Chapter II

TIMBER IN KERALA - AN OVERVIEW

There is no doubt that pressure on forest has increased considerably in the recent past which has resulted in gradual decrease of forest area. A number of afforestation programmes have been taken in many areas for the development of the forests and new trees have been planted. There is no doubt that more attention is given to develop trees having commercial value as the importance of forests as revenue earner has increasingly been emphasized. It has been noted that most of the trees having, great commercial value, which are planted under the various afforestation programmes, are of little use to the forest-dwellers or villages. In fact such varieties of trees are planted which are often required for industries mostly located far off from the forests.

Thus, this type of development of forest cannot really help the tribals and forest dwellers either in the context of using the forest products or through generating new employment opportunities locally. The situation has become more acute and critical where new plants of this kind are systematically planted replacing the earlier varieties which were required or utilized by the tribals including the forest dwellers in a number of ways to meet their various demands. Thus the new afforestation programme has not only affected and disturbed the existing tribal economy, it cannot even provide any alternative. This type of forest policy in the context of afforestation programme
has already witnessed a number of tribal unrests and conflicts in different parts of India particularly in the chotta nagar region. There are many instances where the tribals in a group have uprooted such new commercial trees planted earlier by the forest department.

To stop rapid deforestation social forestry programs have been suggested. Social forestry "involves the people at all levels with raising forests as their own assets for their own use". This is to "provide forest goods and services in the rural areas where these are needed the most. The objective is relished by establishing multipurpose tree plantations that supply fuel and small timber to meet the basic requirements of rural communities, that provide food, fodder, shade and environmental stability and that generate income and employment by providing jobs and raw materials for cottage industries and other minor forest produce". Thus the forest can be developed as a support to the rural economy and to supply raw materials for the forest-based industries.

In many tribal areas where villagers are intimately connected with forest, it has been noted that they are quite aware of the utility and usefulness of various trees in the forests and they have definite views about the trees which should be planted under afforestation programs. Sometimes this has developed through their close association with forest and keen observation of the ecology. Thus unfortunately quite often the forest dweller's are not at all aware about the utility and usefulness of the trees planted under afforestation programs. It was reported that they were not informed about the usefulness of the new varieties. Due to this communication gap, they do
not use, for example, a variety of fuel wood, which is a much better fuel wood than those traditionally used by the villager’s and thus their awareness could have avoided cutting trees to a certain extent. This whole development process indicates lack of social perspective in development and planning.

The tribals particularly forest-dwellers depend on forest for their existence. Though a waste majority of the tribals are agriculturists, the most interesting aspects of tribal economy is that they do not depend on cultivation exclusively. Most of them depend on other sources as well and forest is one of the most important sources. A large number of tribal communities depend on forest, collection of forest products or hunting as their occupations. Even in case of those tribal communities who depend on handicrafts, the raw materials are mostly collected from the forests and thus they depend on forest indirectly. Their dependence on forest as a source of fuel is very conspicuous. There is no doubt that with the decrease of forest area it has become extremely difficult for the villagers to collect the fuel wood. Collection of fuel is practically a day’s work, which is usually done by the females. Oil and electricity are not likely to meet the increasing demands particularly in the rural areas of the developing countries including India to any appreciable extent. Naturally, the dependence particularly on firewood and consequently on forest will be there and is likely to increase in the future. Besides being the main sources of fuel for cooking, the forest is also one of the main earning sources where the collected fuel wood is sold in markets.
During occasional crop failures particularly due to inadequate rain, which is quite frequent, the nature’s dependence on forest is obviously more intense. This no doubt, can be responsible for deforestation to a limited extent, but even the total restriction on use of forest cannot be favored, advocated and supported for the simple reason that this happens to be one and only source of income. Naturally, unless and until alternative sources or avenues are opened, this type of strategy can have number of evil effects. On the other hand if the tribals appreciate that by not cutting the trees, they would gain in future, they would always try to preserve it. In a number of cases where tassar production has been introduced under social forestry programme, this has definitely helped to preserve the forest areas.

Collection of honey and other minor forest produces are important sources of income. But here again they are always very ill paid and the market is practically controlled by the businessman. Collection of kind leaves is an important source. In Orissa the government controls it. But elsewhere, where it is under private control, after a full day’s work covering 8-10 miles, one earns less than a rupee. The forest department and the businessman collect the minor forest products through the local forest-dwellers and both are equally exploiting forest. Where there is no market, the private wholesale dealers go to the villages to collect the various forest products at very low prices and they afterwards sell them with huge margin.
There is no doubt that the forest area is decreasing. The tribals, particularly the forest dwellers are often held responsible for this and it has been suggested that rigid restrictions should be imposed on the use and exploitation of the forest resources in the national interest and to reserve echo system. However it seems that the concept of national interest has been applied in a narrow sense. It has been pointed out that "in a welfare state, there cannot be a basic contradiction between local interest and national interest. In the implementation of forest policy, the national interest reminded confined to segmenting revenue earnings from the forests. Whenever the interest of the local people or ecological consideration came in the way, they were ignored on the pretext of border national interest. Attempts to integrate local interests with broader national interests either by the then forest department or by other Government development agencies are conspicuous by their absence.

A number of scholars have shown that the echo system was better preserved and deforestation was not so conspicuous when they were under the control of the tribals and forest-dwellers. But ever since the forest were exploited commercially, it has greatly disturbed the ecosystem and resulted in gradual deforestation. Even through the tribals including the forest-dwellers cut trees, their requirements are so limited that it cannot adversely affect the forest ecology to any great extent, besides, among many of these communities they have their own traditional
customs and regulations for which they do not cut certain types of trees, try to preserve forest
trees and again grow plants. It is only when they cut trees and sell it in the outside market to earn,
and if this process continues for a long period and followed by a large number of persons, it can
adversely affect the forest ecology. But then again, as their very existence depends on this type of
economy, it is better to explore alternative employment instead of rigidly restricting the use of
forest and forest products by the forest-dwellers on the contrary, in case of commercial exploitation,
since cutting of trees are often mechanically used and they are transported outside not manually
and no traditional value, normal and customs are attached to them, they pose greater threat to the
forests.

Another very related matter may be mentioned here. If only one variety of tree is planted
under afforestation programme for its commercial value in place of a variety of trees present
earlier, it can adversely affect the ecology as it might not be possible for it to meet the various
demands of nature. For example, an ecologist pointed out that if only eucalyptus trees are grown,
the very branching nature of that tree prevents birds from making nest in that type of tree. Such
a situation can have a number of consequences affecting ecological balance. The wild animals,
particularly the elephants are frequently raiding the village damaging and destroying the standing
crops and village properties. The present forest policy and afforestation programmes are indirectly
responsible for this. It is reported that due to commercial exploitation, forest have been reduced
considerably and in the afforestation programmes those varieties of trees are mostly planted
which the animals, particularly the elephants do not like to eat. Naturally, due to the scarcity of
food, the elephants are forced to move from place in search of food and often raid the villagers
causing great damage to the crops and village properties.

Thus the forest policy and afforestation programme, if not properly made in a balanced
way, considering the various demands, it would not only affect the ecology, but may be a positive
threat to the life and property of the persons living in and around forests. Such a forest policy
might have been followed during colonial period, but it is surprising and unfortunate that such a
policy is often followed only out of commercial interest even after Independence neglecting the
interest of a large number of persons.

The strategy of forest development has been aiming to:

- to link up forest resources with forest-based industries, and

- to develop forestry as a support to rural economy.

The British realised the commercial value of forests and restricted the rights of the forest-
dwellers, extended administrative resulted into is increasing commercial exploitation. The various
measures taken after independence are also the extensions of this policy.

Forest and forest resources were earlier enjoyed and controlled by the forest-dwellers
and the tribals. Now it is largely controlled by the state. It is unlikely that the Forest policy of the government can be influenced by the powerful industrial and commercial interests and sometimes at the cost of poor tribals including the forest-dwellers.

This is particularly important even in the context of afforestation programmes because in a number of studies it has been noted that social forestry programmes are often funded by the international agencies notably by the world Bank. The policies, largely influenced by the fund-giving authorities, remain silent on the social relations, folk after the interest of the developed countries or industries and often help in widening the disparities in rural areas. Even in the context of commercial interest it is examined only on a very short term basis, on the immediate gain or loss achieved, but the future consequences and loss of resources is not seriously studied always.

In many regions, large areas have become deforested to meet the demands of the powerful industrial interests. In many afforestation programmes for commercial interest and on the pretext of national interest, those varieties of trees are planted which are of little use to the local population and are mostly required for the industries located far away from the forests. Thus this type of afforestation programme can neither generate employment opportunities locally nor help the local population to meet some of the daily necessities. The commercial aspect, should not be totally overlooked but this should not be done at the cost of poor forest-dwellers as the tribal,
the economy largely depends on forests. A harmony is to be made between the two interests.

