to various skills in order to take up various activities. Thus the self confidence of the people gets enhanced. The low level of education and inadequate exposure to training might be the reason for their low level of self confidence.

However the self confidence level has increased much better than olden days because of the direct involvement of Attappady Hill Area Development Society (AHADS). AHADS played a key role in building self confidence among *Irula* tribespeople by organizing them to undertake various production activities to earn their livelihood. These initiatives also improved their decision making skills.

4.1.8 political orientation

Table 8. Distribution of tribespeople based on their political orientation

Sl.No:	Category	Score range	Frequency	Percentage
1	Low	≤13	15	12.5
2	Medium	14-16	78	65
3	High	≥17	27	22.5
			120	100

Mean: 15.1

The result reveals that most of the respondents (65%) belonged to the medium level category with respect to their political orientation followed by 22.5 per cent had high level of orientation. Only 12.5 per cent has low level of orientation in politics.

As majority of the respondents are actively participating in various activities of different institutions and organisations they might have realized the importance of politics in the society. None of the female respondents were active members or office bearers of any of the political parties which shows the need for political mobilization of tribal women.

4.2 LIVELIHOOD ANALYSIS

Livelihood of any community is mostly dependent upon two important aspects which can be classified into community specific intrinsic factors and general external factors. While the intrinsic factors like historical, social, economic , cultural and demographic settings of the particular community are crucial determinants in the economic development of a community, the external factors shaping overall economic growth like drivers of economic growth and institutional arrangements that facilitate the growth also play a significant role in deciding the economic development of a community. The ability of a community to adapt to changes in the general society is critical in avoiding development lags.

Livelihood analysis was done using Sustainable Livelihood Framework of FAO (2009). The five capital components of asset pentagon has been analysed in detail.

1.Human capital

Table 9. Arithmetic mean and CV of human capital parameters.

	Attainable score range	Observed score range		**Mean**	CV	SD
		Mini	Maxi			
Formal education	1-18	1	10	**4.1**	75.61	3.1
Informal education	14-28	14	19	**15.9**	10.69	1.7
Mass media exposure	6-18	6	9	**7.5**	10.67	0.8
Social participation	0-84	2	21	**9.4**	58.51	5.5
Contact with extension agency	14-42	14	17	**14.9**	6.71	1
Leadership quality	5-15	8	12	**9.8**	13.27	1.3
Innovativeness	5-25	11	21	**15.1**	17.22	2.6
Unhygienic health behaviour	0-16	0	8	**3.2**	65.63	2.1
Healthcare seeking behavior	1-2	1	2	**1.4**	35.71	0.5
Constraints in availing healthcare services.	10-30	18	22	**19.8**	4.55	0.9
Anthropometric measurements	16-40	17.24	23.35	**19.9**	9.55	1.9

It was observed from Table 9 that the mean score obtained for formal education was 4.1 which were approximately equivalent to primary level educational status. The CV was 75.61 which shows that the respondents vary widely in their educational status. According to a report of Kerala Saksharatha Samithy (Government of kerala, 2009) the total tribal literacy is 80 per cent in Kerala. Almost all tribal students join the school but majority discontinue as dropouts at different stages of formal education. The tribal students joining higher educational institutions are meagre.

Regarding informal education, it was seen that respondents were not actively participated in informal educational interventions of both Government and Non Governmental Organisations, as the mean score was only 15.9 and the coefficient of variation was also low.

The above Table also revealed that the tribespeople were not much exposed to mass media as the mean score for the mass media exposure was only 7.5 and the coefficient of variation was 10.67. The limited access to magazines, newspapers and television might be the reasons for the low level of mass media exposure.

Regarding social participation as was shown in the Table 9 the mean value obtained is 9.4, though the attainable maximum score was 84. There is considerable variation in the observed score as indicated by the CV which is 58.51. Inadequate extension interventions and low literacy rate might have contributed to their overall low level of social participation. In spite of the constitutional guarantees like equality, the feudal hangover is still persisting in the mindset of people. The study also revealed that Attappady Hill Area Developmental Society (AHADS) is the most popular and reachable social organization with regard to membership and scale of involvement. Poor people seek institutions that are effective, trustworthy, uniting, dependable, respectful, courteous, truthful, listening, not corrupt and not corrupting.

Contact with extension agency of the tribespeople seems to be low as the mean value is 14.9 and the coefficient of variation was also low ie. 6.71. Inadequacy

of extension contact may be because of the poor service delivery and also unfavourable attitude of government functionaries. They are reported to have preoccupied with unnecessary officeworks and consequently are unable to provide adequate service and support to the tribespeople. Most of the respondents were participants of different programmes initiated by AHADS. Those tribespeople who had opportunities to be in contact with various extension agencies had enhanced self confidence which inturn improved their ability to take rational decisions.

The Leadership quality of the tribespeople indicated an average level as the mean value was 9.8 and the coefficient of variation was 13.27. Leadership quality is an important prerequisite for personality development which in turn lead to social development. Backwardness of *Irula* tribespeople can be mitigated through meaningful leadership development programmes. Development of educational facilities, extension interventions, socio-political activism etc.would augment the process of leadership development of tribespeople.

Innovativeness was rated as an average as the mean score was 15.1 and the coefficient of variation was 17.22. Contrary to the popular belief this finding regarding the innovativeness is ought to be considered encouraging. Hitherto observations revealed that innovativeness is very low among tribespeople due to many reasons. Therefore the result is an indication of substantiable increase in their innovativeness.

Table 9. indicates poor health status of the tribespeople as the mean score was only 3.2. This need to be considered as a very serious issue while strategizing developmental agenda for tribespeople. But there was considerable variation in the score as the CV was 65.63. Absence of health awareness among *Irula* tribespeople resulted in increased use of alcohol, smoking and chewing of tobacco. Even the women in the households had the habit of smoking and drinking alcohol. This unhealthy behaviour is getting reduced as a result of educational and extension interventions.

It was also observed from above table that the state of healthcare seeking behaviour of tribespeople was on the unfavour side of the mean score as the score was only 1.4. Illiteracy, absence of health awareness and poverty prevented them from approaching hospitals and healthcare centers until illness became serious. Remoteness of the settlement was found to be the second important reason for not seeking healthcare at time. While majority seeks allopathic medicine some still depends only on traditional *aadivasi* medicines. Besides medical and paramedical personnel seldom visited the tribal hamlets.

Findings also showed that majority of the tribespeople are facing serious constraints in availing healthcare services. The most important constraint faced them is lack of adequate hospital facilities in the nearby areas and lack of adequate doctors and supporting staff. Other important constraints identified were lack of modern equipments for diagnosis and inadequate stock of medicines.

The mean Body Mass Index of the *Irulas* was 19.9 and the coefficient of variation was 9.55. The BMI of a healthy person ranges from 18.5 to 25. Poverty in its various guises, is bad and one of its nastier effects is that on health. But the social gradient in health is not confined to those in poverty. It runs from top to bottom of the society, with lesser standards of health at every step down the social hierarchy.

CLASSIFICATION OF TRIBESPEOPLE BASED ON HUMAN CAPITAL

Table 10. Classification of tribespeople based on their human capital

Sl No:	Category	Frequency	Percentage
1	Low	78	65
2	High	42	35
		120	100

A perusal of Table 10 indicates that two third of the tribespeople are categorized as low with respect to human capital. The most important factors

contributing positively to human capital are education and health. Though the Government spent crores till date on public health sector focusing on tribespeople, its impact did not reflect on their health status. Poverty induced diseases are more prevalent among tribespeople contrary to the rising level of life style diseases and degenerative diseases among the general public especially among middleclass and upper middleclass. Feroze and Aravindan (2004) in their study reported that sickle cell anemia, a rare hereditary disease, is spontaneously spreading across tribal communities of Wayanad and Attappady. They also reported that 25.8 per cent tribespeople in Wayanad and 21.8 per cent in Attappady are affected by this disease. Almost all studies underscores the fact that social deprivation had its direct impact on the health status of the subaltern groups especially the tribespeople in the Indian context. Therefore strengthening the public funded healthcare system is the need of the hour. Investment on public health sector targeting deprived sections is an important prerequisite for the holistic development of society. Here health is viewed as not merely the absence of diseases but a complete wellbeing incorporating the social dimension which is more complex and assumes that individual can be healthy if and only if society is healthy.

2.Social capital

Table 11. Arithmetic mean and CV of social capital parameters.

	Attainable score range	Observed score range		**Mean**	CV	SD
		Mini	Maxi			
Relationship with family members	4-12	10	12	**10.8**	8.33	0.9
Relationship with others	3-9	7	9	**8.3**	7.23	0.6

Activities in public space	15-45	19	29	**23.6**	11.02	2.6
Concern towards the weaker sections	5-20	16	20	**17.8**	5.06	0.9
Interdependence and networking	5-15	9	14	**11.7**	11.11	1.3

The value obtained from the Table 10 shows that the tribespeople had a good relationship with their family members as the mean value came to about 10.8 and the coefficient of variation was only 8.33.

CLASSIFICATION OF TRIBESPEOPLE BASED ON SOCIAL CAPITAL

Table 12. Classification of tribespeople based on their social capital

Sl No:	Category	Frequency	Percentage
1	Low	51	42.5
2	High	69	57.5
		120	100

Social capital plays a pivotal role in the development process of any community. The finding that about 60 per cent of *Irula* tribespeople belong to high social capital group is indeed encouraging. It needs to be developed further for their welfare. Social capital provides social security connectedness and confidence among people. The enhanced level of social capital of *Irula* tribespeople might be due to initiatives by different governmental and non-governmental agencies. AHADS played a very important role especially among women tribespeople in augmenting the literacy, confidence and social capital.

3. Natural capital

Table 13. Arithmetic mean and CV of natural capital parameters.

	Attainable score range	Observed score range		**Mean**	CV	SD
		Mini	Maxi			
Land owned		0	325	**118.5**	74.18	87.9
Utilisation of Natural resources to fulfil livelihood requirements	6-18	7	10	**8.2**	10.98	0.9
Common property resources	6-36	19	23	**20.6**	5.83	1.2

The respondents land holding size ranges from zero to 325 cents. It means that majority are small and marginal land owners. Most of the respondents inherited their land from their parents and some of them got it from government. But there is inequality in the distribution of land. The land may seem to be more because it is jointly held by the family and partition has not taken place.

Utilisation of natural resource was low as (mean score was 8.2) most of the tribespeople are now working as wage labourers. In and around a typical hamlet, there are two categories of land – the common land (Ooru Bhumi) and individual holdings. For economic and related reasons the inhabitants tend to neglect these land. Total Hamlet Development Programme (THDP) of AHADS envisages proper usage of the common land for community benefit eg:- planting with fruit trees, landscaping etc.Further support and services were extended to individual land owners among tribespeople for the development of their land using improved irrigation practices,

landscaping and cropping practices, with the anticipation that the tribal families would get sustainable benefits in future.

CLASSIFICATION OF TRIBESPEOPLE BASED ON NATURAL CAPITAL

Table 14. Classification of tribespeople based on their natural capital

Sl No:	Category	Frequency	Percentage
1	Low	69	57.5
2	High	51	42.5
		120	100

Everywhere in India the most important issue faced by tribespeople is the question of land. Owing to historical, cultural and defective policies of subsequent governments, tribespeople were exploited and dispossessed of their lands. The globalization and its development paradigm further accentuated the dispossession process of land and relegated them to the fringes of the society. Table 14 reveals that about 60 per cent of tribespeople belong to a category of low with respect to their natural capital. This is understandable in the contemporary context of globalization where land is one of the most precious inputs. Tribespeople being very vulnerable and powerless, they are exploited and dispossessed. In order to achieve an egalitarian society as enshrined in the constitution, concerted efforts and intervention by the progressive forces is inevitable and pertinent. The findings of the study underscore this fact which the proponents of globalization may not like. The concept of distributive justice has special significance in the Indian context where a large majority of people are deprived socially, economically and politically.

4.Physical capital

Table 15. Arithmetic mean and CV of physical capital parameters.

