

Gathering of plant resources for commercial trade is a recent phenomenon. Commercial gathering has its roots in the revival of traditional medicine for health care needs all over the world from later part of 70's. Owing to market demands many of the Paliyan families in Sathuragiri today collect plant materials of commercial values. The appearance of middlemen and contractors from plains has further accelerated the commercialization of forest resources. This has led to the introduction of cash economy in the life of Paliyans and is slowly replacing traditional self-sufficient subsistence pattern. Thus the ecological equilibrium the tribe has established with their immediate environment is being gradually eroded.

### **Impact of commercialization on Paliyan livelihood**

Expansion of agro-pastoral activity like building temples and extension of grazing activities into tribal habitats have forced a few Paliyans into the interior forest and many of them have started working as manual laborers in the agricultural fields of the plains. Some have found jobs with the Forestry Department as Watchers and Guards. The degradation of forest is further accelerated due to the extension of agro - pastoral activities such as grazing, commercial gathering and fuel wood collection by the people from plains.

Habitat destruction and commercialization has left the Paliyans of Sathuragiri with few choices. The younger generations of Paliyans have been forced to discard their traditional way of life and adapt to the changing situations. Many of the young generation Paliyans have become commercial NTFP collectors who sell their produce to middlemen and contractors. Few have become agricultural laborers and thus are forcefully with drawn from their environments. Thus, the process of commercialization, the destruction and encroachment of their habitats by the agro pastoral communities has once for all alienated the Paliyans of Sathuragiri from the forest. Commercialization leads to ultimate destruction of Paliyan life and culture. With the disappearance of Paliyan culture goes the practical understanding of ecological relationship between their society and their environment.

Loss of Traditional Ecological Knowledge (TEK) among the remnant Ecosystem People such as the Paliyans of Sathuragiri is an area of concern. The tribals possess unique knowledge about the use of flora and fauna and most of these knowledge is unknown to the outside world. The younger generation Paliyans of Sathuragiri seems to have forgotten the art of honey collection. The availability of honey in Sathuragiri hills has declined in recent years due to large scale disturbances occurring in the forest areas. Decline in the availability of honey indicates the poor health of this ecosystem.

In recent times, owing to market pressures, gathering NTFP like root, bark, fruits and leaves etc., for commercial purposes become an important forest related activity of Sathuragiri Paliyans. The nature of NTFP collection for commercial purposes itself is an unsustainable activity causing

ecological disturbances on forest ecosystems. In a fastly degrading environment of Sathuragiri, the gathering of NTFP is becoming a less profitable activity. Some of the families have already started establishing contacts with the Caste Hindus of the plains and started working as agricultural laboureres. Thus they are gradually incorporated into the lower rungs of the society.

### **Malayali Tribe: People description and Historical setting**

The history of Kollimalai took a major change with the arrival of “*Malaiyali*” community. There are very little historical evidences regarding the movement of the Malaiyali into Kollimalai. The myths connected to the migration of the Malaiyali community into Kolli Hills has been well described by Thurston (1909). These descriptions have been corroborated by the oral history of some of the hereditary leaders such as *pattakaran*, *sadhi koundan* and *kangani*. According to Thurston (1909) the word Malaiyali denotes inhabitant of the hills (Malai = hills). Malayali believe that they are Vellalas who migrated to various hills including Kolli hills from Kanchipuram.

Thurston (1909) does not consider Malayalis as tribals. He argues “ The Malaiyalis have not... like Todas of Nilagiris, any claim to be considered as an ancient hill tribe, but are Tamil speaking people, who migrated from the plains to the hills in comparatively recent times”. Many authors including Thurston have shown that Malayali do not have tribal qualities. The Malayalis call themselves as “*Malai-Vazh-Makkal*” (people of hills) and not as “*Pazhang-Gudi-Makkal*” (Original people). However, they have been recognized by Government of India as Scheduled Tribe due to their social and economic backwardness and they are entitled to all the rights and benefits provided for Scheduled Tribes.