Information on timber production is as incomplete as on its demand. Timber is normally obtained from Government forests, community and private forests, trees growing on farm lands and plantations raised under social forestry programmes. Timber extracted from Government forests is reported in the national statistics, but timber extracted from the remaining sources does not always get included in statistics of timber production. Trees growing on farm lands and other privately owned areas constitute an important source of timber. But wood harvested from them is not included in the country’s production figures. Estimates of timber production in the country are, therefore, grossly under estimated. In case of out-turn from Government forests, the unit of reporting is not uniform. Timber extracted is, in some case, reported in round wood and, in others as sawn wood. Statistics of out-turn of timber, thus, suffer from many infirmities. There is a significant relation between forestry and rural development as about 80% of our people live in rural areas. There is no doubt that development of forest can go a long way in raising land of living of the poor and vulnerable sections of the country in various ways. Forests play an important role in the life and economy of forest folk who are completely dependent on them.

Indian forests are great national assets India has a total geographical area of 22,87,263 sq. km. covered with forests which accounts for 19.50% of the total area. The forests of India are the sources of a variety of timber with different technical properties which sub serve the requirements of the
building industry of the Defence and Communication as well as of an expanding range. The geographical area and actual forest cover of each state of India is given in the table below.

**Table : 2.1**

**State wise areas of Forest in India** (as per forest survey of India 1993)

<table>
<thead>
<tr>
<th>No.</th>
<th>State / Union Territory</th>
<th>Geographical Area(sq.km.)</th>
<th>Forest Cover (sq.km.)</th>
<th>% Area Covered</th>
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<tr>
<td>1.</td>
<td>Andrapradesh</td>
<td>275068.00</td>
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<td>Arunachal Pradesh</td>
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<td>5.</td>
<td>Goa, Daman, Due</td>
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<td>12500.00</td>
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<td>6.</td>
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<td>Haryana</td>
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<td>9.</td>
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<td>20433.00</td>
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<td>28.</td>
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<td>29.</td>
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<td>30.</td>
<td>Lakshadweep</td>
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<td>-</td>
<td>-</td>
</tr>
<tr>
<td>31.</td>
<td>Pondichery</td>
<td>493.00</td>
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Source: From the Forest Records
In Indian subcontinent the term forest does not merely mean an area covered with trees but it carries the impression of an entity that is a sum total of ecological, edaphic and biological parameters. According to the cultural traits of the country, forests hold a very important place in the life and philosophy of the people apart from the material gains that it brings about continuously ever since the birth of civilization.

The vast expanse of the country spread over region from temperate to sub-tropical zones coupled with wide varieties of relief, temperature and rainfall the country provides ideal natural conditions for the growth of forests that would represent the range and variety of forests species that could rarely be found in any single country of the world.

A broad review of the natural growth of forests will reveal the astounding range of varieties that exist. Thus tropical wet evergreen forests occur in the western Ghats, and the hilly areas of Assam and North-easter region. These areas are those having the highest rainfall in the country. The rainfall regimes of 1000-2500 mm per annum hold Tropical! Semi-evergreen varieties. Tropical moist deciduous type finds their natural habitat in the region having annual rainfall of 1250 mm to 1900 mm the next below rainfall regime; 750-2250 mm holds the tropical Dry deciduous type of forests. Area having lesser rainfall has developed tropical forests ultimately leading to a practical absence of vegetation in the arid and desertic tracts. A very different variety of forests exist in the
different zones of the great Himalaya holds the subtropical pine forests. Higher refilling the Eastern Himalayas brings about a belt of wet temperate forests immediately above that. These are followed northwards or in other words in the higher ranges by moist temperate and dry temperate forests ultimately leading to the Alpine forests in the highest ranges.

The two broad types that emerge from the above description are those of tropical/sub-tropical and the Temperate. Again broadly speaking the two groups on general terms could be grouped into broad-leaved or non-coniferous and narrow leaved or coniferous. Majority of the species that grow in the broad-leaved non-coniferous zone are deciduous, whereas the coniferous species are predominantly evergreen.

By composition India’s forests are predominantly non-coniferous, coniferous occur only on the temperate mountain slopes and valleys of the Himalayas and higher elevation of hills occurring in central India. They occupy an estimated area of 2.6 million hectares, i.e. only about 3.3 percent of the total forest area. Thus, as per administrative divisions, they exist in the states of Jammu and Kashmir, Punjab, Uttarpradesh, Himachal Pradesh and to a smaller extent in Assam, west Bengal and Manipur. Important Indian conifer species are chirpine, Deodar khasi pine, spruce and fir.

Broad-leaved forests spread over the plains, hills and valleys of India occupied, as per
estimates of 1961, nearly 75.8 million hectares forming 96.7 percent of the total forest area. A very large number of species grow naturally on them of which only a few are of value as timber. The most important timber species in terms of value and abundance are teak, sal, laurel, gurjan, haldu, and sesame etc. Some timbers like Rosewood, paly, Andaman pandank, and Sandal are species with very special qualities and thus command a high value.

Teak, considered to be the best quality timber for making furniture and building construction, predominated as per 1961 estimates in the states of Madhya Pradesh, Gujarat, Maharashtra, Kerala, Andhra Pradesh, Karnataka, Rajasthan. The total area including small areas in other states works out to 82,713 sq.km. Sal, the eminent quality timber, valued for making poles for house construction and also for its strength, grows predominately in Madhya Pradesh 37,682 sq.km, Bihar 33,504 sq.km, Orissa 28733 sq.km, U.P 5716 sq.km, West Bengal 5,232 sq.km and other’s.

Miscellaneous forests occupy about 561,900 sq.km in India. Important species to mention a few are bamboo extensively used for fuel wood. Some species of hard and semi soft varieties of timber are also extensively used as a raw material in the plywood match and contain the sandal tree which is perhaps the most valuable wood and is a big revenue earner. The Sundari tree of the sundarbans in the mangrove forests of the Ganga delta of west Bengal or the extra hard wood
timber used mostly as railway sleepers of the Andaman and Nicobar Islands deserve special mention.

The actual area extend forest in the country has become a very controversial issue. The national forest policy enunciated in May - 1952 lays down that India as a whole should aim at maintaining 1/3" of its land under forests the proposition being 60% for hilly regions and 20% in the plains. According to the estimates made in 1961 by the department of forests calculated resemble on the basis of detail information available from then source of the area under forests was 783,962 sq.km constituting nearly 24% of the geographical area. As per that estimate Madhya Pradesh had the largest area under forests with 182,468 sq.km, while west Bengal with its 12,246 sq.km. of forests had the least area under forest. Assam including Arunachal Pradesh had nearly 46% of its area under forests, while Punjab with 1 1.7% of its surface under forest.

Although the relative position of the states in consideration of area under forests or economic returns out of the forests remain more or less the same even today, it is a common knowledge and experience that the forest cover has been considerably depleted in terms of area and quality.

The forestry commission, Minister of Agriculture, estimated in 1979-80, a total of Indian coverage of forests as 736,685 sq.km, the official statistics of the forest administration quoted approximately an area of 748,000 sq.km, under forest in 1980.
Forests play a very important role in the life and economy of the country. Forest vegetation and its accompanying soil organism make up as much as 90 percent of the total biomass on land. Due to deforestation, the stability of many ecological sub-systems have been greatly disturbed. Forest cover in the catchment areas of the rivers, control soil erosion and recurrence of floods. Once the forest cover is damaged, severe soil erosion takes place disturbing the entire ecosystem, choking the dams and reservoirs with silt load and thereby promote recurrence of floods. Floods which affect about 90 lakh hectares annually in the country, cause damage to crops, properties and public utilities amounting to over Rs. 4 billion per year. Forest cover is effective in checking the spread of the desert by putting up a barrier.

Trees bring relief to the population by keeping the temperature under control, ensures adequate and stable rainfall year after year, maintains the depth of the water table, checks soil erosion, purifies the air and thereby promote a healthy, sylvan and enjoyable environment.

Forests have a direct, intimate and profound relationship with the economy of the Indian people. This is one of the natural wealth which is shared by the rich and the poor alike and is virtually indispensable. To the village folk, the tribals and their domestic animals, forests are the main sources of sustenance.

In India the life and economy of the tribal people are intimately connected with forests. A
major portion of the tribal population actually live inside the forests and make living out of the products of the forests. Some of the tribals, particularly those living in North Eastern states, Madhya Pradesh and Orissa make their living by practising shifting cultivation, practice is estimated to be around 10 million hectares, a sizeable portion of the total forest area. Shifting cultivation degrades the forest to some extent but whether this is wasteful and totally avoidable is a debatable issue, because the very existence of the tribals engaged in such practices is dependent on that.

The survival of a considerable percentage of tribal is dependent on minor forest produce. mahana flowers, sal seeds, sal and tender leaves, fruits, resins lac, bamboo etc is practically anything other than firewood and timber. Studies in Orissa, Madhya Pradesh, Bihar and Himachal Pradesh indicated that once 80% of the forest dweller collect 25% to 50% of their food from the forests.

During the lean months, wild fruits, tubers, leaves, animals and birds are their only food for survival. In fact, for the tribal minor forest produce is the major support for his subsistence. A study in Baster District of Madhya Pradesh has shown that out of the total annual income of Rs. 1750 a family earns as much as Rs. 1500 out of minor forest produce.