	Attainable score range	Observed score range		**Mean**	CV	SD
		Mini	Maxi			
Type of house	1-18	4	15	**9.9**	30.3	3
Nature of house based on ownership	1-2	1	2	**1.2**	33.33	0.4
Livestock possession	0-6	0	3	**0.9**	77.78	0.7
Material possession	0-16	0	6	**1.2**	150	1.8
Access to safe drinking water	1-6	3	6	**4.9**	18.37	0.9
Toilet facility	1-2	1	2	**1.7**	23.53	0.4
Electricity connectivity	1-2	1	2	**1.5**	33.33	0.5
Distance to be travelled		3	6	**4.5**	22.22	1

Along with food, own house is an important pre-requisite for livelihood security. The type of house one possesses usually indicates one's livelihood standard. The mean score obtained for the type of the house was 9.9. In Irula hamlets, the number of thatched houses is decreasing. The fall in the number of thatched houses is an indicator of livelihood promotion of AHADS. The AHADS initiatives in Total Hamlet Development Programme are noticeable in the status of houses of Attappady tribal hamlets. It exemplifies the role of AHADS in the livelihood promotion of *Irula* tribespeople. The houses are either constructed by the Government or handed over to tribes or the governments at various levels provide financial assistance under various

schemes to the tribal community for construction. The Government schemes for providing financial assistance to construct sanitary latrines have not been effective because even though latrines are constructed, they are not using it properly. For drinking water purpose they mainly depends upon rivers, streams and ponds. Some of the respondents had well on their own. The livestock possession consists of cows, bullocks, goat and poultry.

The living standard of the community and thereby the livelihood security in the modern world does not rest with food security alone but it extent to the ownership over wide range of assets, both tangible and intangible including household appliances. Modern man want diverse type of facilities to satisfy his needs in a relative manner than absolute manner; which in most cases related to the vagaries of demonstration effect especially in rural and semi-rural areas. *Irulas* were not an exception in this regard; increased employment and income oppurtunities had leverage effects in the living standards of the population. It was found that some of the respondents owned television sets and most of them had mobile phones.

Being an agrarian community, the livelihood security of people in Attappady is to a great extent facilitated by the animal husbandry. It is an irony that the increased livestock population has been one of the major factors behind ecological deterioration in Attappady in the past, especially destruction of the green pasture land. But now the livestock population was decreasing as the mean value was only 0.9. Once the livestock had contributed much to their farming systems by complementing in crop production and providing farm yard manure to nourish the soils and improve its water retention capacity. It was also observed that the *Irula* tribes preferred to take bath either from the river or stream. Those who do not have electricity connection rely on kerosene lamp as the source of light.

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. They have to travel 2 to 3 kilometers to collect the fuel wood.

CLASSIFICATION OF TRIBESPEOPLE BASED ON PHYSICAL CAPITAL

Table 16. Classification of tribespeople based on their physical capital

Sl No:	Category	Frequency	Percentage
1	Low	66	55
2	High	54	45
		120	100

A perusal of Table 16 shows that 55 per cent of the tribespeople are categorized as low based on physical capital. Under decentralised planning, several projects have been undertaken towards infrastructure development and household level development of physical assets. Even though these projects contributed a little, they are not sufficient enough to achieve sustainable livelihood security.

5. Financial capital

Table 17. Arithmetic mean and CV of financial capital parameters.

	Attainable score range	Observed score range		**Mean**	CV	SD
		Mini	Maxi			
Income per month		600	5000	**2315**	41.62	963.6
Expenditure pattern		0	11760	**2337**	112.49	2628.9
Indebtedness		0	7800	**1259**	180.48	2272.3
Savings propensity		0	325	**118.5**	74.18	87.9
Asset as land		2	5	**4.3**	16.28	0.7
Borrowing pattern		600	5000	**2315**	41.62	963.6

Most of the respondents were wage labourers and most of them were employed in the informal sector without any social security benefits. AHADS initiatives helped the tribal communities to a greater extent in reducing their poverty and unemployment.

The result showed that many of the respondents were included in the Below Poverty Line (BPL) category. The cost of living has also increased very much. Due to inflation and other related reasons the cost of living increased substantially in the recent years. This might be an adverse effect of globalisation being thrusted upon people. All these reduced the income level and purchasing power of people. The study revealed that there is considerable variation in the income of tribespeople.

The average monthly income of *Irulas* was found to be Rs 2315. The household income can directly decipher into food security and other livelihood assets; inequality in the distribution will directly lead to insecurity of livelihood assets.

Expenditure pattern

Table 18. Detailed distribution of monthly expenditure pattern (in Rs.)of the respondents

Sl. No	Items	No: of persons with Nil expenditure	No: of persons expends	Mean of total respondents	Mean of persons who expends	Share (%) to the total expenditure
1	Food	0	120	1253	1253	52.3
2	Cloth	0	120	242	242	10.1
3	Electricity	63	57	28	59	1.2
4	Medical expenses	57	63	37	70	1.5
5	Education	66	54	55	123	2.3
6	Religion/ Social	15	105	59	67	2.5

	function					
7	Taxes	90	30	6	26	0.3
8	Alcohol	66	54	359	797	15
9	Recreation	54	66	68	124	2.8
10	Travelling expenses	24	96	109	136	4.6
11	News paper/ Magazine	102	18	18	118	0.8
12	Fuel	81	39	31	95	1.3
13	Mobile phone charges	60	60	71	142	3
14	Others	27	93	63	81	2.6

On an average tribal household spent Rs.1253 for food items per month and the corresponding figure for cloth was Rs. 242. Tribal households' expenditure for food was 52.3 per cent of the total expenditure, whereas for cloth it was only 10.1 per cent. According to the study of Indira (1993) about 30-80 per cent of the money spent for food was incurred for the purchase of cereals by the tribal families. Only an insignificant proportion of the families spent money for the purchase of fruits, milk and milk products, nuts and oil seeds. It could be seen that tribal households' average expenditure for electricity was only Rs. 28 and it contributes 1.2 per cent of the total expenditure, while taking into consideration the total 120 households. But it should be noted that out of 120 households only 57 of them had electricity connection. Therefore, by taking into consideration of only 57 households, the average expenditure came to about Rs.59 (2.5%). The average medical expenditure came to about Rs.37 (1.5%) while taking 120 households. It should be noted that out of the 120 households 57 of them seek free service by the government or else seek tribal medicine. Hence, by taking 63 households the average expenditure came to about

Rs.70 (2.9%). Out of the 120 households only 54 of them spent expenditure on education which came to an average of Rs.123 (5.1%). When taking into consideration the total households it came to about Rs.55 (2.3%). On an average Rs.59 (2.5%) was spent for religious/ social functions while considering the total households. But taking into account of only 105 households it came to about Rs.67 (2.8). Towards taxes they spent an average of Rs.6 (0.3%). But only 30 households are remitting taxes regularly, hence by taking their average it came to about 26 rupees (1.1%). Out of the 120 respondents surveyed 54 of them consume alcohol and their mean expenditure was Rs.797 (33.3%) Other miscellaneous expenses came to about 63 rupees (2.6%). As compared to the annual income, the annual household expenditure of the tribals was more which forced them to borrow money for satisfying their needs, thus falling in debt trap.. These findings derive support from statement by Erraiah (2005) that the poor have many things in common like low income, disproportionate number of children and rural background. They consume almost four fifth of the income, limiting their diet to that with cereals, yams or cassava. Many of them are malnourished to the point where their ability to work hard is reduced and physical and mental development of their children is impaired, and their resistance to infection is low.

On an average *Irulas* annual indebtedness was Rs.1259. The share of debt incurred for day to day expenditure out of the total debt is low. Most of the debt was incurred for contingency purposes. Poverty leads to instances where people cannot look after themselves or obtain support from others, or those having an excessive number of dependants on a single earner in the family which increase their problems. Thus, economic insecurity and social dependency leads to increasing indebtedness. When the annual income is low he is unable to meet his demands for domestic consumptions, contingencies like marriage, death etc. but real problem is indebtedness to moneylenders as they are the main source of funds because banks do not lend without any security. Because of low family income, the tribespeople was

not able to meet his demands and thus he approaches money lenders or other non institutional sources for high interest rate and accumulate more debts beyond his repayment capacity

CLASSIFICATION OF TRIBESPEOPLE BASED ON FINANCIAL CAPITAL

Table 19. Classification of tribespeople based on their financial capital

Sl No:	Category	Frequency	Percentage
1	Low	66	55
2	High	54	45
		120	100

The data in Table 19 shows that 55 per cent of the tribespeople was categorised as low in the case of financial capital and 45 per cent of them were rated as high. Wage labour in agriculture labour and recently Mahatma Gandhi National Rural Employment Guarantee Programme provides employment. Illiteracy and lower level of educational status made tribespeople more dependent on agricultural wage labour. More over agricultural labour being irregular and seasonal, there is no assurance of employment and consequently the livelihood security is at risk. But a positive development being noticed recently is that tribespeople show considerable interest in joining Self Help Groups of kudumbasree and taking part in income generation activities. This substantially and significantly contributed to the empowerment of tribespeople especially womenfolk besides the intervention of AHADS.

CONTRIBUTION OF VARIOUS COMPONENT CAPITALS TO THE LIVELIHOOD CAPITAL INDEX

Table 20. Percentage contribution of various capital components to the livelihood capital index (LCI)

Sl No:	Component capitals	Range	Index	CV	% contribution to LCI	Rank
1	Human capital	10-44	24.08	36.5	11.4	IV
2	Social capital	61-83	70.94	70.6	33.6	II
3	Natural capital	0-6	1.75	76.57	0.8	V
4	Physical capital	17-67	42.63	30.33	20.2	III
5	Financial capital	25-129	71.45	35.7	33.9	I
Livelihood capital index		**30-58**	**42.17**	**15.58**	**100**	

Regarding the contribution of component capitals, financial capital is rated as the component which is contributing to the highest to the livelihood capital index. The second highest contribution to the livelihood capital index is by social capital. The difference in contribution to the financial and social capital is very meagre. These two capital components together contributes 67.5 percentage to the livelihood capital. The third highest contributor to the livelihood capital index is physical capital followed by human capital and natural capital. This study make us aware of the importance of financial and social capitals in the sustainable livelihood security of tribespeople. Policy makers, planners, administrators and academicians need to

consider these two capitals while strategising and formulating development paradigms and welfare measures. An interesting finding of the study is that social capital has got a very important role than human capital in assuming livelihood security of tribespeople. Membership in social organisations and networks could become a source of power in getting access to resources or developing the existing capabilities. This, in turn, indicates that the livelihood capital improve with improvements in the social capital.

CLASSIFICATION OF TRIBESPEOPLE BASED ON LIVELIHOOD CAPITAL INDEX

Table 21. Classification of tribespeople based on their livelihood capital index

Sl No:	Category	Frequency	Percentage
1	Low	54	45
2	High	66	55
Total		120	100

A perusal of Table 21 indicates that 55 per cent of the tribespeople has got high livelihood capital index and 45 per cent of them is categorised as low. Contrary to the expectations before the start of study, this finding is encouraging and satisfying as majority of tribespeople do not face livelihood insecurity. This development has several ramifications. One important inference we need to derive is that different tribes are in different stages of development and developmental interventions need to be tailored to the requirement of each tribe.

4.3 RELATIONSHIP BETWEEN PROFILE CHARACTERISTICS AND LIVELIHOOD CAPITAL INDEX

Table 22. Correlation between profile characteristics and livelihood capital index.

Sl No:	Profile characteristics	Correlation Coefficient
1	Age	0.129
2	Family educational status	-0.1941*
3	Food security	0.1175
4	Environmental orientation	-0.2496**
5	Alcoholism	-0.2355**
6	Self confidence	-0.3655**
7	Political orientation	0.0342
8	Family size	-0.1228

Of the 8 independent variables studied only four variables were significantly correlated. They were family educational status, environmental orientation, alcoholism and self confidence.

Family educational status has got a negative significant relationship with livelihood capital index. There are ample literatures that the productivity of education will have its bearing only after crossing a threshold level. This holds good in the context of *Irula* tribespeople. Median educational level of tribal people in general and *Irulas* in particular is found to be very low- much lower than the required threshold level.(Their formal education just crossed the primary educational level). This suboptimal level of education has negative correlation with livelihood capital index. As they are currently alienated and detached from their traditional livelihood resources owing to their acquiring minimal formal education they are not capable enough to acquire income and employment based only on their level of

education and skills. This suboptimal level of education and skills in fact inhibit their livelihood oppurtunities.