The history of Kollimalai shows that prior to Malaiyalis, *Vedars* or *Vettuvans* (hunters) were the predominant group in the Kollimalai. The sangam literatures as well as the myths prevailing among Malaiyalis refer to the succession of the migrants over Vedars. The period prior to Malaiyalis probably could have been characterized by pristine ecosystems in which the *Vedars* who were essentially hunter-gatherers lived. The appropriation of resources with minimal manipulation is the essential characteristics of hunter-gatherer groups. The invasion and the settlement of Malaiyalis is a crucial point in the ecological history of Kollimalai in which the pristine ecosystem must have changed to partially altered ecosystems. Malaiyalis brought agriculture to Kollimalai, which led to periodic manipulation with partial domestication of resources.

## **Kolli Hills: Geography and land scape history**

Kollimalai is situated in the Namakkal district of Tamil Nadu. Some part of the eastern portion of the hill lies in the Perambalur district. Kolli Hill (Kollimalai in Tamil) has an area of 282.92 sq.km. It stretches 29 kms from north to south and 19 km from east to west. Kollimalai is a part of the Talaghat stretch and Eastward of the hill lies Pachamalai. Kollimalai and Pachamalai are divided by a broad valley. Kollimalai on the western, eastern and southern sides rise abruptly from the plains and on the northern side ascend to the plains by numerous long and gently sloping spurs.

Kollimalai is also called as *Sathuragiri* or square hill. But the hill contains of high rising peaks and ravines. The highest point in Kollimalai is 4663 feet above sea level, but the general level of the upper surface of the hill is not more than 3500 feet (1000 m). Its eastern and northeastern flanks drain either into Thurayur valley or the valley of the Periyar. Kollimalai has a total geographical area of 28293 ha. Forest occupies 44 % of the total geographical area and agricultural activities take place in 51.6%. The other activities occupy less than 5% of the total geographical area. The total population of Kolli Hills is 33,888 living in 6840 households, as per 1991 census.

## **Ecological history of the Forests, Community conservation**

Le Fenu manual (1883) has estimated the area of forests in Kollimalai around 216 sq miles. The trees described in the manual are *Pterocarpus marsupium*, *Connarus latifolia*, *Dalbergia latifolia*, *Terminalia chebula*, *Tamarindus indica*, *Atrocarpus heterophyllus*, *Sandalum album* etc.

Hemingway (1907) points out that in Kollimalai the inaccessibility prevented the transportation of better wood from higher slopes which in turn prevented any trade. It notes that at the top of the slopes and in the ravines the forest is deciduous. At the foothills, the growth of the trees were poor due to frequent intervention of the population. The lower slopes were covered with acacias, *Usilai*, sati-wood and *Prosopis spicigera* with *Strychnos Nux-Vomica* near the streams. In the higher up, *Tectona grandis*, *Pterocarpus marsupium*, *Anogeissus latifolia* and *Hardwickia binata*. There were few bamboos in the east and west slopes. According the Gazetteer the best forests were found in the *Karavallikombai* reserve.

The reports of Thurston (1909) suggest that Malaiyalis were regularly travelling between Kollimalai and Pachamalai in Trichy district. The interaction was at individual as well as family level. Similarly, they were also visiting Namakkal regularly. The selling of *Kollimalai sarakku* (*Produce of KolliHills*) in the plains offered scope for Malaiyalis to gather information regarding various development-taking places in the region. Malaiyalis also worship Sriranganathar at Srirangam and they regularly visit major temples in the plain. The interaction with the sanskritised form of religion shows that the community is not a closed-one.

The forests at Kollimalai underwent a major change during the last century and the early part of this century. From a pristine ecosystem, it became partially altered ecosystem in which periodic manipulation of the resources through forest management. Plantations, introduction of exotic spices and varieties led to partial domestication of resources. As elsewhere in India, the people of Kollimalai and the Forest Department developed a social distance and in this forest is seen as government resources rather than the responsibility of the community. Though, people realize the negative consequences of deforestation, they believe that it is far beyond their control.

## **Sacred Groves of Kolli Hills**

The strong linkages of the Malaiyalis with forest and trees can be seen in the context of *Sami Solai* or sacred groves. Certain beliefs and faith have helped to protect certain patches of land with good tree cover. It is a common feature in Kollimalai that one finds a group of villages worshipping a particular deity who usually is found in the interior of the forests or on the periphery of it. Some of these areas fall under reserve forests. Rituals on big scale are conducted periodically to these gods. The groves very often harbors remnant of the past vegetation of landscape.