Constant depletion of forest and consequent low yield of minor forest produce has com-
pelled many of the tribals to fall back on legal felling of fuel wood and sell regularly head-loads of such wood for cash return. In the absence of any attractive source of earning a livelihood it would be hard to think of presenting people from the right for survival. A forest policy should therefore, have an inbuilt mechanism for providing adequate means for providing graceful employment.

A policy and programme that as per to tackle such major problems as land lessness rural employment and ecological, regeneration at the same time are indeed very tricky and complex. Political pressure groups and the vested interesting groups of wealthy farmers, industrialists and forests contractors exert considerable influence in moulding corrupting and frustrating policies of the government agencies frantically struggling to find a solution to the impending danger of riots for fuel. forecasted by source Economic planners by the turn of the century. The obvious measures to meet the challenge are

- to conserve forest produce as far as possible. Initiate legal measures, social awareness and effective machinery for stopping destruction of forest.

- minimise encroachment of forest in the name of development, economy and habitations.

- regeneration of forests through fresh plantations of quick growing species that would primarily satisfy the fuel and fodder needs of the rural and tribal population. In this effort involve the people and encourage them to participate through incentive like Community Forests, Social
Forestry, Farm Forestry and Fuel farming, make concentrated efforts through publicity and persuasion to connect the present attitude of exploitation to harvesting of forests from the forests should aim at meeting the demands as closely as possible.

- generate alternative source of energy both in the rural and urban sectors to relieve pressure on biomass sources.

- develop alternative raw materials for industries dependent on forest products. Substitute new packaging like cardboard, plastic etc, to replace timber planks.

- increase the productivity of our existing forests which is very low by all standards.

The measures outlined above are being implemented through various schemes adopted by the government at the regional and national levels but now far they would be effective in meeting the needs of the common man is yet very uncertain. New plantations of eucalyptus are: yielding prosperity for the rich farmers and the industries, but the poor is deprived of his share of fuel and fodder that such plantations deny to him.

An estimated 50 million hectares of waste land and degraded forests of varying qualities are available in the country which could be utilized for in every village which could provide land for such farmers. The community is to be motivated to get involved in the scheme. Voluntary organizations have come up in some states to take up the task, some have met with encouraging
The 'Tree Patta' scheme initiated by the government is being tried out in various states. Under that scheme vacant land is given on long term lease to landless families or their co-operatives for raising of fuel plantations. Subsidies in cash and kind are provided to operate the schemes. But in most cases the scheme could not attain the desired objective. The landless with absolutely no resources of his own has any imagination about the potentiality of a tree crop providing economic returns. Secondly, income from afforestation can start accruing only after five to seven years. It is impossible for poor people to find other resources to sustain themselves for this living period. He, therefore, tends to try and produce some poor crops on the land, or builds a hut and thus defeats the whole purpose. Then there are middlemen to corner his land.

As an alternative to this arrangement some experts has suggested that large chunks of wasteland or degraded forest land be allotted to forest-based industrial houses for development of plantation. This is done with the expectation that the industrial house would provide employment to the local landless for plantations and their maintenance. But this pious thinking on the part of the planners hardly prove realistic since labour constitutes the major cost of afforestation, industries will prefer capital, intensive technologies for tree farming and there by reduce potential for employment of the generation. Moreover the industries interested in enjoying exclusive rights once the land will create resentment among the local poor who are used to deserve some return
in the form of fuel and fodder, however meagre from wasteland given over to the industry.

The classification of forest and forest ecosystem is a primary requirement for managing forest resources. India has a vast stretch of forests covering about 76.52 million grss recovered forest area. In tenure of legal status forest is classified into reserved, protected and unclassified which constitute about 54.44,29.18 and 16.38% of the total recorded area respectively. Since independence, a large portion of forested area was diverted to various non-forestry activities at an annual rate of 0.15 million. After the enactment of Forest Conservation Act the forest diversions have been considerably reduced and the present rate of diversion is 16000ha annually.

The forest resources of the country are under great pressure owing to the increased demands from human and annual population resulting in degradation of our forest eco-system. This has led to poor productivity and re-generative capacity. Hence monitoring of our forest resources is of great importance.

Estimates of timber requirements\demand vary widely. One of the earliest calculation and requirement. Secondly, the discussion on quantification of demand should take into account on the the prevailing or anticipated price. The present estimation process makes no reference to prices. Under normal market conditions where price is not controlled, there should not be any difference between demand and supply as the price level adjusts itself to ensure that whatever is
demanded is supplied at the price which covers the full cost of production. The situation where a difference exists between supply and demand will exist generally when the price is controlled by Government or depressed due to gathering, such that the supply takes place at a price which does not cover the cost of replacement. The difference may also be because of wide time lags between particular price signals and the adjustment process (production, imports and even out of regional differences) to spend itself out to reach a new equilibrium situation. However, each statical (historical) price may be taken as an equilibrium price, which has come after the adjustment process of dynamic economy may exhibit continuing or persistent gaps if the then annual supply and demand of wood were evenly matched, both being equal to about 8 million cubic meters of industrial wood and 85 million cubic meters of fuel wood. The demand estimates for 1975 were made separately for each consuming sector, such as the construction, industry, mining, transport and communication, wood working industry, packaging pulp and paper, matches and sport industry etc. Factors like increase in population, national income, urbanisation and use of timber substitutes were taken in to account.

The demand for timber can be considered under two main heads; of the rural sector for house construction and agricultural implements, and urban demand for industry etc. the rural demand is influenced by the size of population, level of development, availability and information,
price rights and concessions, climate and general economic conditions. Increase in population improvements in economic conditions result in a higher demand for timber. Availability of forest resources and rights and concessions of people living a adjacent to forest areas also determine per-capita requirements. In areas where forests are still in abundance and villages have rights and concessions for timber extraction per capita consumption is higher than in areas away from forests and where villagers are requested to purchase timber of market prices. Timber requirements for house construction in temperate areas is higher than in tropical areas.

The emphasis on sound uses of forest to meet the needs of rural population will ultimately lead to protection and development of forests. It will be a solution to the twin problems of environmental decay and mass poverty. Today rural people have no interest in the maintenance of forests. Forests can never be protected with forest guards and policeman. They will be protected only when considerations dictating their protection coincide with the interest of the poor. Rural needs for fuel, fodder, fertiliser, fibre, fruit and timber for housing must not only be recognised as basic human needs but also be provided for in planning forest development and management.

Commercial and Industrial demand for forests is increasing day by day. No forest policy can reduce such demands. This demand is mainly confined to Teak, pine, eucalyptus and bamboo. Teak is now an item of luxury consumption. Official efforts to clear fell other trees to plant teak
trees have met stiff resistance in Bihar. Bamboo is mainly used in paper industry. What was once considered an undesirable weed is once again in great demand. But while paper mills are provided Bamboos at concessional rates, Bamboo is sold to basket-makers at high prices. Indiscriminate cutting of bamboo thus resulted in large scale depletion of bamboo forests. Eucalyptus is mainly used in polyfibre industries. Pine is used to extract resin for industrial uses. In some areas in existing forest these species are grown. However, large strips of land are lying bare all over the country. The forest department is trying to allot some of these plots for social forestry. The planting and protection of these trees is not an easy task and would involve considerable expenditure for levelling the land, fencing the plot, watering the plants in the initial stages and protecting the trees from animals.

Some of these plots may be allotted to industries for afforestation. The industries can easily meet the capital and recurring costs. Some of the plots may also be assigned to private individuals for afforestation. Some individuals in Gujarat have achieved wonderful results in this field. The general experience is that private individuals and commercial organisations can yield better results in afforestation. Farmers should also be encouraged to grow trees or farm boundaries. Forest based industries should mainly meet their needs of raw material from the forests developed by private individuals. Commercial organisations and the forest department managed production forests.
They will check the present rapid depletion of forests.

The concept of social forestry developed by the forest department needs to be radically changed. Social forestry is defined by the forest department as growing of trees or lands not needed by the forest department. Most of these lands are uncultivable and would require large capital expenses even for the growing of trees. The department of facts that tree grown on these lands would meet the needs of rural population for fuel and fodder. Subsidies are also offered to undertake tree growing projects under social forestry schemes which can never meet the needs of the rural population for fodder firewood and other minor forest produce. The Government must give up its narrow approach. Social forestry must be defined as the establishment of fuel-food-fodder production systems on uncultivable land within and outside the jurisdiction of forest department. Such a policy will serve two purposes. It will check the depletion of forests by providing alternative source of livelihood to persons who presently depend on forest exploitation. It will also improve the standard of living if the villagers try increasing production on uncultivated and unforested lands. Social forestry is however not an easy task.

There seems to be no alternative to government ownership over protection forests and to a large extent over production and social forests. However to ensure the satisfaction of local needs the ownership of village forests needs to be specified. The ownership of the produce should also be ensured before participating in government afforestation schemes or forest farming
schemes.