Environmental orientation has got a negative significant relationship with livelihood capital index. Various NGO's and voluntary organizations working among tribespeople made efforts to educate them regarding the importance of conservation of the environment. All these have contributed to the high level of environmental orientation of tribespeople and they have started seeking jobs other than collection of forest produces. This might be the reason of getting negative significant relationship with livelihood capital index.

Regarding the variable alcoholism, it is quite natural that as alcoholism increases the livelihood capital index decreases. Alcoholism leads to poor health status of the population including mental health and it can be a way of building up indebtedness. Thus they cannot meet the basic amenities of life with the income they have and they are thrown in the vicious circle of poverty.

93 per cent of the tribespeople had medium level of self confidence. This suboptimal level of self confidence has negative correlation with livelihood capital index as they are currently alienated and detached from their traditional social hierarchy and livelihood options and at the same time they are not capable enough to acquire income and employment to acquire a secure living.

4.4 EXTENT OF DEPRIVATION

CLASSIFICATION OF TRIBESPEOPLE BASED ON DEPRIVATION INDEX

Table 23. Classification of tribespeople based on deprivation index

Sl No:	Category	Frequency	Percentage
1	Low	56	46.67
2	High	64	53.33
Total		120	100

Table 23. reveals that greater than 50 per cent of the tribespeople were socially and economically deprived of important functionings and they are way behind general population in almost all development indicators. Though *Irulas* being a developed tribe among Attappady tribes, the study indicates the relevance and importance of targeting developmental interventions on an enhanced scale.

Table 24. Mean and CV of functionings of deprivation

Sl No:	Functionings		Dimentions of deprivation					
			Availability		Accessibility		Deprivation (Availability× Accessibility)	
		Score range	Mean score	CV	Mean score	CV	Score	CV
1	Owned land for cultivation	1-5	3.4	26.5	3.4	29.4	3.4	26.5
2	Forest land for cultivation	1-5	3.7	27	1.2	33.3	2.8	14.3
3	Forest resources	1-5	3.6	25	3.2	31.3	3.5	25.7
4	Income	1-5	4.5	13.3	4.3	14	4.5	13.3
5	Employment	1-5	4.5	11.1	4	20	4.4	13.6
6	Education	1-5	1.9	36.8	1.8	38.9	1.8	38.9
7	Health	1-5	1.7	35.3	1.7	35.3	1.7	35.3
8	Housing and drinking water facility	1-5	2.6	42.3	2.5	44	2.6	42.3
9	Other public	1-5	3.9	25.6	2.8	42.9	3.4	26.5

	services/ goods							
10	Food security	1-5	3.9	30.8	1.7	47.1	3.1	29
11	Nutritional security	1-5	3.1	45.2	2.4	54.2	2.9	44.8
12	Protection	1-5	3.6	30.6	1.9	57.9	3	26.7
13	Access to mass media & communication	1-5	2.5	48	2	60	2.4	45.8
14	Social recognition	1-5	4.1	24.4	3.8	31.6	4	25
15	Ethnic identity	1-5	1	0	1	0	1	0
16	Cultural capital	1-5	1	1	1	1	1	1
17	Democratic participation	1-5	4.1	19.5	2.9	48.3	3.6	22.2
18	Credit	1-5	3.9	25.6	1.9	47.4	3	23.3

Invasion of settler cultivators and traders from Kerala and Tamilnadu resulted in the socio-economic and cultural life of tribespeople by drastic and radical changes along with the alterations in the natural resource base. The structural and functional changes consequent to the invasion of outsiders to the Attappady hills got reflected in land use pattern of indigenous people, demographic pattern, cultural identity and tribal heritage. Competition and exploitation of resources by outsiders, depletion of natural resource base, unsustainable and defective developmental initiatives etc. further accentuated the livelihood security of tribespeople.

Table 25. Distribution of respondents with respect to the functionings of deprivation

Sl. No	Dimensions of deprivation	Availability Frequency & Percentage			Accessibility Frequency & Percentage		
		Deprived	Neutral	Not deprived	Deprived	Neutral	Not deprived
1	Owned land for cultivation	36 (30)	0 (0)	84 (70)	36 (30)	0 (0)	84 (70)
2	Forest land for cultivation	30 (25)	0 (0)	90 (75)	120 (100)	0 (0)	0 (0)
3	Forest resources	27 (22.5)	0 (0)	93 (77.5)	51 (42.5)	0 (0)	69 (57.5)
4	Income	21 (17.5)	0 (0)	99 (82.5)	30 (25)	0 (0)	90 (75)
5	Employment	10 (8.4)	0 (0)	110 (91.6)	19 (15.8)	0 (0)	101 (84.2)
6	Education	101 (84.2)	16 (13.3)	3 (2.5)	105 (87.5)	12 (10)	3 (2.5)
7	Health	117 (97.5)	0 (0)	3 (2.5)	117 (97.5)	0 (0)	3 (2.5)
8	Housing & Drinking water	81 (67.5)	0 (0)	39 (32.5)	84 (70)	0 (0)	36 (30)
9	Other public services/ goods	21 (17.5)	0 (0)	99 (82.5)	69 (57.5)	0 (0)	51

							(42.5)
10	**Food security**	30 (25)	0 (0)	90 (75)	111 (92.5)	0 (0)	9 (7.5)
11	**Nutritional security**	65 (54)	0 (0)	55 (46)	85 (71)	0 (0)	35 (29)
12	**Protection**	33 (27.5)	0 (0)	87 (72.5)	99 (82.5)	0 (0)	21 (17.5)
13	**Access to mass media & communication**	81 (67.5)	0 (0)	39 (32.5)	93 (77.5)	0 (0)	27 (22.5)
14	**Social recognition**	18 (15)	0 (0)	102 (85)	24 (20)	0 (0)	96 (80)
15	**Ethnic identity**	120 (100)	0 (0)	0 (0)	120 (100)	0 (0)	0 (0)
16	**Cultural capital**	120 (100)	0 (0)	0 (0)	120 (100)	0 (0)	0 (0)
17	**Democratic participation**	9 (7.5)	0 (0)	111 (92.5)	57 (47.5)	0 (0)	63 (52.5)
18	**Credit**	24 (20)	0 (0)	96 (80)	105 (87.5)	0 (0)	15 (12.5)

A cursory view of Table 25 indicates that 70 percent of the tribespeople were not deprived with respect to availability and accessibility of owned land for

cultivation. Table 24. indicates very clearly that the deprivation score with regard to the function, owned land for cultivation is 3.4 which shows that *Irula* tribespeople were not deprived of with respect to this functioning

Data obtained from Table 25. confirms that 75 percent of the tribespeople were not deprived with respect to the availability of forest land for cultivation. But at the same time 100 percent of them were deprived while considering its accessibility. The Forest Act of 1878 provided for classification of forest into reserved, protected and village forests. The law reduced the tribal people to the status of an encroacher on his own land possessed, used and cultivated by their ancestors from time immemorial. As Table 24. indicates, the mean score for the function related forest land for cultivation, is 2.8 which indicates that they are deprived of forest land for cultivation. This is due to the forest acts and other prohibitions indented to protect the forest.

Table 25 reveals that 77.5 percent of the tribespeople were not deprived of forest resources with regard to availability but 42.5 per cent were deprived of while considering its accessibility. The rights over the minor forest resources are taken away by forest act. Table 24. indicates that deprivation with regard to forest resources is not much as is evidenced by the average deprivation score of 3.5.

Table 25. reveals that the deprivation of income with regard to its availability dimension is 82.5 percent. Table also indicates that 75 per cent of them were not deprived of with respect to the accessibility dimension. Table 24. reveals that the tribespeople were not much deprived of income as is evidenced from the mean score of 4.5. When AHADS started project implementation, the daily wage rate prevailing in Attappady, especially in Eastern Attappady, was as low as 30 to 50 rupees. AHADS has established and ensured a just wage rate of 80 to 120 rupees through the PIs (People's Institutions); efforts are being made to enhance the daily wage rate to Rs.125 for both men and women in tune with the wages provided under Mahatma

Gandhi National Rural Employment Guarantee Programmes of the panchayats. However, in practice at the grass root level, there was gender gap in distribution of daily wages; female wages was only 81% of the male wages. This gap was much higher among the tribal communities and is as high as 71% among the *Irula* community. But, there is really a great increase in the wages of labourers ranging from 40-75% in the hamlets, which has directly translated into the livelihood outcomes through access to food and other basic needs. This finding is in line with the finding of Government of Kerala (2010).

Regarding the deprivation of employment it can be seen from Table 25 that 92 per cent are not deprived of with regard to availability dimension and 84.2 per cent were not deprived of with respect to accessibility dimension of deprivation. As the mean score of employment as was shown by the Table 24. was 4.4, clearly shows that they are not much deprived with respect to the employment as well. The lesser degree of deprivation with respect to income and employment is positive significant development with respect to tribespeople. This progress was achieved owing to the endeavors of governmental and non-governmental organization over a period of time. The role played by AHADS need a special mention on this. The AHADS project has so far generated more than 3.45 million man days of employment. The project has generated on an average 5.2 man days of employment per week for men and 4.7 man days for women each in the beneficiary hamlets. The project has helped to a great extent in generating employment among the tribal communities. On an average 18% of the tribal communities got more than 200 man days of employment within the last one year.

In the case of the functioning education 84.2 percent were deprived with respect to availability and 87.5 per cent of them were deprived of with regard to its accessibility. Table 24. indicates that the mean score was only 1.8, which reveals that deprivation with regard to functioning education is very serious. There are various reasons contributing to the backwardness of education. The schools located are far

away from hamlets, when parents go for work the elder children are assigned the responsibilities to look after the younger ones along with other household chores. The distance to the schools has been considered as one of the important reasons for not sending children to schools. This is more important in the case of girls. The drop out rate of tribal students in Attappady is very much higher as against the state average. But the drop out rate is now decreasing. For resolving the educational backwardness, a change of attitude of parents is inevitable. Special efforts need to be taken to motivate parents to send their children to schools. The important issue which directly affects the education of children is child labour. Immediate steps need to be taken to eradicate child labour among tribespeople along with meaningful financial support which may lead to decrease in backwardness with regard to education.

The urgent need for public delivery of health care services is increasingly being recognized and has drawn considerable attention in recent years in both rural and urban areas. Kerala's remarkable achievements in healthcare were to a large extent based on its vast network of public health institutions which enabled her to earn the fame of 'Kerala Model of Health' worth emulating even by advanced countries. The hallmark of this model was the low cost of healthcare, universal availability and accessibility to the poor sections of the society. But in the case of *Irulas* it could be deciphered from the Table 25. that 97.5 per cent of the tribespeople were deprived of health with regard to the availability and accessibility dimension. Data from Table 24. clearly indicates that the deprivation score with regard to the health functioning was only 1.7 which shows that *Irula* tribespeople were very much deprived of health. A report by Government of Kerala (2009) indicates that 52 per cent of *Irulas* have to travel a distance of more than 10 Km to reach a PHC.

A perusal of Table 25 shows that 67.5 per cent of the tribespeople were deprived of housing and drinking water facility with regard to availability and 70 per cent were deprived of while considering its accessibility. A cursory view of Table

24. indicates that the mean score of deprivation with regard to the same functioning was 2.6 which shows that Irula tribespeople were deprived of with respect to housing and drinking water facilities. The scarcity of water due to less rainfall affected the ecological balance of the valley. In order to ensure water availability in a sustained manner AHADS implemented schemes like gravity irrigation, irrigation channels, lift irrigation, mobile irrigation and tanks. Many of the dilapidated houses were reconstructed and government has taken serious measures to provide them with all amenities.

A birds' eye view of Table 25. indicates that 82.5 per cent of the tribespeople were not deprived of the functioning related to other public services/ goods with regard to its availability but 57.5 per cent of them were deprived with regard to its accessibility. Table 24. indicates that deprivation with regard to other public services/ goods was not much as is evidenced by the average deprivation score of 3.4. With the introduction of the Block Development Office and other developmental departments of the Government, a large number of roads and subways were constructed. Regarding the road connectivity in Attappady, there are a total of 492.5 Kilometers of roads in Attappady, of which 36% are earthen roads.