Some of the forest patches are considered as the abode of four or five goddesses and gods. These deities are housed not far from each other. Arangathappan, Odaiyar, Kannimar, Kali and Ilayamachi are housed amidst trees like *Syzigium cumini*, *Ficus racemosa*, *Ficu bengalensis*, *Artocarpus integrifolia*, *Mangifera indica*, *Michelia campaca*, *Persia micrantha*, *Melia dubia*, *Terminalia chebula*, *Terminalia bellerica*, *Myristica dactuloides* and several medicinal plants.

## **Subsistence agriculture, Food habits, Modernisation**

More than 50 % of the geographical area is under agriculture. Major portion of the agricultural lands is managed under rainfed conditions. Generally the mixed cropping have the following crops (Table 2). The seeds of all these crops are sown together. Thinai is harvested first followed by mustard, ragi, maize, cucubits and avarai. The earheads of *thinai*, *ragi* and maize are removed and the stubbles are left behind which serves as a mulch and also decomposes to form manure. *Avarai*, which is harvested last is a nitrogen fixer and helps in improving the soil fertility. The tender leaves of *Amaranthus* sp are harvested and used as vegetable. The flower of *Amaranthus* sp is used for decorations during *Pongal* festival celebrated during the month of January. Crop rotation is widely practiced in Kollimalai. The rotations are as follows (Table 3).

**Table 2 - Traditional Mixed cropping pattern in kolli hills.**

<b>Crops</b>	<b>Botanical name</b>	<b>Duration (days)</b>	<b>Sequence of Harvest</b>
<i>Ragi</i>	<i>Eleusine coracana</i>	150-160	IV
<i>Thinai</i>	<i>Setaria italica</i>	100-110	II
<i>Maize</i>	<i>Zea mays</i>	125-130	III
<i>Avarai</i>	<i>Purpureus lab lab</i>	190-240	VI
<i>Cucubits</i>	<i>Cucumber spp.</i>	150	V
<i>Amaranthus</i>	<i>Amaranthus spp.</i>	60-70	I

Many fruit crops seem to have been introduced during the last six to seven decades. According to the time studies pineapple was introduced sixty years back. The villagers also felt that the area under banana has been increasing. The introduction of Tapioca and other cash crops and slow decline in the traditional crops such as minor millets and the disappearances of certain land races have bearings on the agrobiodiversity of Kollimalai.

The studies of Ehrenfels (1943) of the economy and daily life of Malayalis describe the food habits of the tribe. Since, subsistence economy was strongly prevailing, it could be assumed that the food habits reflect the agricultural pattern. Minor millets, occupied a substantial area under their cultivation and provided different varieties of grains to the people of Kolli Hills for their food. In almost all the villages, under their traditional agricultural system it was quite common to have at least three types of little millet and Italian millet with different morphological and agronomic traits. Presently not only the different types in these crops, the crops as such do not find any place in most parts of Kolli Hills.

**Table 3 - Traditinal crop rotation pattern in Kolli Hills**

<b>Type of Land</b>	<b>Crop Rotation</b>
Vayal-Low land	Paddy (One year)-Banana (Two years)
Mettunilam	Paddy-Coriander+ <i>Motchai</i> -fallow
	Paddy-coriander- <i>panivaragu</i>
	Paddy-coriander-sorghum
	Paddy- <i>Motchai</i> - <i>Panivaragu</i>
	Paddy- <i>Motchai</i> -Sorghum
	Tapioca-mixed crops (two year rotation)

There has been a sharp decline in the production and consumption of these minor millets. As a result their cultivation and eating habits have undergone changes. Their qualities both nutritional and agronomic are appreciated by the farmers yet they are marginalised and have become neglected crops. Their use is minimal today in Kolli Hills. The influence of modern agriculture and cash crops are so strong that people have been brought to a situation to compromise on the food and nutritional security of the household in favor of remunerative crops and high yielding food crops.