There are various types of ownership, like private ownership, Government ownership etc. The village forests should be under community ownership for at least 20 years. Even if community management has failed in some cases it is necessary to develop an alternative to bureaucratic mismanagement. Hence efforts must be made to revive the traditional Van Panchayath. Management procedures should be laid down and restrictions placed on sale and purchase of forest lands.

A number of experiments in farm forestry have proved successful. Two types of farm forestry is encouraged. i) Exclusive farm forestry that is growing only the trees on a piece of land and ii) Mixed farm forestry that is growing tree interspread with other crops. Both wood meet a part of industrial and commercial needs and a part of domestic needs and would also increase the land under tree cover. Some piece of land in urban areas can also be developed as farm forests to improve environmental conditions.

Millions of forest dwellers mainly belonging to poor sections of the society subsist on the consumption and sale of minor forest produce. Forests must be developed in such a way that will increase the production of minor forest produce. While regulations should be laid down for the collection and sale of minor forest produce, the system of auctions for the purchases of these products must be given up. The state official agencies like Tribal Development Corporation and
Forests Development Corporations may be given the monopoly rights to purchase certain important items of minor forest produce subject to the condition that these agents will not appoint merchants as their agents for the purchase of these products and will directly purchase them from those who collect these and that the prices for these products would be fixed reasonably and declared in advance before the gathering season.

The establishment of cooperatives to collect and process minor forest produce in the areas adjoining the forests will be encouraged.

Every effort would be made to encourage the growing of trees in the agricultural lands particularly on boundaries and also on the road and canal sides. Agriculturists would be supplied seeds, saplings and knowhow to grow trees on agricultural lands without affecting their usual cultivation.

Effort will be made to afford protection to the forest animals particularly the rare and declining species. However efforts will be made to see that the establishment of wildlife sanctuaries and large scale national parks also not deprive the local population of their means of livelihood grazing. A time has come to restrict the grazing of animals in the forest areas particularly in the state forest. Every effort will be made to popularise stall feeding and the cultivation of nutritious grasses in the Family and Village forests.

No grazing will be allowed in National Forest and State forests. However fodder will be
supplied to the local population from these forests at concessional rates.

It is necessary to check the practise of shifting cultivation in certain areas to save damage to the forests. This can be done only by giving cultivable lands to the shifting cultivators and to provide them with necessary inputs in the initial stages. Cultivable lands where there are no trees but which are shown in the records as forest lands will be handed over to the shifting cultivators.

It will be necessary to change the entire move of forest administration in order to remove its paramilitary authoritarian and regulatory nature and to make it people oriented advisory and participatory like the departments of agriculture in different states. The forest department and officials will be no more the sole decision makers in the development of conservation and exploitation of forests. They will act mainly as advisors in this process. The forest development corporation will make their plans of exploitation available to the public. The major aim to collect maximum revenue from forests will be changed and the aim of ecological conservation meeting the basic needs of the people will be substituted in its place. The forest Administration will be decentralized and made responsible to the local people.

A number of activists working among the forest dwellers and tribal communities have been thinking about the re-orientation of the forest policy for the conservation and development of the forests with the major objectives of maintaining an ecological balance especially in the sensitive
areas in the Himalaya region and meeting the basis needs of the people like food, fuel fodder etc. These activities came together in 1981 and 1982 to oppose the unbridled commercialization of the forests with under restriction on the existing rights of the forest dwellers adopted in Draft Forest Bill 1980. The awakening initiated by the discussion on the Draft Forest Bill resulted in the shelving of the Bill. A number of activists thought of this as only a partial success and continued their research in this prevalent Forest policy and its implementation. After 1980 there was a new awareness about the need for maintaining ecological balance in this re-organization of departments at the center, the Forest Development and Wastelands Development Board with an ambitious plan to bring about 50 million acres of land under tree cover every year.

Large-scale deforestation has brought India on the brink of ecological collapse. Heavy damages caused by floods have become annual features. Benefits from the big irrigation dams on which corers of rupees have been spent are being nullified due to heavy silting scarcity of fuel wood has reached an alarming proportion and the work load on children and women collecting fuel wood for domestic consumption and sale has increased tremendously. There has been a steep fall in the supply of essential forest product.

On the other hand the demand for forest produce has increased considerably. Consumption of paper is increasing everyday. Man made fibre also need a large quantity of wood for pulp,
ever rising price of kerosene are compelling the rural and urban poor to use charcoal and wood as fuel.

Efforts are being made to bridge the ever widening gap between decreasing supply and increasing demand by initiating social forestry projects, restricting forest dwellers, raising paramilitary forces to protect the forest and tightening the government control over public and private forests.

It must be realized that the above-mentioned efforts will not succeed unless there is a radical change in the forest and its implementation. What we need in a genuine social forest policy that increases peoples participation in the development and conservation of forests. We need a people’s movement to develop and conserve forest resources.

Such a popular participation requires a new pro-people forest policy, aimed at meeting the basic needs of people and decentralized forest management coupled with a new consciousness among the mass of the people. The draft policy statement that follows is a result of common thinking of a group of activists working among the forest dwelling communities and concerned with the development and conservation of forests by the people and for the people.

Before the advent of the British rules in India, there was only customary regulation of people’s rights over forestlands and forest produce. This did not pose any problem due to the
existence of vast traits of forest or forests and a small population. Custom prohibited the cutting
of certain trees like Banyan and Pipal. Certain forests like ‘Devraya’ (God’s groves) were regarded
as sacred and protected forests and the people were supposed to use only the fallen leaves and
fruits and not to cut any tree there in. This helped the gamut of living organisms.

The British realized the commercial value of the forests and began to use them to augment
revenue and in the process tried to regulate the people right over them. All this was done in the
name of conservation of forests. A memorandum providing guidelines restricting the rights Of the
forest dwellers to conserve the forests was issued in August 1855 and was later modified in
1894. It said: ‘The soul object with which state forests are administered is the public benefit. In
some cases the public is the whole body of the tax payers, in others the people on the track
within which the forest is situated: but in almost all cases in the constitution and preservation of a
forest involve in greater or lesser degrees, the regulation of the rights and restriction of privileges
of users in the forest area which may have previously been enjoyed by the neighborhood. These
regulations and restrictions are justified only when the advantage to be gained by great and the
cardinal principle to be observed is that the rights and privileges of individuals must be limited
otherwise than for their own benefit only in such degree as is absolutely necessary to secures the
advantage”. This policy was never implemented in full. Successive forest acts put more and
more restrictions on people’s rights over forests.

India has federal structure with division of responsibilities between the centre and the states. Forestry is a state responsibilities subject to certain controls from the centre. In Kerala as in the rest of India the authority function i.e. enforcement of rules and regulations and enterprise function i.e. management of the forest resources are vested in one agency, the public forest administration. The history of any land or forest is the history of men who occupied it, exploited it and derived benefits out of it. Co relating the history of forest of Kerala to that of its people would therefore be interesting.

The period prior to the arrival of Vasco -De- Gama in 1498 in the court of Zamorin at Kozhikode and establishment of trade rights and Portuguese colonies on the west coast is considered as the ancient or pre-European invasion period in forest administration and management. During this periods Egyptians, Phoenicians, Chinese and Babylonians had trade relations with Malabar coast. They were lured by the natural wealth chiefly spices, teak, ivory etc. of Malabar.

During this period the present day Kerala was divided into a large number of chiefdoms each under the control of a chieftain. Population compared to the present was very small. People lived mainly on agriculture and hunting. Land not required for house building or agriculture was left as forests and these were owned by the local rulers and chieftan. Large extends of forests
were with various temple administrations also. The forests were mainly used as hunting grounds, for capturing elephants and for shifting cultivations. Costly timbers like teak, rose wood, ebony and sandal wood were sometimes cut for the use of the local rulers. Other timbers were considered cheap and useless. Local people were also allowed to cut timber for their domestic use and to hunt in forest. Since every household had lot of timber trees local inhabitants seldom depended on forests for timber. But they did clear forest for cultivation purposes.

Kuatilya's Arthasasthra described among other things, the forest administration of ancient India, which was applicable to Kerala also. Some forest areas were kept apart solely for royal purposes like hunting by king, cutting timber for the purpose of royalty or for common purpose etc. Some others are maintained as holy forest. In other forests local people could hunt, cut trees and cultivate subject to the restriction and levies imposed by the ruler. Even in the forests set apart for royalty, certain rules have to be followed. Hunting of animals and capturing elephants were strictly controlled. Certain areas and seasons were closed for hunting.

As far as the local community was concerned, shifting cultivation was one of the important uses of forests. Patches of forests were cut down, burned and cultivated for 2 or 3 years continuously and then abandoned for the next 40 or 50 years or more for recouping. Non timber forest produces were exploited from forests. This included honey and wax, ivory medicinal plants and spice. Several of these products found their market in Arabian countries.
The periods from European invasion to 1947 was a period of aggressive production forestry. It was during this period that large scale commercial exploitation of forests and use of forests for non forestry purposes commenced. Industrial revolution, agricultural expansion and two world war brought in major changes in forestry sector.