Data from Table 25. indicates that 75 per cent of the tribespeople were not deprived of food with respect to its availability but 92.5 per cent of them were deprived while considering its accessibility. Data from Table 24. shows that deprivation with regard to food security is not much as the average deprivation score was 3.1. The household food security approach that evolved in the late 1980's emphasized the availability of food and stable access to it; food availability at the national and regional levels and stable and sustainable access at the local level were both considered essential to household food security. It became clear that adequate food availability at the national level did not automatically translate into food security at the individual and household level. Researchers and development practitioners realized that food insecurity occurred in situations where food was

available but not accessible because of erosion to people's entitlement to food. "Entitlement" refers to the set of income and resource bundles (eg:- assets, commodities) over which households can establish control and secure their livelihoods. Worsening food insecurity came to be viewed as an evolving process in which the victims were not passive to its effects. People may choose to go hungry to preserve their assets and future livelihoods.

A perusal of Table 25 shows that 54 per cent of tribespeople were deprived of nutritional security with regard to availability and 71 per cent were deprived while considering its accessibility. Data from Table 24. indicates that the tribespeople were deprived of nutritional security as the mean score of deprivation was 2.9. Household food security is a necessary but not sufficient condition for nutritional security. Researchers identified two main processes that have a bearing on nutritional security. The first involves the household's access to resources to food. This is the path from production or income to food. The second process involves translating the food obtained into satisfactory nutritional levels. A host of health, environmental, cultural and behavioral factors determines the nutritional benefits of the food consumed. This is the path from food to nutrition. Thus, the evolution of the concepts and issues related to household food and nutritional security led to the development of the concept of household livelihood security. The household livelihood security model allows for a broader and more comprehensive understanding of the relationship among the political economy of poverty, malnutrition and the dynamic and complex strategies that the poor use to negotiate survival. The model places particular emphasis on household actions, perceptions and choices. Food is understood to be only one of the priorities that people pursue. People are constantly required to balance food procurement against the satisfaction of other basic material and non-material needs. Nutritional status is one of the outcome indicators for overall livelihood security since it captures multiple dimensions such as access to food, healthcare and education

Figures in Table 25. clearly indicates that 72.5 per cent of the tribespeople were deprived of protection with regard to availability but 82.5 per cent were deprived of while considering its accessibility. Table 24. clearly indicates that the mean score with regard to protection was 3 which shows that the tribespeople were not much deprived of with respect to this dimention. World Bank (2007) reported that the poor, who work primarily in the informal sector, report experiencing life as more insecure and unpredictable than a decade or so ago. This is linked to unpredictability of jobs that are unreliable and with low returns, loss of traditional livelihoods, breakdown of the state, breakdown of traditional social solidarity, social isolation, increased crime and violence, lack of access to justice, extortion and brutality from the police rather than protection.

It was observed that 67.5 per cent of the respondents were deprived of access to mass media & communication, with regard to availability and 77.5 per cent were deprived of while considering its accessibility. Table 24. clearly indicates that deprivation with regard to mass media and communication was high as is evidenced by the average deprivation score of 2.4. In remote areas such as Attappady, availability of reading materials may be one of the major indicators that hinder the reading habit.

Data from Table 25. reveals that 85 per cent of the tribespeople were not deprived of social recognition with regard to availability and 80 per cent of them were not deprived of while considering its accessibility. Table 24. indicates that deprivation with regard to social recognition of Irula tribespeople is low as was evidenced by the average deprivation score of 4.

A perusal of Table 25. shows that 100 per cent of tribespeople were deprived of ethnic identity, with regard to availability and accessibility . Table 24. reveals that the deprivation with regard to the ethnic identity is very high as was evidenced by the average deprivation score of one. Once they had a rich ethnic identity consisting of their beliefs, practices, songs, dances and indigenous wisdom. They had a

traditional system to maintain the social order of each hamlet in harmony with natural resources and society. The '*Oorumoopan*' is the chief of the society; '*Kuruthalai*', a ministerial position, 'Bhandari', the treasurer and 'Mannukkaran', who determines the sowing season, management of crops, handling indigenous medicines etc. Occupy next position in the social hierarchy. Although significantly diluted, the traditional social hierarchies are still maintained in most of the tribal settlements.

A perusal of Table 25. shows that 100 per cent of tribespeople were deprived of cultural capital, with regard to availability and accessibility . Table 24. reveals that the deprivation with regard to the cultural capital is very high as was evidenced by the average deprivation score of one. The socio-economic progress of a society is mostly linked to participation of the community members in the cultural activities. The modern man derives his / her welfare not only from the economic prosperity but also from the happiness they derive from active and passive participation in sports, culture, arts, literary activities etc. Literacy level and social commitment are few among many factors underlying the socio-cultural progress. Now the government is acting as a leading facilitator of such socio-cultural activities by setting up the infrastructural backgrounds.

Table 25. reveals that 92.5 per cent of tribespeople were not deprived of democratic participation with regard to availability and 52.5 per cent of them were not deprived while considering its accessibility. Table 24. clearly shows that deprivation with regard to democratic participation is not much as was evidenced by the average deprivation score of 3.6.

Data obtained from table 18. showed that 80 per cent of the tribespeople were not deprived of credit facilities, with regard to availability and 87.5 per cent were deprived of while considering its accessibility. Table 24. indicates that deprivation with regard to credit is high as was evidenced by the average deprivation score of three. An efficient and diversified banking system is a must for promoting

savings and channelizing them into investment and helps achieve faster rate of economic growth of a region. Thus the good health of an economy is reflected in the good health of its banking system. In a modern economy, banks are considered not only as the dealers in money but also dealers of development. Thus the inaccessibility towards the credit facility was the reason for the underdevelopment of Attappady region.

4.5 RELATIONSHIP BETWEEN PROFILE CHARACTERISTICS AND EXTENT OF DEPRIVATION

Table 26. Correlation between profile characteristics and extent of deprivation

Sl No:	Profile characteristics	Correlation Coefficient
1	Age	-0.0817
2	Family educational status	0.2558**
3	Food security	0.1708
4	Environmental orientation	-0.1012
5	Alcoholism	0.1463
6	Self confidence	0.0761
7	Political orientation	0.1734
8	Family size	0.131

A perusal of Table 26. indicates that out of the eight independent variables selected only family educational status has got a positive significant relationship with extent of deprivation. There are ample literatures that the productivity of education will have its bearing only after crossing a threshold level. This holds good in the context of *Irula* tribespeople. Median educational level of tribal people in general and *Irulas* in particular is found to be very low- much lower than the required threshold level.(Their formal education just crossed the primary educational level). This suboptimal level of education has positive correlation with extent of

deprivation. Though primary level of education helped to eradicate illiteracy, this level of education was not adequate enough to acquire meaningful employment and at the same time they were to abandon their traditional ways of earning.

4.6 RELATIONSHIP BETWEEN COMPONENT CAPITALS AND EXTENT OF DEPRIVATION

Table 27. Correlation between component capitals and extent of deprivation

Sl No:	Component capitals	Correlation Coefficient
1	Human capital	+0.548 **
2	Social capital	-0.2407**
3	Natural capital	+0.0369
4	Physical capital	+0.1680
5	Financial capital	+0.0476
	Livelihood capital index	-0.0791

Correlation analysis of component capitals of livelihood index reveals that, of the five component capitals selected only two component capitals namely human capital and social capital showed significant relationship with deprivation. Social capital has negative and significant relationship with deprivation, while human capital has positive correlation with the extent of deprivation. Contrary to the popular deterministic understanding of human capital this study indicates that effect of human capital in the case of *Irula* tribespeople was negative. All the human capital parameters except health are related to acquiring knowledge and skills. There are ample literatures that the productivity of education will have its bearing only after crossing a threshold level. This holds good in the context of *Irula* tribespeople. Median educational level of tribal people in general and *Irulas* in particular is found to be very low- much lower than the required threshold level.(Their formal education just crossed the primary educational level). As they are currently alienated and

detached from their traditional livelihood resources owing to their acquiring minimal formal education they are not capable enough to acquire income and employment based only on their level of education and skills. This suboptimal level of education and skills in fact inhibit their livelihood oppurtunities.

4.7 ATTITUDE TOWARDS DEVELOPMENTAL INTERVENTIONS

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 and abilities of the tribals which should be able to change the attitude and capabilities of tribals. 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.

In 1970 the state planning board assessed Attappady as the most backward block in the state and the first Integrated Tribal Development Project (ITDP) in Kerala was initiated there. Since then the state government have implemented several special development project such as Western Ghat Development Programme, Attappady Valley Irrigation Project(AVIP), Integrated Wasteland Development Project(IWDP), Attappady Co-operative Farming Society etc. The general indifference of the functionaries towards tribal development, top-down planning process, lack of transparency in implementation, ineffective monitoring and evaluation etc. have seriously undermined this past developmental efforts.

Table 28. Distribution of respondents with respect to attitude towards developmental interventions.

Sl.No:	Category	Score range	Frequency	Percentage
1	Low	≤48	52	43.3
2	High	49-80	68	56.7
Total			120	100

The developmental programmes implemented in the area through AHADS were Total Hamlet Development Programme, Environmental Literacy Programme, Construction of community resource centres etc. which gave emphasis on the overall development of the tribespeople.

As regards the attitude of tribespeople towards developmental interventions, the figures presented in Table 28 imply that large percentage (56.7) of the respondents had a favourable disposition towards developmental interventions and only 43.3 per cent of them had unfavourable attitude. Even though the tribals have discrepancies in various profile characteristics they welcome any programme that will aim for their development and which will provide them a better standard of living. Activities of AHADS also have acted as catalyst in forming favourable attitude towards developmental intervention.

4.8 Constraints experienced by the tribespeople in livelihood security.

Table 29. Constraints experienced by the tribespeople

Sl. No:	Constraints	Mean score	Rank
1	Land alienation	3.95	1
2	Alcoholism & smoking	3.90	2
3	Absence of title deeds (pattayam)	3.85	3
4	Low purchasing power	3.82	4
5	Poor health condition	3.74	5
6	Lack of credit facilities.	3.23	6
7	Denied access to forest.	3.37	7
8	Wild animal menace	3.32	8
9	Inability to bargain for fair price	3.30	9

10	Lack of infrastructure facilities	3.25	10
11	Exploitation from middlemen	3.19	11
12	Inability to compete with settler farmers	3.13	12
13	Sharp decline in the forest area	2.86	13
14	Lack of educational facilities	2.82	14
15	Ignorance & lack of awareness for development requirements.	2.67	15
16	Declining price of forest produce	2.61	16
17	Exploitation of women and children	2.56	17
18	Indifferent attitude of govt. Officials	2.45	18
19	Lack of health care services	2.32	19
20	Corruption & red tapism of administration.	2.26	20
21	Forest fire	2.17	21
22	Depleting forest resources	2.15	22
23	Difficulty in getting issued different certificates.	2.14	23
24	Change in the traditional cultivation pattern	1.98	24
25	Lack of supportive government policies	1.64	25

Table 29. reveals that land alienation is the most important constraint faced by the tribespeople. Other main constraints identified in the order of severity were alcoholism & smoking, absence of title deeds (pattayam), low purchasing power and poor health condition.

Land encroachment and alienation are the major threats to the income and livelihood of *Irulas*. Large scale land transfers have taken place from tribespeople to non-tribespeople in Kerala and especially in the Attappady region. Emergence of plantations, implementation of government sponsored programmes, indifference of officials and sometimes the favourable attitude of tribal moopans towards the non tribals- all contributed directly or indirectly to the alienation of a native community

from their main means to live. Of several factors, the most pertinent reason for land alienation was the massive influx of people from the midland and the lowland to the highland. A dualistic economy has emerged in Attappady through land alienation of the tribesfolk- a non tribal flourishing economy and a tribal decadent economy. The tribespeople look at the settlers with fear, suspicion and hatred while the non-tribal settlers consider the tribesfolk foolish, lazy and primitive. Various illegal ways have been adopted by in migrants to acquire the land in the possession of tribespeople. They used various means such as offer of gifts, purchase, forcible occupation and acquisition through mortgage to get land from tribespeople. Little documentary evidence exists for most of the transactions. There are cases in which land was obtained by settlers by offering narcotics and liquor. The various methods adopted by settlers for acquiring tribal lands are thus found to be (i) lending of money during off-season at exorbitant rates of interest and occupation of tribal land without any record, in the name of loan (ii) transfer of tribal land to non-tribespeople in the guise of lease (kuthakappattom) or mortgage (bhogyam) (iii) acquisition by encroachment and (iv) acquisition by force and threat. Inspite of this pathetic condition Kerala is fortunate that the violent resistance and extremism flourishing in tribal areas of other parts of the country are not existing in our state. Unless remedial measures are resorted, in order to resolve the land question of tribespeople, the silence and peace may not last long.