## **Impact of Globalisation on Malayali Livelihood**

Many studies have reported that Kollimalai is changing or has changed in social and environmental sphere from as early as 1930s. Malayali community is an agricultural community, which is moving from a subsistence agriculture to semi-commercial and commercial agriculture. Tapioca has spread to large area of agricultural land and thus the outflow of resources from Kollimalai to other parts of the region is rapidly increasing. Middlemen have emerged as a strong force and the cash crops are sold to the agro-industries in Namakkal and Salem district. Though the transition has not been uniform across the community, the impact of the transition is felt in many parts of Kollimalai. The transition from subsistence agriculture to semi-commercial and commercial agriculture represents the change in the ecosystems: from partially altered ecosystem towards artificial ecosystem. The forest area which was around more than 70% of the total geographical area before 1900 (Le Fanu, 1883) has been reduced to less than 45% of the total area.

Another important issue is the self-sufficiency. Ellen (1983: 272) argues that “ the break down of local-self sufficiency marks a key ecological transition, while human evolution and history, overall, indicate a movement towards increasingly more inclusive and complex systems”. For a long time Kollimalai people never went to outside for buying food items. Local people admits “ we used to go down to sell our ‘*Kolli sarakku*’ and to buy vital items such as salt which were not available in Kollimalai”. They added that the increasing population pressure forced people of Kollimalai to find food grains from the plains.

During 70s and 80s two major interventions made a substantial impact in the social life and ecological issues of Kollimalai. The introduction of full-fledged road and transport system and introduction of state sponsored public distribution system. This system with emphasis on sale of rice at subsidized price has a major impact in the agricultural pattern. The confidence of the regular supply of a primary cereal at a low price by the government undermined the character of the local agriculture as a food-producing subsistence system. On the other hand, the villages which are inaccessible to transport and public distribution system (PDS) still have high degree of cropping diversity.

Three to four decades back, the food consumption of Malayalis were mainly based on minor millets, pulses and vegetables. The agriculture produced food grains for household

consumption. Rice was considered as an item specifically meant for religious and cultural occasions. Thus rice was always given a higher cultural value and was treated as a symbol of higher social status. The offerings for most of the deities are still food items made up of rice. However, *samai* and *thinai* with *ragi* (called as *ariyam*) were the staple food in Kollimalai for a long time.

One of the impacts of changes in the structure of the economy is the replacement of minor millets by rice as staple food. Minor millets have substantial proteins and micronutrient, which was able to give sufficient nutrient status. When rice became the major food, it was not complimented with sufficient pulses, vegetables and other food items for balanced diet.