Vasco - De - Gama Portuguese Naval Captain landed at Kappad near Kozhikode along with a small group of sailors. He was attracted by the rich natural resources of west coast and wanted to trade in these products directly with the princely states instead of through Arabs. He entered into trade agreement with the ruler of Kozhikode (Zamorin) procured permission to establish go downs and a small colony. He was followed by the Dutch, the French and the English with the same intention. Each joined different rulers of the princely states along the coast and started fighting each other and also fighting with local rulers for getting supremacy. The ultimate outcome was the establishment of a large British empire in India. Others also could own small colonies in the country. The supremacy of teak wood war vessels of Malabar kings became famous. Rose wood, sandal wood and ebony available in plenty in western ghat forests also became world famous in addition to produces like cardamom, pepper and nutmeg. Indian ivory had a ready market in Europe.

All these change the forests management practises. British East India Company and subsequently the British Govt. of India started acquiring forests especially in Malabar area by
conquest, purchase or lease. Such forests later became Govt. forests or reserved forests. Large quantity of teak, rose wood, ebony and sandal wood were procured by various means for shipping to England. The French, the Portuguese and the Dutch were not as strong as the British and therefore their exploitation of forests was less rather negligible in Kerala.

During early 18th century, the British who by that time had become the world's biggest naval force found it difficult to get good oak timber for ship building. Malabar teak as teak was known found to be superior to oak for ship building. The British offices and their agents in Kerala especially in Malabar procured huge quantities of teak from the rulers and landlords of Malabar and sent the same to England for ship building Captain Watson was appointed as conservative of forests in 1806 to supervise these works. He imposed a royalty on teak and banned cutting of teak trees below 21 inches girth so as to restrict indiscriminate felling.

Almost during this period the British defeated Pazhassi Raja of north Malabar and took over his kingdom which had large tracts of forests from Kannoth to Mananthavady and beyond. Though belonged to Pazhassi Raja the local tribes used to practice shifting cultivation in these forests. British Govt. Taxed them for doing so which met with stiff resistance from the tribals. In 1823 royalty on teak was abolished and a stumpage charge of Re 1 per tree was introduced. The administration of forest was brought under the collector of Malabar. 1840's saw revolutionary changes in forest administration in Malabar. Series of war was in Europe between England and
neighboring countries made teak dearer to the rulers. Natural teak was becoming rare due to the over exploitation and conversion of accessible forest to cash crop plantation. Shortage of natural teak set the ‘think tanks’ in motion. In 1842 H.V. Conolly the then collector of Malabar tried to regenerate teak artificially. But his initial attempts failed. Subsequently his accountant Chathu Menon who was appointed as sub conservator of forests in 1844 succeeded in germinating teak seeds and made small plantation. The teak plantations all over the world owe their allegiance to Chathu Menon.

British Govt. of India by this time became forest conscious and wanted to acquire as much forest land as possible from the local rulers and landlords. They also purchased forest land from various Devaswams. They got some areas by escheat also. Acquisition of forests and beginning of plantations forestry marked the commencement of scientific forestry in Malabar. European officers were appointed as conservators of forest and district forest officers. Modern forest management throughout India started almost during this time. The contributions of eminent European foresters like Brands, Smith, Gamble, Bourdillon are worth mentioning. They introduced forest management in India almost similar to that then being practised in France and Germany.

The first Act to give effect to rules for the management and preservation of government forest was passed in 1865. It can be seen from the provisions of the act that the major objective was to establish governments control over the forest. Initially the management of forest was done
through executive orders like introduction of royalty stumpage value etc. Wild life management also saw a small beginning in 1867 with the prohibitory order against shooting elephants. A more comprehensive Act was passed in the year 1878. Provisions were made to regulate or prohibit certain act like damaging trees in forests and the act continued and extended the Govt. policy of establishing control over forests. It has also made several provisions for the imposition of duty on timber. During 1882 the Govt. of Madras Presidency wanted to give legal sanctity to various activities in forests and thus promulgated the Madras Forest Act. This regulated constitution of reserved forests, rights of local people in forests etc. Rules were also formulated under the act regulating movement of timber and other forest produces, grazing, shooting wild life etc. The forests acquired by Govt. were constituted into reserved forest under this act. Along with the Govt. or reserved forests, forest under private ownership thrived but mostly without any scientific management. In 1894 the Govt. declared its forest policy which emphasised the commercial use of the forests as also its ecological value paved the way for the regulation of rights and principles of forest dwellers over forest and produce. This act was modified in parts by different acts of the Govt. and was later replaced by the Indian Forest Act 1927.

The Act of 1927 was followed by the Govt. of India Act 1935, passed by the British parliament created provincial legislatures. The subject of forest list was under this act. Forest was a subject in the state list in the 7th schedule of the constitution of India till 1976, later it was
transferred from the state list to the concurrent list. Govt. of India Act of 1980 prohibited the state Govts. from allowing any forest land for any other purpose without prior approval of the central Govt. The new national forest policy by Govt. of India resolution 1952 which emphasis ecological and social aspects of forestry and gave only secondary importance to the needs of commerce and industry, as also the need for revenue. It did not accept the condition that the neighbouring areas are entitled to a prior claim over a forest and its produce and prescribed that such use of forests should in no event be permitted at the cost of national interests. National commission on agriculture was set up who advocated the commercialisation on agriculture at all cost and recommended that the revised national forest policy of India should be based on the important needs of the country as -

- Managing the forest resources of the country so as to provide maximum goods and services for the well being of the people and economic progress of the country.

- Checking denudations and erosion in mountainous regions and catchments areas of rivers on which depends perennial stream flows, facility of the land in the catchments and the useful life of dams and reservoirs.

- Preventing erosion along treeless banks of rivers, and on the vast stretches of wastelands and arresting the spread of sea-sand on coastal traits and of shifting sand dunes in western deserts.
- Maximum forest productivity with a view to meet the growing demand for industrial raw material timber and other forest produce for defense communications and other domestic needs and to augment the development potential with the ultimate aim of national prosperity.

- Providing grass and grazing for livestock in forest areas, ensuring that it is not harmful to forests.

- Providing small timber and fuel wood requirements of the rural population.

- Providing recreational and tourist opportunities in the forest without impairment of forest resources including wild life and the preservation of environmental balance.

- Creating blocks of forests interspread with the cultivation or by introducing trees in larger number in the ecosystem after careful selection for maintaining a healthy relation between soil, vegetation and animal life and establishing diverse biotic complexes for minimizing chances of elimination of enemies of insects and other pests which damage mono-cultures. Indian Forest Bill 1980 tries to formulate certain definitions, thus forest includes any land containing tree or shrubs, pasture land and any land whatsoever which the state govt. may by notification declare to be forest for the purpose of this act. This clearly states that the Govt. can even declare land without any trees or shrubs as forest lands. The bill also classifies the forest into - Reserved Forest, Protected Forests and Village Forest. The bill emphasis forest protection not for the people, but from the people. The main objectives of the policy are protection of environment and
ecological balance, meeting the basic needs of the forest dwellers and to meet the needs of industrial raw material.

India's forest policies originated about a century ago when the colonial government set priorities for commercial exploitation and state custodianship. These policies gradually became incompatible to Indian population needs. The increased dependence of rural population on forest produce and limited capacity to socially fence the forests, forced re-orientation of the forest management system towards responding to the needs of the rural communities and encouraging their participation in the conservation and protection of adjoining forests.

The National Forest Policy (1983) provides support for peoples participation in the forest management and allows certain policy changes. Fortunately operational systems in implementing the policy are already evolved in certain parts of the country prominent among them are-Sukhomajri and Shivalik hill village experiments in Haryana and Arabari experiments in West Bengal which yield positive results. These systems provide empowerment of forest communities to work jointly with state forest departments in protecting are being evolved through innovative and committed participation of forest officials and community. The operational forest use systems are there by proving effective in reducing the conflicts between the resource sharing by communities and the forest management. These joint experiments have shown positive results in regarding the forest growth and reclaiming the eroded lands.
Trees are said to be the nation’s green gold’. In India however forests are neither abundant nor rich in these products. The national policy resolution of India in 1952 had recommended that the country should aim at maintaining one third of the total geographical area under forests. The distribution of forests in India is uneven, in the North Western part of the country. 11% the area is under forest. In contrast in the central region alone 44% of land is covered with forest. Forest manifold ecological benefits on the country. They influence climate and reduce extremes of temperature. Forest supply vast raw material to many industries. Before independence the Government of India had virtually no policy for the conservation and development of forest. The nationalist Government took some time to realise the implications of the deforestation process that was going on in the country for sometime past, under the pressure of growing population and increasing demand for forest products.

Forests have protective as well as productive functions. They are nature’s insurance against floods. In the words of planning commission the forest of India are the source of many kinds of timber with varied technical properties. The forest produce is usually divided into two categories-major products and minor products. The major products are timber and fire wood. The timber is used for building purpose in the construction of railway carriages, for sleeper, for making furniture and for making agricultural implements. Among the minor products are included lac, resin,
turpentine, essential oils, tanning materials bamboo cane grasses and herbs.