Alcoholism is the second major social issue among *Irulas* of Attappady. When the contracting system was replaced by the trained committee of the actual beneficiaries, the people started getting wages at the government approved rates, much higher than the existing wage rates, which lead to increase in disposable incomes. The contractors lobby and the liquor mafia organized brewing of illicit liquor and distributing it by various means stealthy to the hamlets. The women in the area jointly opposed the brewing of illicit liquor in the area, through which the Taikulasangams (TKS or Women's Groups) are formed under the guidance of

AHADS. Thus these groups of tribal women have emerged as a result of their empowerment as a social corrective force. These groups are constituted in each tribal hamlet to fight against the social evils like alcoholism, drugs etc. Major activities of TKS were liquor prohibition, Drug addiction control, action on atrocities against women, action against domestic violence, awareness classes for teenagers and literacy campaigns and tuition for school kids.

Third important constraint identified on the basis of severity is the absence of title deed. This constraint and the land alienation are interrelated. Many a time tribespeople are cheated through false promise by others regarding the distribution of title deeds. The ignorance, illiteracy and vulnerability are the main reason on the part of the tribespeople preventing them from asserting their rights as enshrined in the constitution.

The least important constraints identified were lack of supportive government policies, change in the traditional cultivation pattern, difficulty in getting issued different certificates and depleting forest resources.

Summary

5. SUMMARY

Attappady region is a showcase for the most vibrant and yet conflicting social and cultural ethos. Once only tribals inhabited, now Attappady has become the recipient of waves of migration from the plains of East and West, which eventually made the tribes a minority, constituting less than half of the total population. The tribal population belongs to the *Irula, Muduga* and *Kurumba* community. In the earlier days, the remoteness of Attappady and linguistic uniqueness of the tribes slowed down the advancement of developmental inputs. Lack of adequate support, inappropriate implementation of developmental plans, pilferage of funds and exploitation have often been as the reasons for the stagnation of tribal economy of Attappady. Keeping all these in view, the present investigation was undertaken with the major objectives of analysing the livelihood of Irulas and assessing their extent of deprivation. An analysis of the profile characteristics of the tribespeople, their attitude towards developmental interventions and the constraints experienced by Irulas in livelihood security was also envisaged.

The study was conducted in Palakkad district of Kerala. This district has been purposively selected for conducting the study because this is one of the districts in Kerala having the highest concentration tribal settlements of Irulas, who constituted 80% of tribal population. A sample of 120 tribespeople were selected randomly from three panchayats of Attappady Tribal Developmental Block namely Agali, Pudur and Sholayur .

Detailed review of literature, discussions with experts and scientists in agricultural extension and pilot study were relied upon for the selection of variables. Livelihood analysis, extent of deprivation and attitude of *Irulas* towards developmental intervention were selected as dependent variables for the study. The profile characteristics of the respondents were the independent variables. The data were collected using pre tested and structured interview schedule. The statistical tools used were frequency, simple percentage analysis and correlation analysis.

The salient findings are summarised below:

1. The frequency distribution of the profile characteristics of the respondents reveal that 42.5 per cent of them belonged to young category heading the households.
2. Seventy eight per cent of the respondents had medium family size consisting of five to seven members.
3. Regarding the educational status, 35 per cent of them had only upto primary level.
4. Majority, 62.5 per cent of the respondents are insecure when food security is taken into consideration.
5. Regarding the environmental orientation, majority, 52.5 per cent of the respondents had high level followed by 40 per cent of them had medium level of orientation.
6. It was found that 77.5 per cent of the respondents were non users of alcohol even though it is a strong social menace among them.
7. More than 90 per cent of the respondents were having medium level of self confidence and none of them had high level.
8. Majority, 65 per cent of the respondents had medium level of political orientation, followed by 22.5 per cent had high level.
9. The mean score obtained for formal education was 4.1 which were approximately equivalent to primary level educational status .
10. Regarding informal education, it was seen that respondents were not actively participated in informal educational intervensions of government as well as Non Governmental Organisations as the mean score was only 15.9
11. The tribespeople were not much exposed to mass media as the mean score for the mass media exposure was only 7.5 and the coefficient of variation per cent was 10.67
12. Regarding social participation, the mean value obtained was 9.4, though the attainable maximum score was 84. There is considerable variation in the observed score as indicated by the CV which is 58.51.

13. Contact with extension agency of the tribespeople seems to be low as the mean value is 14.9 and the coefficient of variation was also low ie. 6.71.
14. The Leadership quality of the tribespeople indicated an average level as the mean value was 9.8 and the coefficient of variation was 13.27.
15. Innovativeness was rated as an average as the mean score was 15.1 and the coefficient of variation was 17.22.
16. Health status of the tribespeople was poor, as the mean score was only 3.2. But there was considerable variation in the score as the CV was 65.63.
17. The state of healthcare seeking behaviour of tribespeople was on the unfavour side of the mean score as the score was only 1.4
18. The mean Body Mass Index of the Irulas was 19.9 and the coefficient of variation was 9.55.
19. Two third ie.65 per cent of the tribespeople are categorized as low with respect to human capital.
20. *Irula* tribespeople had a good relationship with their family members as the mean value was 10.8 and the coefficient of variation was only 8.33.
21. About 60 per cent of *Irula* tribespeople belong to high social capital group.
22. The respondents land holding size ranges from zero to 325 cents and their utilisation of natural resource was low as (mean score was 8.2) as most of the tribespeople are now working as wage labourers.
23. About 60 per cent of tribespeople belong to a category of low with respect to their natural capital.
24. About 55 per cent of the tribespeople are categorized as low based on the physical capital.
25. The average monthly income of *Irulas* was found to be Rs 2315 and their annual average expenditure was rated as Rs.2337. On an average *Irulas* annual indebtedness was Rs.1259.
26. About 55 per cent of *Irula* tribespeople were categorised as low in the case of financial capital and 45 per cent of them were rated as high.

27. Regarding the contribution of component capitals, financial capital is rated as the component which is contributing to the highest to the livelihood capital index ie.33.9%. The second highest contribution to the livelihood capital index is by social capital(33.6%). The third highest contributor to the livelihood capital index is physical capital (20.2%) followed by human capital (11.4%) and natural capital (0.8%).
28. Classification of tribespeople based on livelihood capital index reveals that about 55 per cent of the tribespeople has got high livelihood capital index and 45 per cent of them is categorised as low.
29. Correlation between profile characteristics and livelihood capital index revealed that family educational status, environmental orientation, alcoholism and self confidence showed a negative and significant relationship. All the other variables viz. age, food security, political orientation and family size showed no significant relationship with the livelihood capital index.
30. Greater than 50 per cent of the tribespeople were socially and economically deprived of important functionings and they are way behind general population in almost all developmental indicators.

Suggestions for resolving the livelihood insecurity of *Irulas*

1. Implementation of meaningful land reforms so as to ensure that adequate lands are distributed for their livelihood security.
2. Avoid displacement of tribespeople in the name of land distribution, so that they can continue their life in their ancestral land.
3. Effective enforcement of existing legal/ protective measures along with the provisions made under the fifth schedule to prevent the tribal indebtedness bonded labour and other exploitation.
4. Traditional food crops cultivation such as Ragi, Maize, Millet, Chama, Grams and Pulses should be encouraged in the place of cotton and rubber by providing subsidies.
5. Involving tribals especially those engaged in shifting cultivation, closely and gainfully in joint forest management, social forestry, agro-forestry

etc. and facilitate rightful collection and gainful disposal of Minor Forest Produce(MFP) and other produce.

6. Meaningful implementation of democratic decentralisation and major issues relating to the community development should be discussed and solved at the grass root itself by strengthening the democratic institutions like grama sabhas and *oorukuttams* as per the provisions of 73rd and 74th amendments.
7. Development paradigm in line with globalisation is incompatible and adversely affecting disadvantaged sections especially tribespeople. Therefore industrial development utilising large chunks of tribal land in the name of development need to be avoided.
8. Providing the basic minimum services namely food, nutrition, safe drinking water, primary health care, education, safe environment productive assets at least at the level of survival and sustenance with special focus on women and children.
9. Focus needs to be given for improving educational standards of tribespeople thereby reducing drop-out rates and encouraging enrolment/ retention with a special focus on women and the girl child.
10. Making education relevant and suitable to their milieu, local situations and functional needs besides vocationalisation of education to equip the tribal youth with the most wanted technical knowledge and upgradation of skills.
11. Developing forest villages, on priority basis, by ensuring basic infrastructure and with basic minimum services for those tribals living therein.
12. Ensuring food and nutritional security so as to prevent deficiency diseases due to hunger, under-nutrition, starvation and malnutrition through expansion of the ongoing programmes of Supplementary Nutrition Programme, Integrated Child Development Services, Mid-day meal, Targeted Public Distribution Scheme and Village Gramin Banks.

13. Effective implementation of the Indian Penal Code and the SC/ST(Prevention of Atrocities) Act 1989 in order to protect the rights and interests of the tribespeople and ensure their safety and security.
14. Effective and meaningful implementation of the special strategies of Tribal Sub Plan both at central and state levels and ensuring operational optimisation/ maximisation of Integrated Tribal Development Programmes.
15. Trenches and fencing for protecting agricultural land from wild animals should be constructed.
16. Irrigation programmes should be implemented for the optimum utilisation of land for strengthening livelihood options.
17. Ensure programmes and projects to attract the new generation to Agriculture by providing financial assistance.

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Appendices

APPENDIX- I

Attitude of Irulas towards developmental interventions

Sl. No	STATEMENTS	't' value
1	Developmental interventions by the government enhanced the livelihood security of the tribespeople	2.77*
2	Developmental programmes bring welfare to the tribespeople	0.80
3	Influx of the settlers is arrested due to developmental interventions.	0.45
4	Developmental programmes are wastage of government exchequer.	2.67*
5	Developmental programmes help to achieve the felt needs of the tribespeople.	2.78*
6	Developmental interventions help to bridge the gap between tribal and non tribal people.	1.85*
7	Ethnic identity and cultural heritage is getting lost as a result of interventions by the government in the name of development.	1.91*
8	Empowerment of tribespeople is made possible by the effective utilisation of land and other natural resources through different tribal development programmes.	3.46*
9	Developmental interventions enhance the self confidence and problem solving ability of the tribespeople.	2.64*
10	Developmental interventions don't serve the tribal community as a whole	1.46
11	Developmental programmes improved the living standards of tribespeople	0.44
12	The benefits of the programmes are not available to tribespeople on time in accordance with the requirement.	1.96*
13	There is no meaningful monitoring and evaluation of development programmes.	2.08*
14	Bureaucracy and red tapism creates impediments for the tribes people in availing the deserving benefits.	4.36*

15	The benefits and facilities are always cornered by only a very few people among the tribal community.	3.94*
16	Development functionaries have sympathy and empathy towards the plight of tribespeople.	3.18*
17	There is no transparency in account maintenance and implementation of the developmental programmes.	2.23*
18	Developmental interventions increased the human capital of tribespeople.	0.73
19	Gender equality could be achieved through developmental programmes of the government.	2.17*
20	The tribespeople will not be adversely affected if the developmental programmes are cancelled/ discontinued.	1.28
21	Traditional beliefs and social customs are lost due to the developmental interventions.	1.49
22	As different development programmes by the government did not result in achieving the intended results it is better to discontinue the programmes in future.	2.33*
23	Tribespeople get all sorts of help from the developmental interventions in all matters.	1.56
24	All the developmental programmes must be stopped at once	1.23
25	Developmental interventions help tribespeople to involve in meaningful participation in social life and interaction with non tribals.	2.55*

* selected statements for the final scale

APPENDIX- II

KERALA AGRICULTURAL UNIVERSITY

DEPARTMENT OF AGRICULTURAL EXTENSION,

COLLEGE OF AGRICULTURE, VELLAYANI, THIRUVANANTHAPURAM

From

Dr. A. Anilkumar
Professor,

Vellayani

Date:

To

Dear Sir/Madam,

Ms. Shincy.N.I, M.Sc. Student of this department has taken up a research study on "Livelihood analysis of Irula tribe of Attappady" under my guidance. She is developing a scale on "Attitude of *Irulas* towards developmental interventions".