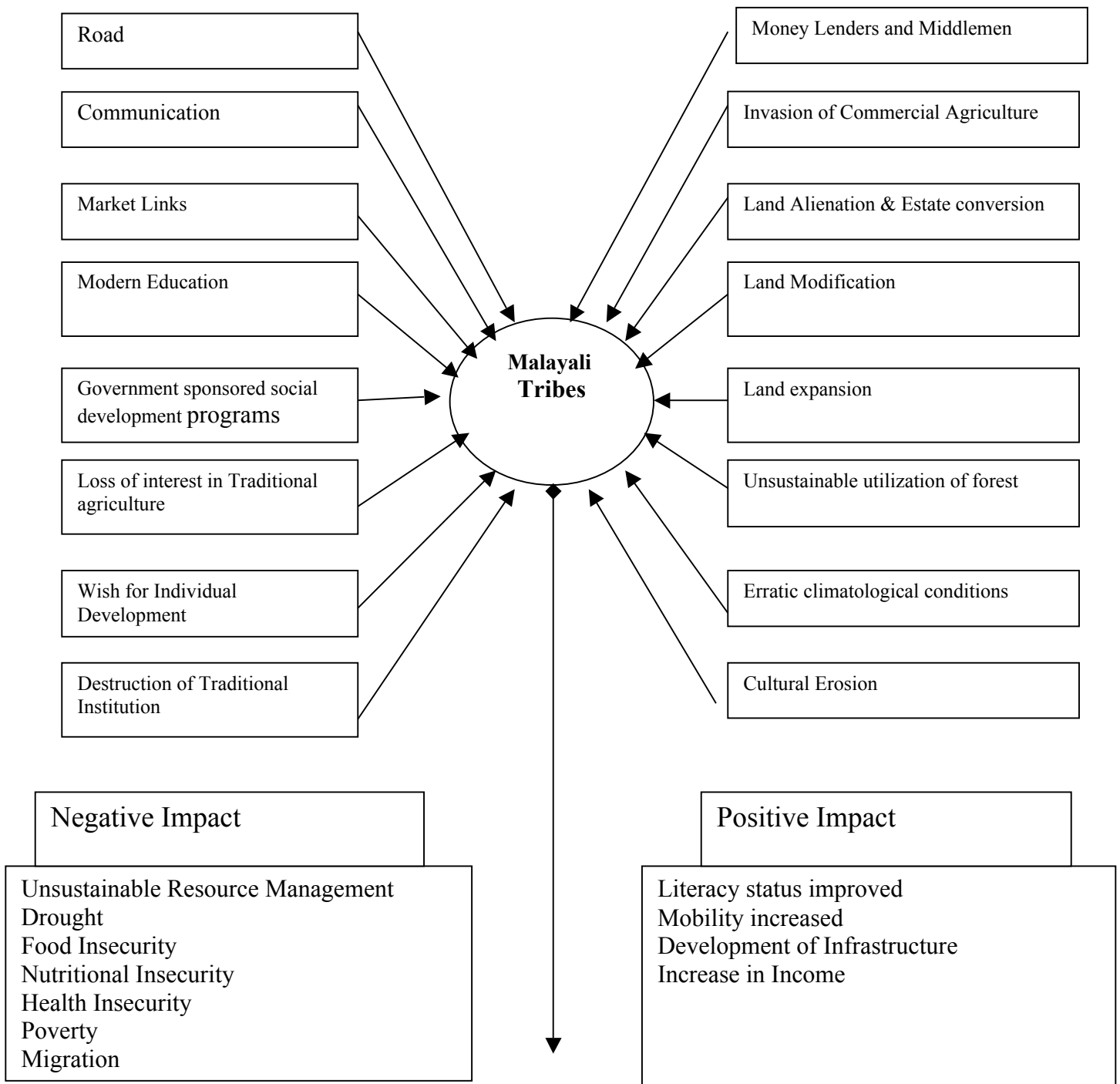
Ellen (1983) argues that “ Demands, for matter or energy, on local system by an external one may destabilize traditional organizations (including adaptive mechanisms) which have evolved over a long time span. If subsistence arrangements can no longer regulate the major articulation between the human population and the ecosystem, internal control may be lost..... The loss of self-sufficiency therefore leads to loss of the possibility of regulatory autonomy.... (1983:272).

In Kollimalai, such a trend can be discerned if one observes the pattern of agriculture. In the traditional system, the village leader defined the pattern of cropping, time of sowing, time of hunting etc. With the semi-commercial and commercial agriculture, market dictated the time of sowing, pattern of cropping etc.

As the scale of a system expands incorporating other systems, the parts of the system become more specialized in terms of economic production and social relations. New types of organizations emerge to integrate and manage the wider differentiation of its parts. The emergence of government institutions, party politics, new associations and groups including cricket teams show the emergence of new institutions. Some of the younger generations of the Malayali families have started entering into the formal sector using the provisions allowed for Scheduled Tribe by Government of India. Many of them are in Railways and are entering into new institutions such as labour unions in the formal sector.

Greater scale and specialization reduce the diversity of local system and hence the extent of flexible response. A new scheme for reservoir and the increasing mining activities for bauxite in Kollimalai are bound to create impact on biodiversity and environment. However, the community is yet to debate and respond to these issues. The standard response is that “ the outside people from plains have started destroying Kollimalai”. But this view has not been institutionally shaped and hence, the response of the people of Kollimalai have not been properly organized. However, in the agricultural sector, certain trends are visible. People who have been experiencing the vagaries of semi-commercial and commercial agriculture, have started building self-sufficiency concept in their semi-commercial agriculture, by growing food grains and minor millets for their household consumption.

## Driving forces and Process of transitions in Malayali Tribes of Kolli Hills



Dynamics of increasingly open systems are complex and can not be subsumed under closed tribal cultural pattern. As the study argues, Kollimalai is not a closed-tribal system. It is an agricultural system which is moving from subsistence agriculture to semi-commercial and commercial agriculture. It is a society marked by the breakdown of local self-sufficiency and



moving towards increasingly more inclusive and complex systems. It is a system that has used conservation for livelihood security and survival strategy. With the emergence of new avenues for livelihood security, will conservation be a relevant strategy for the community?. In the path of sustainable development, conservation plays a major role and creating an economic stake in conservation could be viewed as a major strategy for sustainable development.

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