Since independence the Govt. of India have been quite alive to the necessity of developing forestry in the country. Accordingly the Govt. inaugurated in 1950 “Vanamahotsav” or the grow more trees campaign. In order to evolve and carry out an all India forest policy a central board of forestry was also set up. India possess some 4,000 or more woody specious amongst the luxuriant flora which has been aptly described as perhaps the richest and certainly the most varied on the surface of the globe, there is therefore a wide choice of timber for different purposes.

To select the best wood for a particular purpose calls for an accurate knowledge of the qualities required and reliable information as to the wood possessing those qualities. In the choice of wood for a particular purpose, laboratory tests are necessary for ascertaining the desired properties and characteristics but its suitability is finally decided after actual trial. For high class furnitures, cabinet making and decorative panel work a better quality is required than that usually employed for ordinary joinery work. Cabinet making involves a high degree of skill and the piece of finished article is comparatively high so as the finest timber are used for this work. The sound consumption for furniture in India is estimated at 2,12,000 cubic meter. High class furniture is now being used for linen boards besides split wood. Some quantity of furniture is exported to the Middle East. Rose wood, Padank, Satin wood, Ebony and Wall Nut have been known and appreciated throughout the decoration and furniture goods.
Decorative features in wood may in some respects be regarded as arising from the caprices of nature. The decoration features of wood are mainly traceable to colour lustre, grain, anatomical structure and abnormalities or irregularities in growth, in colour, great variations are met with in different timber species. Sap wood is always light coloured and does not usually play any part. However, marble wood of the Andaman Islands exhibit a beautiful black and white stripped appearance swing to the inclusion of sap wood in the hard wood in alternating layers. Hard wood on the other hand is most important as it shows a great variety in its colour range, some of the colours being particularly striking, most of the furniture timbers fall under the category of decorative woods Walnut is used in Kashmir for making high class furniture. It has a pleasant greyish brown colour, is soft and smooth to touch and is excellent for carving. Some times the wood has an extraordinary good figure and fetch fancy prices. Padank from the Andaman is another high class furniture wood. Sisoo is one of the most popular furniture wood in North India. Apart from its strength and pleasant brown colour, it has reasonably good figure which can be brought out if used after peeling or slicing. It can be carved very nicely. Rose wood of South and Western India is another high class furniture timber with good strength and working properties and has an attractive colour. It does not however give as good a figure as Sisoo. Teak has always been a popular furniture wood. Teak of the dry zone e.g., Central India is often highly figured. While leader is finding increasing use for furniture mainly on account of its pleasant light colour.
Rokko is regarded as a high class furniture timber because of its handsome figure, Champ is used for furniture making in Assam on account of its pleasing olive brown colour and lustre. White chungam is a highly figured furniture timber of the Andamans. Decorative timbers find an important place in the panelling of walls. Sisso and Siris are regarded as good decorative panelling timbers. Teak and laurel make high class panels when used as face veneers in tania board. Teak is used for panelling as soled timber also. White decorativeness of wood of all kinds, particularly of waste wood have been made possible by research. Two forms of decorative uses of wood waste namely the Fridiapes, and Mosaic Boards have been developed at the Forest Research Institute, DehraDun.

**Forests in Kerala**

Teak, described as the queen of timber is used for fine cabinet work. All these have contributed to the economic development of the country and particularly that of Kerala State.

The State of Kerala lying on the south western region of the sub-continent is traditionally noted for both its major and minor forest resources. With the development of trade, wood an important forest produce has brought fame, as well as fortune, regional and national. Trade on wood and wood products have been carried out in different parts of the world by the ancient tradesmen of the region.

Kerala has a unique place on the geographical map of South India. A narrow coastal belt
lying sandwiched between the Western Ghats on the east and the Arabian Sea on the west with an area of 38,863 sq. km. and a total population of 29,098,518 (1991 census), the State has all the characteristics of a distinct "Geographical unit. The Union Territory of Lakshadweep, a cluster of islands, is situated in the Arabian Sea off the coast of North Kerala. The State of Tamil Nadu borders it on the south and partly on the east and the State of Karnataka on the north and partly on the east.

The modern State of Kerala was formed on November 1, 1956, but the origin of the traditional land of Kerala is lost in the mists of antiquity. According to legend, Kerala was the gift of the Arabian Sea to Parashurama. The story goes that Parashurama, the Aryan saint, threw his parasa (axe) across the sea from Gokarnam to Kanyakumari (or from Kanyakumari to Gokarnam according to another version) and water withdrew up to the spot where it fell. The tract of territory so thrown up is said to have constituted the land of Kerala.

The Parashurama legend relating to the origin of Kerala has no historical or factual basis, but at the same time it embodies some geographical and geological facts pertaining to ancient Kerala. In ancient days a major portion of the land area of Kerala must have been submerged in water, the Arabian Sea itself having extended up to the foot of the Western Ghats. It is possible that as a result of the operation of some volcanic or seismological factors the land must have been
thrown up from the sea and it might have been covered in due course by large quantities of silt and mud brought down by the numerous rivers which take their source from the Western Ghats.

Kerala has been divided into three natural divisions on the basis of physical features. They are the highland, the lowland and the mid-land. The Western Ghats which bound Kerala on its eastern side and dominate its topography constitute the highland. While the upper ranges in this mountainous area are covered by thick forests, the lower range have their plantations which lay interspersed with forests.

Kerala is richly endowed with natural resources. Teak, rosewood and other valuable trees grow in this area which presents everywhere a splendid luxuriance of foliage and flowers. Crops like tea, coffee, cardamom and turmeric abound in the higher elevations while in the sub-mountainous tracts in and below the Ghats are grown crops like pepper, rubber and ginger. The lowland is comprised of the long and narrow coastal belt on the west with stretches of sand and backwaters. The landscape in this area is dominated by extensive paddy fields and numerous coconut plantations. In between the highland and the lowland is the midland which presents an undulating country covered by laterite soil cut across by rivers. Here may be seen the villages broken intermittently by isolated hills and also the plains leading to the forest-clad uplands. Paddy is the common crop in the valleys while tapioca is cultivated on the slopes and uplands.

Kerala State is noted for its mountains which, with their high altitude and varied
configuration, present an imposing spectacle. The Western Ghats which constitute the chief mountain system present their highest elevation in the Anamudi Peak (2694 m) which is the highest peak in Kerala and the highest in India outside the Himalayan chain of mountains. The Ghats contain a succession of hills of varying altitudes. The mountains and hills in the Western Ghats together with the lower ground from which they rise are known as the High Ranges. Some of the hills have on their top or in their valleys the reputed pilgrim centres or tourist resorts of Kerala. Sabarimala in Idukki district and Tirunelli in Wavanad are important pilgrim centres while Thekkady, Devikulam and Munnar in Idukki district and Ponmudi in Thiruvananthapurain district have won their place on the tourist map of the country.

The Arabian Sea looms large in the history of Kerala as is evidenced by the Parashurama legend alluded to earlier. It pro-does the Site with a fairly long and unbroken seaboard served by a number of ports. Ports like Muziris (Kodungalloor) Kollam, Kozhikode and Kochi have played their part in moulding the history of Kerala. The emergence of Kochi, the “Queen of the Arabian Sea”, as the premier port of Kerala in modern times has enabled the State to maintain its maritime and commercial traditions unsullied. The extensiveness of the sea coast has helped to give Kerala its pride of place on the fisheries map of the world.

The rivers of Kerala have blessed the State with abundance of water resources. There are forty four rivers flowing through kerala of which all, except three, are west flowing. Only four
rivers, viz. Bharathapuzha, Periyar, Pampa and Chaliyar exceed 160 km in length while all the others are relatively small with an average length of about 64 km. Kerala has a long chain of lagoons and backwaters. They run almost parallel to the sea coast and receive water from the numerous rivers and streams.

The diversity of physical features has resulted in a corresponding diversity of climate. The high ranges of Kerala have a cool and bracing climate while the plains are hot and humid. The average rain fall in Kerala is quite high, as the State gets the benefit of two monsoons, the south-west and the north-east. The south-west monsoon bursts on the Kerala coast during the end of May or early June with the commencement of what is locally called Edavappathi. During the period from June to September the coastal plain is crossed by dark low thick clouds. In their attempt to cross the Ghats they rise and they rise and give heavy rainfall. On the plains an average of 254 cm of rainfall is recorded during the four months, June being the month of the heaviest rainfall. In the Western Ghats it even exceeds 500 cm. The south-west monsoon retreats in September giving place to the north-east monsoon which is locally known as Thulavarsham. January and February have pleasant weather, for the sky is clear, humidity is less and nights are relatively cool. March, April and May are very hot and sultry months. This is due to the inflow of considerable moisture from the sea. The social and cultural activities of the people of Kerala reach their peak during these months of the year when there is no rainfall.
An important feature of the demography of Kerala is the steady increase in population registered at every census. The growth of population since the turn of the century has been indeed spectacular. Among the districts of Kerala, Malappuram is the most populous and Wayanad the least populous. However, in respect of density of population Alappuzha has the first rank among the districts while Idukki has the lowest.