In this regard some statements expressing the attitude of *Irulas* towards developmental interventions 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 five point continuum namely "most relevant, relevant, neutral, least relevant and not 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. Anilkumar

APPENDIX- III

INTERVIEW SCHEDULE
Livelihood analysis of Irula tribe of Attappady

Respondent No:

1. Name of the respondent :

2. Address :
(a)House No :
(b)Name of the hamlet
(c)Name of the village
(d)Name of the panchayat

3. Age:----------years

4. (a)Religion:
(b)Name of the tribe
(c)Sub tribe if any
5.Land size (Farm size) :----------cents

6. Information about members in the family

Sl No:	Relationship with the respondent	Age

HUMAN CAPITAL

1. Formal education

Sl No:	Category	Educational status	Family educational status			
			1.	2.	3.	4.
1	Illeterate					
2	Can read only					
3	Can read and write					
4	Primary school					
5	Middle school					
6	High school					
7	Higher secondary school					
8	Graduation					
9	Post graduation and above					

2. Informal education

SL No:	Exposure to informal educational intervensions	Frequency	
		Yes	**No**
1.	Promotor training		
2.	Embroidary & fabric painting		
3.	Grass broom making		
4.	Compost making		
5.	Decopaech		
6.	Sericulture		
7.	Jam & jelly making		
8.	Animal husbandry		
9.	Coir making		
10.	Scientific & sustainable harvest		
11.	Saksharatha		
12.	Book binding		
13.	Mobile phone repairing		
14.	Vegetable cultivation		

3. Mass media exposure

Which are the following mass media do you use for getting information and kindly indicate frequency of use.

Sl No:	Source	Frequency		
		Regularly	**Occasionally**	**Never**
1	News paper			
2	Radio			
3	Television			
4	Films			
5	Magazines			
6	Internet			

4. Social participation

Do you have membership in any of the organisation yes/ No

If yes please indicate your position and frequency of attendance

Sl No:	Activities	Member	Office bearer	How often do you involve in the activities of the organisation		
				Always	Sometimes	Never
1.	Grama panchayat					
2.	Grama sabha					

3.	Ooru vikasana samithi					
4.	Ooru koottam					
5.	Income Generation Activity Group					
6.	Co-operatives					
7.	Farmers club					
8.	Sports club					
9.	Political party					
10	Mahila samajam					
11.	Anganawadi					
12.	Tribal organisations (a)Thaikula Sangam (Mothers group) (b)Others					
14.	Joint Forest Management Committee					
15.	Users Association					

5. Contact with extension agency

Sl No:	**Category of personnel**	**Frequency of contact**		
		Regularly	**Occasionally**	**Never**
1	Extension functionaries of NGO's (a)AHADS (b)Nature (c)ASSO (d)Sarang (e)Ushus (f)Bharathayathra center (g)Kaanakam (h)Vishwamythri (i)Guruvu (j)Unarvu			
2	Agricultural officer/ Assistant			
3	VEO			
4	LVEO			
5	Health workers			

6. Leadership quality

Sl No:	**Statements**	**Always**	**Sometimes**	**Never**
1	Do you think you can change the attitude of others			
2	Do you guide and influence the behaviour of others in taking decisions			
3	Do you feel others are convinced by you			
4	Are you available to others at any time to extend necessary help to them.			
5	Do you identify the social problems and take it up with others for resolving			

7. Innovativeness

Sl.No:	Statements	Response pattern				
		SA	A	UD	DA	SDA
1.	You would feel restless unless you try out an innovative method you have come across.					
2.	You are cautious about trying new practices.					
3.	You like to keep up-to-date information on the subjects that interest you					
4.	You would prefer to wait for others to try out new practices first.					
5.	You opt for the traditional ways of doing things than going in for newer methods.					

8. Addictive health behaviour

Do you or any of the 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			

9. Health care seeking behaviour

Sl No:	**Kind of treatment centres**	
1	Usually visit Hospitals/ Health care centres even for minor illness	
2	Usually visit Health care centres when illness became serious/ chronic.	

10. Constraints in availing Healthcare services

Sl No:	**Constraints**	**Most important**	**Important**	**Least important**
1	Lack of adequate no: of doctors in the hospital.			
2	Lack of medicines			
3	Irregular attendance of doctors & paramedical staff			
4	Bribery & corruption			
5	Lack of hygiene in hospital & premises			
6	No hospital facility in near by areas			
7	Lack of empathy & sympathy on the part of doctors &para medical staff			
8	Lack of adequate attention given to the patients			
9	Lack of modern equipments for diagnosis			
10	Inadequate no: of paramedical & supporting staffs.			

11. Anthropometric measurements

Height of the individual=----------cms

Weight of the individual=----------Kgs

II.SOCIAL CAPITAL

1. Informal networks

Relationship with family members

Sl No:	**Relationship**	**Relationship status**		
		Good	**Average**	**Poor**
1	Father-child			
2	Mother-child			
3	Father-mother			
4	Brother sister			

2. Relationship with others

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

3. Activities in public space

Extent of participation in activities of public space.

Sl No:	Activities	Always	Sometimes	Never
1.	Informal get together and discussions in : (a)The nearby tea shops (b)Barber shops (c)Stitching centres (d)Small retail shops (e)Community well premises (f)Others (specify)			
2.	Participation in the neighbourhood groups			
3.	Participation in social and political meetings.			
4.	Involvement in other community activities 1.Festivals 2.Death 3.Mariage			

4. Concern towards the weaker sections

Sl No:	Type of people	Very much concerned	Concerned	Neutral	Not concerned	Not at all concerned
1.	Senior citizens					
2.	Women					
3.	Children					
4.	Destitutes					
5.	Others					

5. Interdependence and networking

Sl No:		Extent to which you maintain interdependence and reciprocal relationships		
		Regularly	**Occasionally**	**Never**
1.	Neighbours			
2.	Friends			
3.	Relatives			
4.	Government functionaries			
5.	Social activists			
6.	Others			

6. Membership in organisations and contact with persons outside the village
Yes/ No

NATURAL CAPITAL

Land owned

Please mention the total area of land owned by you currently (Both owned and leased in):
Owned =----------cents
Leased in =----------cents

Utilisation of Natural resources to fulfil livelihood requirements

Sl no:	Type of requirements	Always	Sometimes	Never
1.	Hunting			
2.	Cultivation			
3.	Honey collection			
4.	Collection of Minor Forest Produce			
5.	Fuel wood collection			
6.	Others (Specify)			

Common property resources

Sl No:	Common property resources	Access		Quality		
		Unlimited/ unrestricted	Highly restricted	Currently in good condition	Depleting	Almost depleted
1	Forest (a)Minor forest produce (b)Medicinal plants (c)Honey (d)Fruits (e)Others					
2	Water resources					
3	Common land resources					

PHYSICAL CAPITAL

1. Type of house

Sl No:	Type of the house	Condition of the house		
		Good	Average	Poor
1	Thatched shed (wall & roof)			
2	Mud walled thatched			
3	Brick or laterite walled thatched			
4	Brick or laterite walled tiled			
5	Concrete house (small)			
6	Concrete house (big)			

2. Nature of house based on ownership

Sl No:	Type of house	
1	Own house	
2	Own house but constructed by the government support	

3. Specify whether the house is shared by two or more separate families Yes/ No

4. Livestock possession

Sl No:	Type of animal	No:	Stage of development
1	Bullock		
2	Milch cow		
3	Goat		
4	Piggery		
5	Duckery		
6	Poultry		
7	Others		

5. 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	Radio/ Transistor	
10	Bicycle	
11	Motor cycle/ Scooter	
12	Sewing machine	
13	Furniture (a)Table (b)Chair (c)Cot (d)Almirah (e)Others	

6. Access to safe drinking water

Sl No:	Distance from home to the source	Source(Specify)
1	House premises	
2	Upto 500m	
3	500m-1Km	
4	1-2Km	
5	2-4Km	
6	>4km	

8. Do you have latrines in your house? **Yes/ No**

9.Do you have electricity in your house? **Yes/ No**

If No what type of light do you use?

(a) Candle
(b) Kerosine lamp
(c) Others

9. Details regarding the availability of fuel

1. Type of fuel used in the house

Sl No:	**Type**	
1	Wood	
2	Agricultural waste	
3	Cow dung	
4	Others	

2. Source of fuel for the family

Sl No:	**Source**	
1	Collected from the house premises	
2	Collected from non forest areas in the village	
3	Collected from forest	
4	Purchased	
5	Others	

3. Family members who collected the fuel

Sl No:	**Person responsible**	
1	Husband	
2	Wife	
3	Children	
4	All family members	
5	Others	

4. Details regarding fuel collection

Time spent in day for fuel collection	**Frequency of collection**	**Distance travelled**	**Quantity collected at each time**	**If purchased cost of material**

FINANCIAL CAPITAL

1. Expenditure pattern

Sl No:	Items	Total expenses per month
1	Food	
2	Cloth	
3	Electricity	
4	Medical expenses	
5	Education	
6	Religion/ Social function	
7	Taxes	
8	Alcohol	
9	Recreation	
10	Travelling expenses	
11	News paper/ Magazine	
12	Fuel	
13	Mobile phone charges	
14	Others	

2. Income per month

Amount in Rs.----------

3. Indebtedness

Amount in Rs

4. Savings propensity

Sl No:	Nature of savings	Amount saved in Rs
1	Bank	
2	Post office	
3	Groups	
4	Chitty	
5	Ornaments	
6	Insurance	
7	Land	
8	Others	

5. Borrowing pattern

Please indicate your response in the appropriate alternative by putting a tick(√) mark.

Sl No:	**Source of borrowing**	
1	From non institutional sources for daily expenses	
2	From non institutional sources for productive purposes	
3	From non institutional sources for consumption purposes	
4	From non institutional sources when contingency occurs	
5	From Income Generation Activity Group	
6	Only from institutional sources	

Attitude of *Irulas* towards developmental intervention

Please indicate your response in the appropriate alternatives by putting tick(√) mark

Sl No	**STATEMENTS**	**SA**	**A**	**UD**	**DA**	**SDA**
1	Developmental interventions by the government enhanced the livelihood security of the tribespeople					
2	There is no transparency in account maintenance and implementation of the developmental programmes.					
3	Gender equality could be achieved through developmental programmes of the government.					
4	Developmental programmes are wastage of government exchequer.					
5	Developmental programmes help to achieve the felt needs of the tribespeople.					
6	Developmental interventions help to bridge the gap between tribal and non tribal people.					
7	Ethnic identity and cultural heritage is getting lost as a result of interventions by the government in the name of development.					
8	Empowerment of tribespeople is made possible by the effective utilisation of land and other natural resources through different tribal development programmes.					
9	Developmental interventions enhance the self confidence and problem solving ability of the tribespeople.					

10	As different development programmes by the government did not result in achieving the intended results it is better to discontinue the programmes in future.					
11	Developmental interventions help tribespeople to involve in meaningful participation in social life and interaction with non tribals.					
12	The benefits of the programmes are not available to tribespeople on time in accordance with the requirement.					
13	There is no meaningful monitoring and evaluation of development programmes.					
14	Bureaucracy and red tapism creates impediments for the tribes people in availing the deserving benefits.					
15	The benefits and facilities are always cornered by only a very few people among the tribal community.					
16	Development functionaries have sympathy and empathy towards the plight of tribespeople.					

EXTENT OF DEPRIVATION

1-Most deprived
2-Deprived
3-Neutral
4-Not deprived
5-Not at all deprived

Sl No:	**Statements**					
		1	**2**	**3**	**4**	**5**
I	**OWNED LAND FOR CULTIVATION**					
a.	Availability of cultivable own land					
b.	Availability of leasable cultivable land					
c.	Accessibility to leasable cultivable land					
d	Availability of other cultivable land					
e.	Accessibility of other cultivable land					
II	**FOREST LAND FOR CULTIVATION**					
a.	Availability of cultivable land in the forest.					
b.	Accessibility to cultivate the land in the forest					
III	**FOREST RESOURCES**					
a.	Availability of forest resources in adequate quantity					
b.	Accessibility to collect the forest resources					
IV	**INCOME**					

a.	**Opportunities exists, to earn income to lead a decent life**					
b.	**Accessibility to utilise the opportunities to lead a decent life**					
V	**EMPLOYMENT**					
a.	**Employment opportunities exists, to lead a decent life**					
b.	**Accessibility to utilise the employment opportunities to lead a decent life**					
VI	**EDUCATION**					
a.	**Availability of educational institutions in the nearby area**					
b.	**Accessibility of educational institutions in the nearby area**					
c.	**Adequacy of teaching staffs in the nearby school**					
d.	**Utilisation of the service of the teachers properly**					
e.	**The availability of physical facilities in the nearby school**					
f.	**Utilisation of the physical facilities**					
g.	**Availability of mid day meal in the school**					
h.	**Utilisation of mid day meal**					
VII	**HEALTH**					
a.	**Availability of hospitals in the nearby area**					
b.	**Accessibility to the services of hospitals in the nearby area**					
c.	**Availability of adequate equipments in the nearby hospital**					
d.	**Accessibility to the proper utilisation of these equipments**					
e.	**Availability of adequate number of doctors in the nearby hospital**					
f.	**Accessibility to utilise the service of the doctors in the nearby hospitals**					
g.	**Availability of adequate number of supporting staff in the nearby hospital**					
h.	**Accessibility to utilise the services of the supporting staff**					
i.	**Availability of adequate medicines in the nearby hospital**					
j.	**Accessibility to utilise the medicines properly**					
VIII	**HOUSING AND DRINKING WATER FACILITY**					
a.	**Availability of own land to build the house**					
b.	**Utilisation of own land to build the house**					
c.	**Availability of other lands to build the house**					

d.	**Accessibility of other lands to build the house**					
e.	**Availability of materials to build the house**					
f.	**Accessibility of materials to build the house**					
g.	**Availability of drinking water facility in the locality**					
h.	**Accessibility to utilise the drinking water facility**					
IX	**OTHER PUBLIC SERVICES/ GOODS**					
a.	**Availability of service rendered by post office, library, transportation facility, financial institutions, Krishi bhavan, community welfare centres etc.**					
b.	**The accessibility to utilise these services properly**					
X	**FOOD SECURITY**					
a.	**Availability of food items which you would like to eat**					
b.	**The purchasing power to buy the food items you prefer**					
XI	**NUTRITIONAL SECURITY**					
a.	**Availability of food items with adequate nutritional content**					
b.	**Accessibility to the available food items with adequate nutritional content.**					
XII	**PROTECTION**					
a.	**Availability of legal framework and social situation to lead a secured life**					
b.	**Accessibility towards availing of legal framework and social situation to lead a secured life**					
XIII	**ACCESS TO MASS MEDIA & COMMUNICATION**					
a.	**Availability of news paper, Radio, Television etc. in the individual household as well as in the community**					
b.	**Accessibility to the utilisation of these facilities**					
XIV	**SOCIAL RECOGNITION**					
a.	**Scope for equal opportunity and recognition in the public space**					
b.	**Accessibility to enjoy equal opportunity and recognition in the public space**					
XV	**ETHNIC IDENTITY**					
a.	**Existence of social situation for retaining and preserving ethnic identity**					
b.	**Accessibility and ability in the existing social situation to retain and preserve ethnic identity**					
XVI	**CULTURAL CAPITAL**					
a.	**Existence of cultural situation for retaining and preserving cultural heritage, traditional wisdom, folklore and value system**					

b.	**Accessibility to the prevailing cultural condition in retaining and preserving cultural heritage, traditional wisdom, folklore and value system**					
XVI I	**DEMOCRATIC PARTICIPATION**					
a.	The situation existing in the community towards the political and democratic participation					
b.	Accessibility of tribespeople to participate meaningfully in the political and democratic discourse					
XVI II	**CREDIT**					
a.	The availability of credit facilities to meet the livelihood requirements					
b.	The situation to make best use of the existing credit facilities					

INDEPENDENT VARIABLES

1.Food security status

Sl No:	**Statements**	**Score**
1	Enough	
2	Alright	
3	Insuficient	

2. Environmental orientation

Sl No:	**Statements**	**Agree**	**Disagree**
1	Man is exploiting the earth too much		
2	Man has to be greatly concerned about environmental issues like deforestation.		
3	There is truth in what environmental activists claim and we should lend our support to them		
4	Do you agree that older methods of farming were more safer than present		
5	Intensive agricultural practices cause environmental hazards.		

3.Alcoholism

Frequency of intake	
Daily	
Weekly	
Occasionally	
Never	

5. Self confidence

Sl No:	**Statements**	**Always**	**Most often**	**Often**	**Occasionally**	**Never**
1	I feel no obstacle can stop me from achieving my final goal					
2	I am generally confident in whatever I do					
3	I am bothered by the feeling that I cannot compare with others					
4	I am not interested to do things at my own initiative					
5	I usually workout things for myself rather than get someone to show me					
6	I get encouraged easily					
7	Life is a struggle for me most of the time.					

8	I find myself worrying about something or the other					

5.Political orientation

Please state agreement or disagreement to each of the statements below

Sl No:	Items	Agree	Disagree
1	Recognizing power relations existing in the society is very important in resolving the problems of the society.		
2	Democracy is the best political principle and philosophy for ideal governance		
3	Individual approach will not help in solving problems		
4	Organizing people for asserting their genuine and fundamental rights is an important pre-requisite for a democratic society.		
5	Political parties are inevitable and indispensable for a vibrant democratic society functioning in accordance with constitution.		
6	Sustainable progress and welfare of people can be achieved only through organized political and social intervensions		
7	A political approach to social issues actually preserve the existing power relations and prevent distributive justice, social transformation and progress		
8	Political parties and other social organisations play no role in social development and therefore it is a curse to the society		
9	Principles like freedom, equality and fraternity should be the guiding cardinal principles of a strong civil society.		
10	Distributive justice makes a social system humane and modern.		

The constraints experienced in livelihood security

Sl No:	Statements	Very severe	Severe	Not severe	Not at all severe
1.	Wild animal menace				
2	Sharp decline in the forest area				
3	Inability to compete with settler farmers				
4	Declining price of forest produce				
5	Lack of supportive government policies				
6	Change in the traditional cultivation pattern				
7	Absence of title deeds (pattayam)				
8	Lack of credit facilities.				
9	Denied access to forest.				
10	Exploitation from middlemen				
11	Corruption & red tapism of administration.				
12	Difficulty in getting issued different certificates.				
13	Depleting forest resources				
14	Land alienation				
15	Poor health condition				
16	Ignorance & lack of awareness for development requirements.				
17	Inability to bargain for fair price				
18	Exploitation of women and children				
19.	Lack of health care services				

20	Low purchasing power				
21	Alcoholism & smoking				
22	Indifferent attitude of govt. Officials				
23.	Lack of infrastructure facilities				
24	Lack of education facilities				
25.	Forest fire				