The economy of Kerala has its positive and negative aspects. The picture that Kerala has presented in recent years is that of an economy which has shown an up trend in its growth process. The modernisation of the economy of Kerala in the agricultural and industrial sectors has received top priority and this has given a spurt to the growth of the economy. The satisfactory performance of agriculture and the improved performance of the industrial sector, particularly manufacturing sector, bears evidence of this growth.

Kerala a tiny piece of land with Western Ghats on one side and the Arabian Sea on the other side with its rich diversity has made it into God's own country one of the most sought after holiday destination in the world. Kerala is fine in summer, in the monsoon, in the winter - it means a lovely mantle round the year and becomons one onwards to more destinations within its rolling ghats and sandy costs. Kerala is richly endowed with natural resource. It possesses essential infrastructural facilities for the location of a variety of industries. It has a variety of minerals such as china clay, lime stone, lime bearing sand, graphite etc., rich forest with Teak wood, Rose
wood and different species of Softwood agricultural cash crops including coconut, arecanut, cashew nut, tea, coffee, rubber a variety of spices such as pepper, ginger, cardamom and fishery resources area abundant. Kerala has well developed infra structural and natural harbor at Cochin and many other minor and intermediate ports. Trivandrum, Cochin and Kozhikode are connected by air. Above all Kerala has skilled and intelligent people. In sum Kerala has virtually everything needed for rapid industrialisation. There is also considerable scope for export oriented industries, the potential of which have not been fully tapped.

Kerala is rich in forest wealth having a sizable area of forest supplying quality timber and forest products. If it was not for its steamy weather or its congested streets Kerala could surely claim to be the land of Gods. Western ghats draw a sharp green line of blue mountains and the forest to high light this fairly land of pale fringed paddy fields, lakes back waters and rolling beaches. The total forests area of Kerala state is 11221 sq km., but the effective area is only 9400 sq. km. Productivity of Kerala forest is the highest in the country.

Kerala has a geographical area of 32.89 million hectares. It lies on the west coast between lat., 8.17 and 12.47 N and long., 74.52 and 77.24 E. Physio graphically the state can be divided into the coastal, midland and the high land zones. The important rivers of the state are the Periyar, Kallada, Attingok which drain into the Arabian Sea. Situated in the humid tropical belt, the state
is characterised by high rain fall and humidity. The rain fall varies between 1520 to 4075 mm. and the temperature ranges from 19.8 °C to 36.7 °C. The total population of the state is 29.10 million (1999 Census) of which urban population is 26.39% and rural population is 73.61%. The population density of 749 persons per square kilometer is the highest in the country. The scheduled tribe constitute 1.10% of the total population. The livestock population of the state is 5.583 million (1992 livestock census). The total area of the state is 38863 sq. km. which is 1.18% of the area to the area of India. The forests cover of the state based on satellite data of January and March 1996 is 10323 sq. km., which 26.50% of the geographic area.

Table : 2.2 showing total area of the state.

<table>
<thead>
<tr>
<th></th>
<th>Sq. km.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dense forest</td>
<td>8454</td>
</tr>
<tr>
<td>Open forest</td>
<td>1880</td>
</tr>
<tr>
<td>Scrub</td>
<td>83</td>
</tr>
<tr>
<td>Non forest</td>
<td>28446</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>38863</strong></td>
</tr>
</tbody>
</table>

Source : From the Forest Records

The recorded forest area of Kerala is 1.12 million hectares which constitutes 28.87% of the land area. Out of this Reserved forest constitute 84.22% and the remaining 15.78% has been declared as Vested forest under the Kerala Private Forest (Vesting and Assignment) Act 1971.
There are seven forest types namely -

- Tropical wet evergreen
- Tropical semi evergreen
- Tropical moist deciduous
- Tropical dry deciduous
- Sub tropical broad leaved hill
- Mountain wet temperate and
- Littoral and swamp forest

There are three National Parks and twelve Wild Life Sanctuaries spread over 0.27 million hectares which constitute 6.90% of the geographic area of the state. Periyar tiger reserve is located in the state, Sashtamkotta and Ashtamudi located in Quilon district with an area of 375 hectares and 3200 hectares respectively are important wet lands of national importance. A part of Nilgiri Biosphere Reserve falls in Keral. There are 1384 villages in the state of which 317 villages have forest as a land use. The forest area in these villages is 0.9 million hectares and the population of these villages is 4.48 million. The number villages have less than 100 hectares between 100-500 hectares and more than 500 hectares in each village constitute 21%, 30% and 49% of the total villages respectively.

Kerala has many notable achievement to its credit. In sum kerala has vitually everything
needed for rapid industrialisation. There is also considerable scope for export oriented industries, the potential of which have not been fully tapped. The industrial sector rests on a reasonably strong foundation. Forest based industries play a vital role in supplying essential products to the economy.

Forests are considered as renewable resource constituting a dynamic biological system containing millions of living organisms, both plants and animals, living together in perfect harmony with nature. Man used to derive more and more benefits from forests. As a consequence of this the extent of natural forests dwindled leaving remnants in places far away from habitations. Large scale interference by man in Kerala Forests for the past one and a half century exceeded the capacity of self-maintaining regulatory processes of forests. This has resulted in the destruction of the dynamic stability of the forests in most of the areas except the inaccessible hill tops and steepvalleys where some good patches still remain as repositories of genetic wealth. Kerala’s diverse climatic, edaphic and physiographic factors have led to the formation of different types of forests ranging from the temperate hill forests to dry scrub jungles.

Major chunks of forests occur on the hills and in the valleys of the Western Ghat mountains which form a long chain of mountain system broken by a natural gap of 30 km wide at Palakkad. This mountain chain has played a significant role in isolating a variety of organisms on either side of it for a long period of time.
Thick wet evergreen forests occur in the medium elevations of high hills. Islands of shola forests surrounded by elevation grasslands occur on the hills. These lops of highhills of Bhrahmagiri and Kottiyoor support good evergreen forests. The western slopes of Nilgiri, New Amarambalam Silent Valley and Attapady valley is the transition zone from wet evergreen forests to dry deciduous xerophytic forests. To the South-North of Attapady hills are the evergreen forests of Lost Valley and Elival Malai which end at Kalladikodu Hills. On its Northern stop high rain fall has given rise to a path low level evergreen vegetation is semi-evergreen and moist deciduous types. To the south of Muthikulam, the hill range abruptly ends at Palakkad gap where the rainfall goes down leading to the formation of moist deciduous forests and dry deciduous forests.

South of Palakkad gap starts the long hill chain of Nelliampathy, Anamalai and Palani Hills. The western slopes contain moist deciduous, semi-evergreen and evergreen forests. The eastern slopes of Munnar Hills support sandal bearing dry deciduous of Marayoor.

Between the Periyar Plateau and Munnar Hills lie higly distributed cardamom lands, which are at varying degrees of degradation due to different types of cultivations interspersed among cardamom estates. The clearance of forests in different parts of this stretch has led to microclimatic change resulting in gradual deterioration in cardamom yield. This disturbed stretch of land has almost broken the continuity of the forest up to the Periyar Plataeu.

There are very good stretches of evergreen, semi-evergreen and moist deciduous forests
starting from the Periyar Plateau. This natural vegetation extends through Goodrickal and Achenkoil upto Aryankavu pass. South - west of Aryankavu pass in Shenduruni Valley.

The Shenduruni Valley and Agasthyamalai Hills support some of the rich virgin forests of the State. Most of the forests in Ponmudi Hills have been replaced with tea and other crops. The moist deciduous, semi - evergreen and part of evergreen forests situated on the western slopes of Peppara and Neyyar have been brought under wildlife preserves for effective protection from high anthropic pressure. Effective forest area is shown in table 2.3

<table>
<thead>
<tr>
<th>Table : 2.3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forest of Kerala</td>
</tr>
<tr>
<td>Forest area (as per Forest Survey of India 1993)</td>
</tr>
<tr>
<td>Forest area (as per Govt. records)</td>
</tr>
<tr>
<td>Effective forest area Sq. Km.</td>
</tr>
<tr>
<td>Percentage of forest area to land area</td>
</tr>
<tr>
<td>Area in sq.km. (9400) is spread out as</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Divisions</th>
<th>sq. k.m.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evergreen and semi evergreen</td>
<td>3,480</td>
</tr>
<tr>
<td>Moist Deciduous</td>
<td>4,100</td>
</tr>
<tr>
<td>Dry Deciduous</td>
<td>94</td>
</tr>
<tr>
<td>Mountain sub tropical temperate Sholas</td>
<td>188</td>
</tr>
<tr>
<td>Plantation</td>
<td>1,538</td>
</tr>
<tr>
<td></td>
<td>9,400</td>
</tr>
</tbody>
</table>

Source: Compiled from the forest records
The forests of Kerala exhibit considerable differences in floristic composition, physiognomy, life forms etc. primarily due to climatic, edaphic and physiographic variations. The forests of Kerala have been divided into 7 major types which are subdivided into 20 subtypes and many further subdivisions depending upon the floristic composition and other minor factors.