DATA COLLECTION IN PROGRESS

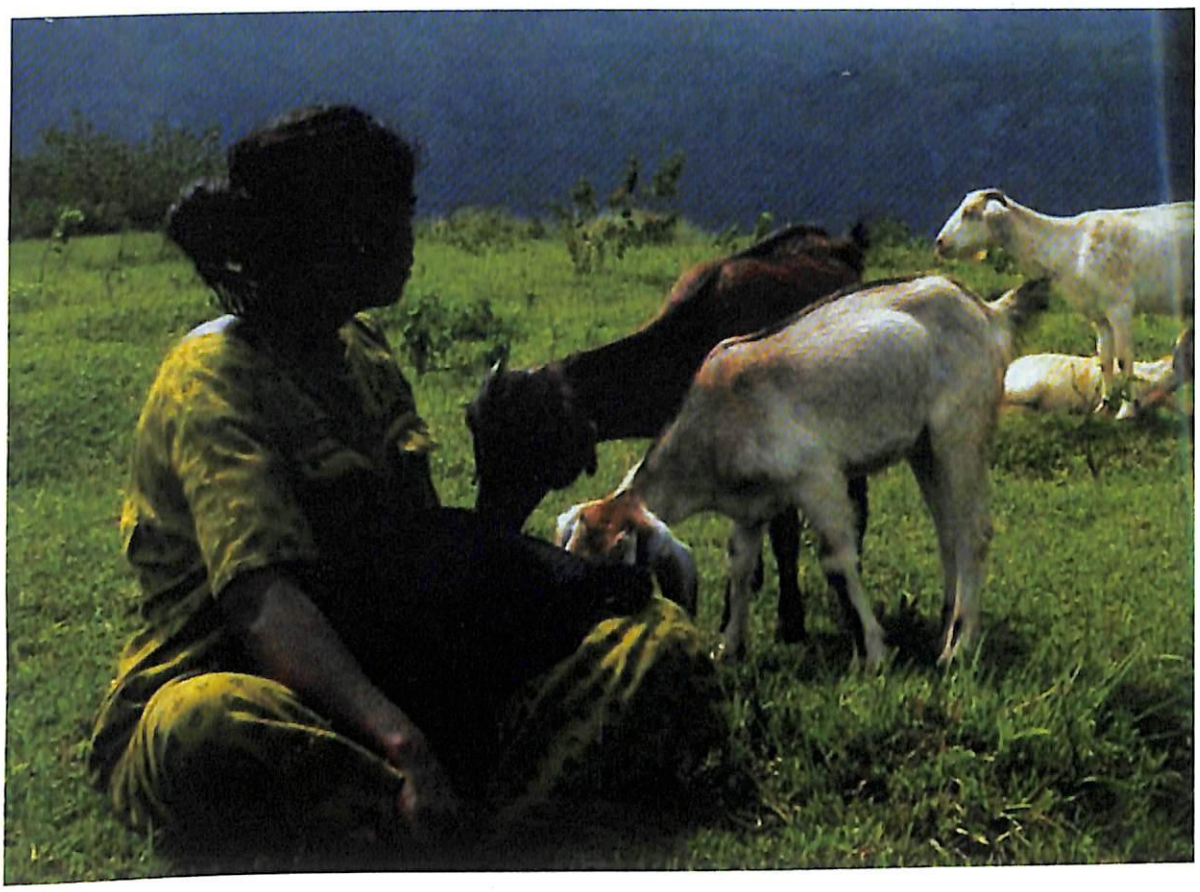
THROUGH THEIR LIVELIHOOD OPTIONS

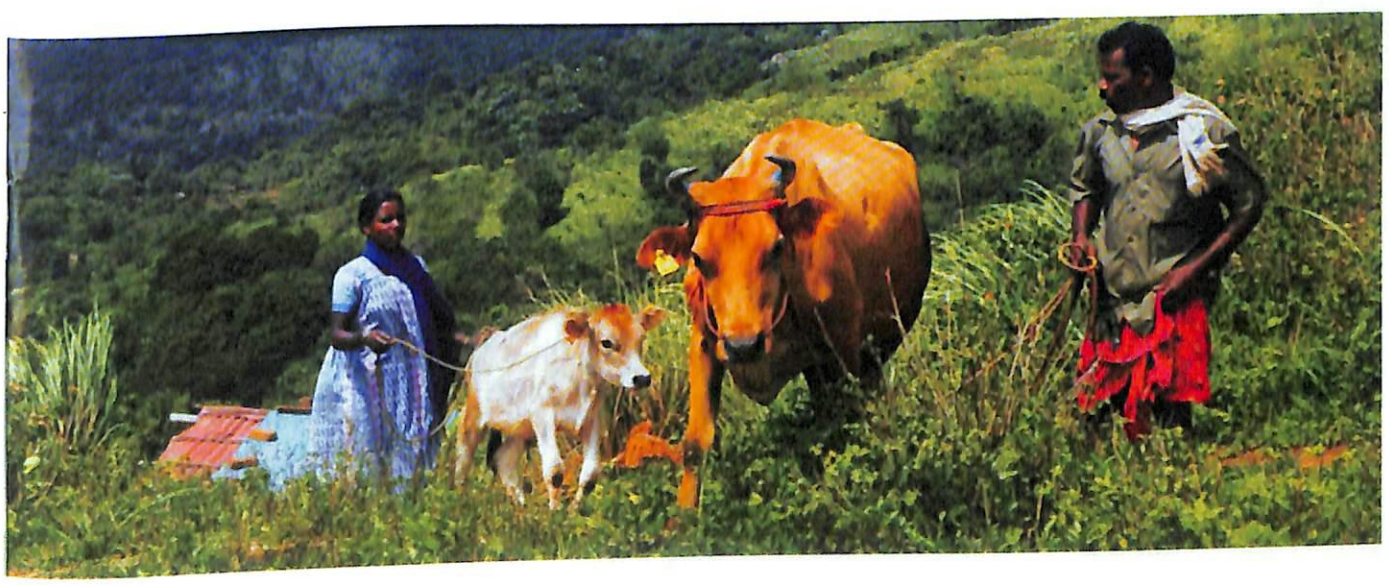
GROUNDNUT HARVEST

BANANA CULTIVATION BY
SURYA GROUP MEMBERS

COWPEA HARVESTING IN THAZHE MULLI

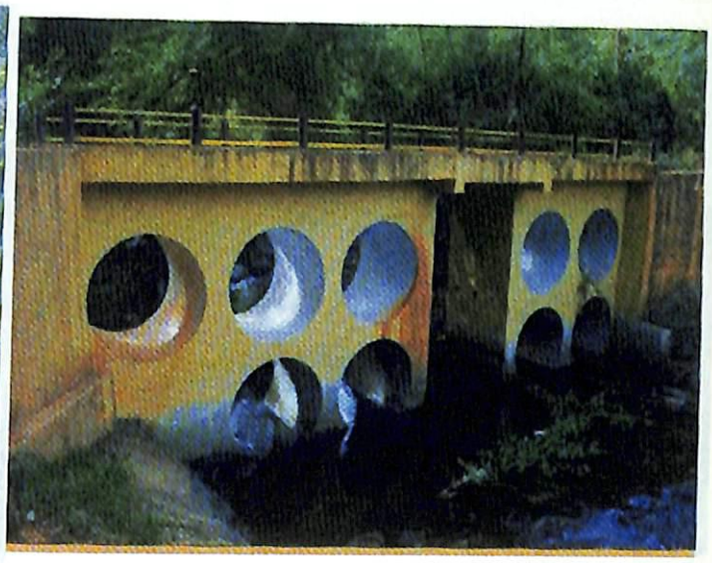
INTEGRATED LIVE STOCK DEVELOPMENT ACTIVITIES BY AHADS AND KUDUMBASREE





INFRASTRUCTURE DEVELOPMENT

ROPE WAY IN KADUKUMANNA



PIPE BRIDGE IN KARUVARA

KATTEKKAD - PULIYARA ROAD

CHAVADIYOOR BRIDGE

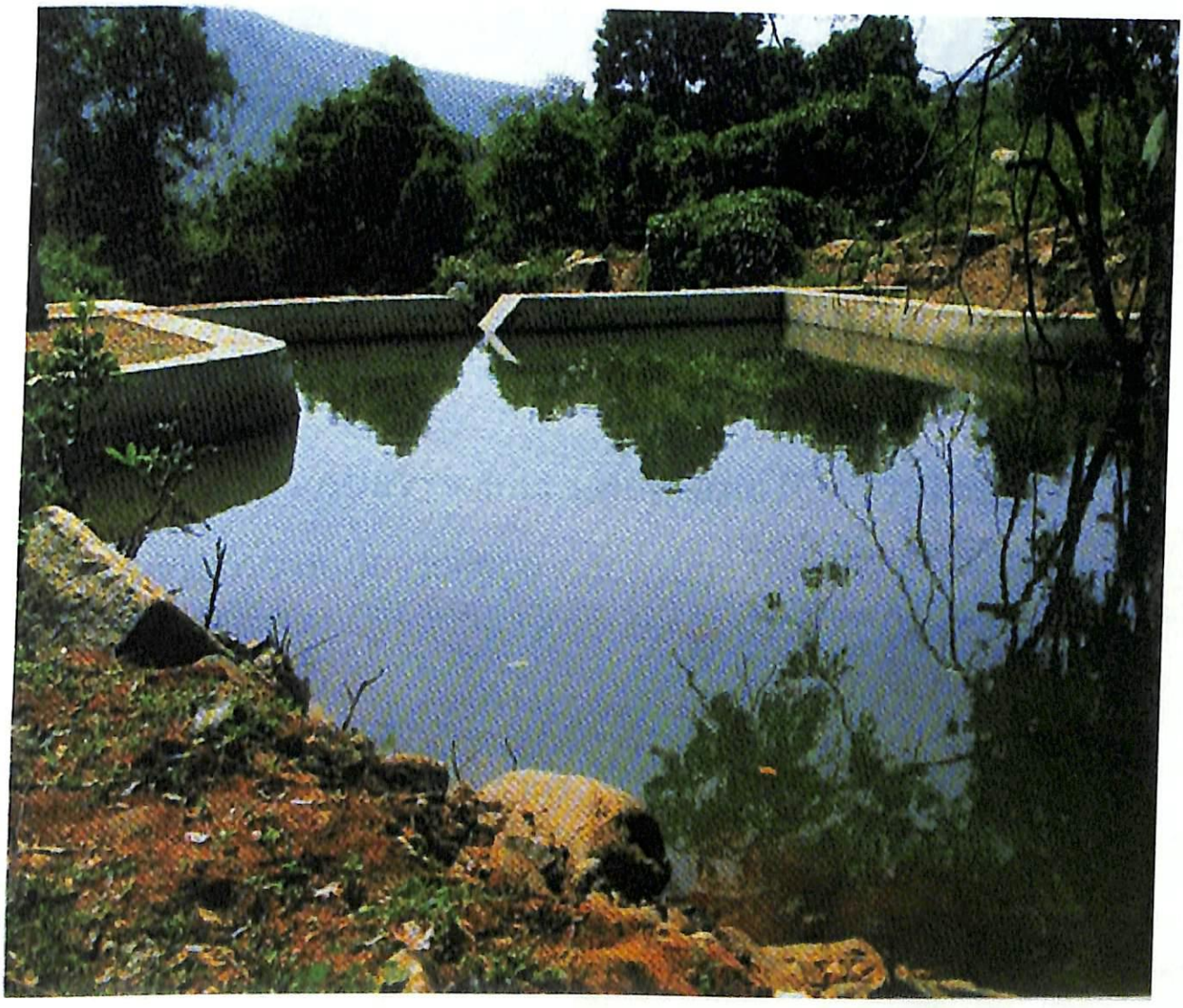
A TRIBAL HEALING CENTER AT VATTULAKKY

KUDUMBASREE GROUP MEMBERS

AN ENVIRONMENTAL LITERACY PROGRAMME

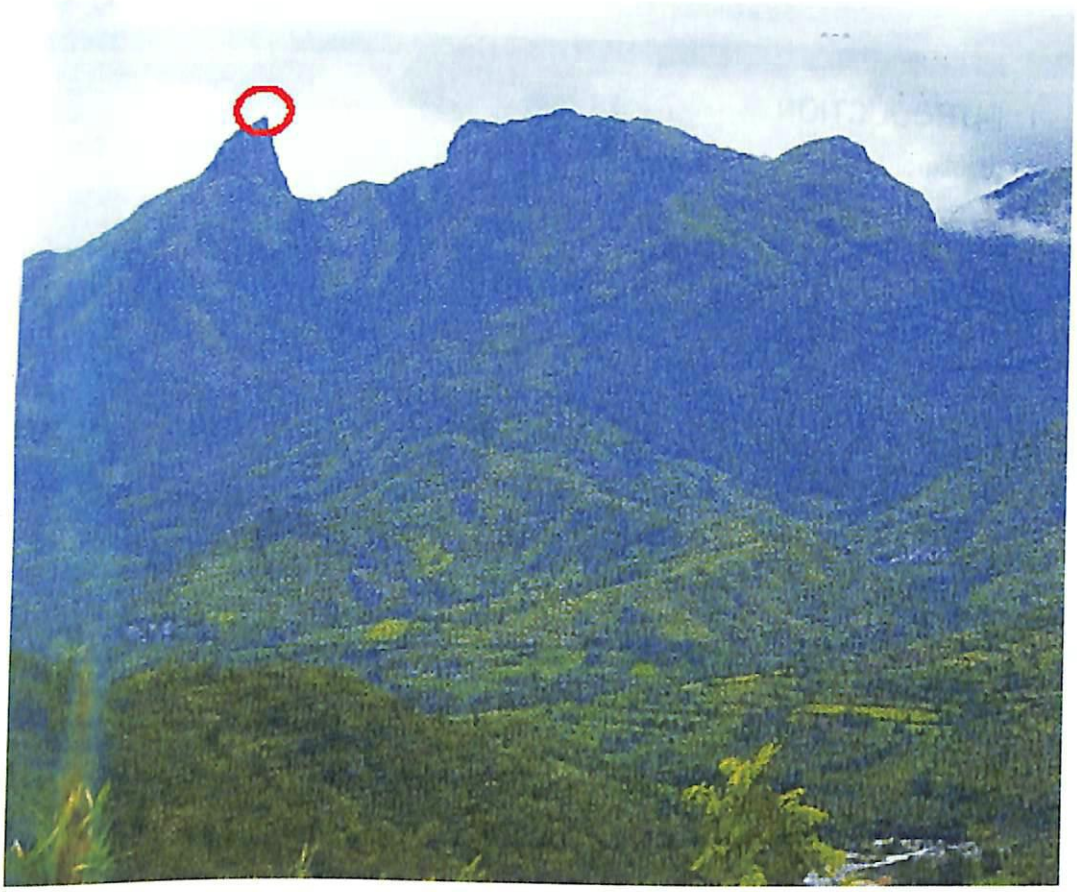
TOTAL HAMLET DEVELOPMENT PROGRAMME BY AHADS

CHANGE PHOTOGRAPH OF SWARNAGADHA HAMLET



CHECKDAM IN UMMATHAMPADY

MALLESWARAMUDI



Irulas believe that the lord Siva's abode is the Malleeswara peak, the highest point in Attappady, which can be seen from all Irular hamlets of Attappady.Mahasivarathri, the birthday of LordSiva is the most important festival celebrated with pomp and gaiety by the Irular.

Abstract

LIVELIHOOD ANALYSIS OF IRULA TRIBE OF ATTAPPADY

by

SHINCY.N.I

(2009 – 11 - 130)

Abstract of the thesis

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8. ABSTRACT

Tribesfolk of Attappady are the most backward among the vulnerable groups of Kerala. Their economy is traditional in nature, depending mainly on land and forest. The valley was not open to outsiders till the 1950s. However, the land utilisation pattern of Attappady drastically changed since then owing to massive in-migration of people from the plains to these areas in search of land for cultivation and for starting plantations. Inappropriate implementation of schemes and lack of adequate technological support resulted in a drastic decline in the livelihood options of the tribespeople. This study entitled "Livelihood analysis of *Irula* tribe of Attappady" was an attempt to analyse the livelihood of one of the most prominent tribal group in Attappady.

The study was conducted in Palakkad district of Kerala. A sample of 120 tribespeople were selected randomly from three panchayats of Attappady Tribal Developmental Block namely Agali, Pudur and Sholayur .

The study indicated that most of the tribespeople belonged to the young and middle age group and seventy eight per cent were having 5-7 members in their family. Among the respondents 35 per cent had primary school level family educational status and 62.5 per cent of them are insecure with respect to food security status. 52.5 per cent of the tribespeople had high level of environmental orientation and 77.5 per cent of them were non users of alcohol. The self confidence level was medium among majority of tribespeople (92.5%) and 65 per cent of them belonged to the medium level category with respect to their political orientation.

The study revealed that two third ie. 65 per cent of the tribespeople are categorized as low with respect to human capital and 60 per cent of them belongs to high social capital group. About 60 per cent of tribespeople belong to a category of low with respect to their natural capital and 55 per cent of them are categorized as low based on the physical capital. About 55 per cent of *Irula* tribespeople were categorised as low in the case of financial capital and 45 per cent of them were rated as high.

Regarding the contribution of component capitals, financial capital is rated as the component which is contributing to the highest to the livelihood capital index ie.33.9%. The second highest contribution to the livelihood capital index is by social capital(33.6%). The third highest contributor to the livelihood capital index is physical capital (20.2%) followed by human capital (11.4%) and natural capital (0.8%).

Classification of tribespeople based on livelihood capital index reveals that about 55 per cent of the tribespeople has got high livelihood capital index and 45 per cent of them is categorised as low.

Greater than 50 per cent of the tribespeople were socially and economically deprived of important functionings and they are way behind general population in almost all developmental indicators.