At present the forests occupy mainly the hill tops, sleep valleys and plateaux of Western Ghats. Following are the different forests types found in Kerala.

**West coast tropical evergreen forests**

These forests constitute the climax vegetation of Kerala characterised by at least three tiers, the highest often attaining a height of 40-45 m. Ecologically this forest is the most advanced stage with high floristic richness and provide much of tangible and intangible benefits. This forests are the store houses of medicinal plants (about 180 species) and many wild relatives of cultivated plants. About 25.50% of forests of Kerala belongs to this category. More than 50% of this forest has been subjected to timber working of varying intensity under selection selling system. The heavily worked areas take very long time (50-80 years) for coming back to the original stage.

**West coast tropical semi-evergreen forest**

This type is generally considered as a transitional stage between evergreen and moist deciduous forest. It is also found in localities where the evergreen forests are subjected to high disturbances. It occurs between 600-800, and in some places it extends up to 900 m. This forest
type constitutes about 11.40% of the forest area of the state. This type supports trees of more commercial value more than 70% of this forest area has been subjected to selection felling in the past.

**South Indian moist deciduous forests**

Moist deciduous forests are commercially very rich in contrast to evergreen forests. The trees reach 30-35m height. The present extent of moist deciduous forest is about 44% of the total forest area of the state. Most of this forests are in degraded condition due to the annual fire and other anthropic activities as most of this are near to highly populated villages. This type is store house of medicinal plants (about 300 species).

**Southern subtropical broadcurved hill forests**

This type is commercially poor. It is inferior to the wet evergreen forests of lower elevations. The area is exposed to high winds. The height of trees seldom exceeds 20m. The rainfall is heavy varying from 3000 mm to 5500 mm and in some places even going up to 6500 mm. The relative humidity is also high (80-100%). This type is poor in species richness. This type constitutes only 0.54 of the total forest area of the State and is ecologically important as it is the store house of water which is released slowly to the streams. Moisture regime is very high. Only about 4% of the medicinal plants are found in this type.

**Southern montane wet temperate forests**

This type occurs in the upper reaches of the hills especially of cliffs and sheltered folds
above 1900 m. Southern montane wet temperate forests are also known as sholas and are found in pockets supporting stunted trees which seldom attain 10 m. The temperature is very low (10-15°C) and the rainfall is heavy (>4000 mm.). The relative humidity is also very high (80-100%). Altitude and high wind control the height growth of the plants. In most of the areas the grasslands get burned every year and the fire streets into shola forests. The result is the encroachment of grasslands into the sholas. This shola forest constitute only 0.2% of the total forest area of the state and play an important role in the hydrological cycle as the soil stores plenty of rain water. As regards medicinal plant wealth this type is very poor containing only about 30 species.

Southern tropical dry deciduous forests

This is of less commercial value compared to the moist deciduous type. The main factor which controls this type is the low moisture regime due to low rain fall (less than 1000mm/year). The temperature is high (25°-40°C) and the humidity is very low (30-60%). This type is open with trees reaching 15-20 m. The presence of this type in the higher elevation is mainly due to the aspect, low rain fall and frequent fires. Southern tropical dry deciduous forests are highly degraded forests due to very heavy pressure of grazing and annual fire with prevent the new generation plants from coming up. The actual forest cover of each district of the state of Kerala is given in table 2.4.
Table 2.4

<table>
<thead>
<tr>
<th>No.</th>
<th>District</th>
<th>Reserved Forests</th>
<th>Vested Forest</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Thiruvananthapuram</td>
<td>488.37</td>
<td>3.53</td>
<td>491.90</td>
</tr>
<tr>
<td>2</td>
<td>Kollam</td>
<td>849.03</td>
<td>12.98</td>
<td>862.01</td>
</tr>
<tr>
<td>3</td>
<td>Pathanamthitta</td>
<td>1566.13</td>
<td>1.611</td>
<td>1567.74</td>
</tr>
<tr>
<td>4</td>
<td>Kottayam</td>
<td>100.84</td>
<td>-</td>
<td>100.84</td>
</tr>
<tr>
<td>5</td>
<td>Ernakulam</td>
<td>310.91</td>
<td>-</td>
<td>310.91</td>
</tr>
<tr>
<td>6</td>
<td>Idukki</td>
<td>2953.71</td>
<td>37.39</td>
<td>2991.11</td>
</tr>
<tr>
<td>7</td>
<td>Thrissur</td>
<td>1006.72</td>
<td>6.34</td>
<td>1013.06</td>
</tr>
<tr>
<td>8</td>
<td>Palakkad</td>
<td>852.56</td>
<td>750.80</td>
<td>1603.36</td>
</tr>
<tr>
<td>9</td>
<td>Malappuram</td>
<td>325.44</td>
<td>434.85</td>
<td>760.29</td>
</tr>
<tr>
<td>10</td>
<td>Kozhikode</td>
<td>86.13</td>
<td>208.11</td>
<td>294.25</td>
</tr>
<tr>
<td>11</td>
<td>Wyanad</td>
<td>564.70</td>
<td>319.56</td>
<td>884.26</td>
</tr>
<tr>
<td>12</td>
<td>Kannur</td>
<td>142.84</td>
<td>87.26</td>
<td>230.11</td>
</tr>
<tr>
<td>13</td>
<td>Kasargode</td>
<td>86.02</td>
<td>24.69</td>
<td>110.71</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>9333.46</strong></td>
<td><strong>1887.14</strong></td>
<td><strong>11220.60</strong></td>
</tr>
</tbody>
</table>

Source: Kerala Forest and Forestry Hand Book - 1995

According to Sec. 2 of the Kerala Forest Act 1961, as amended in 1993, Forest produce includes the following whether found in or brought from a forest or not that is to say timber charcoal, woodoil, gum, resin, natural varnish, barklae fibres and roots of sandal wood and rose wood and

- the following when found in or brought from a forest, that is to say-trees and leaves, flowers and fruits, and all other parts or produce not herein before mentioned of trees - plants not being trees (including grass, creepers, reeds and moss) and all parts or produce of such plants and - silk cocoons, honey and wax - peat, surfacessoil, rock and minerals (including limestone, laterite) mineral oils and all products of mines or quarries.
- land at the disposal of government includes – all unoccupied land all temporarily occupied land and all land occupied without permissions whether assessed or unassessed, but does not include land, the properties of land holders such as Jenmies, Devaswams or holders of Inam lands, also all holdings of land in anyway subject to the payment of land revenue direct to government and all other registered holdings of land in proprietary right.

- timber includes, trees when they have fallen or have been felled and all wood, whether cut up or fashioned or hollowed out for any purpose or not and

- tree includes, palms, bamboos, stumps, brush wood and canes.

Most of the land area of Kerala was clothed with forest as evidenced by the relict low evergreen vegetation in the sacred groves. There was no demand for forest produce except for some prefered species like cardamom, cinnamon, etc, which were in high demand among the Babylonians, Egyptians and Assyrians who came once to the Malabar coast for purchasing the same as of far back as 3000 B.C.

The timber was not in demand then either in the domestic market or in the foreign market. During the first five centuries the Greeks, Romans and Arabs also established trade link with Kerala for the minor forest produces. During the 9th and 10th centuries, traders from China established with Kerala for the purchase of pepper, cinnamon, tea and ivory (Karunakarana,
1987). Thus teak timber came into prominence as an export item. Domestic use of timber especially teak for the construction of temples and palaces was also in the increase. Demand for teak soared high in 18th century for ship building unit. Large scale extraction of teak timber was started and it reached its peak during the early 19th century. The rulers of Travancore and Cochin and the owners of the forests in Malabar concerned much on the extraction of teak inorder to get revenue. The demand for teak was so much that special arrangements were made and staff posted to look after the extraction. Realising the scarcity of teak to meet the requirement, an idea gave birth to the raising of first successful teak plantation in Kerala in 1844 by Chathu Menon. The demand for timber started flowing from different parts of the Country for various purposes and this resulted in the haphazard types of extraction from the forests without appropriate scientific check. The promulgation of forest Acts in Malabar (1882) Travancore (1887) and Kochi (1905) brought some control over the aggressive extraction of timber. The gradual introduction of working plains in the state led to the regulated extraction of major forest produces.

Timber, poles, fuel wood and charcoal constitute the major forest produce. Bamboos, reeds, sandal wood and ivory come under the major forest produce. The timber plays a significant role in the economy of Kerala. The forest and wood based industries are of paramount importance to the state for the economic development by alleviating poverty and unemployment.
Right from the early days, Malabar coast used to be a fascinating land for foreign invaders. The Arabs, the Portuguese, the French and the British came here because it was famous for its richness in Pepper, Cardamom and other species, they took the species, they purchased to their countries through sea. It essential that the sea-going vessels were excellent, tough and absolutely sea-worthy for maintaining trade and fighting for supremacy in their earnest efforts, they came across teak whose timber turned out to be the excellent for ship building. It proved, in fact, to be superior to all then known timbers. Teakwood had all the properties of a superior timber for ship building. This discovery led to heavy exploitation of the timber from the forests of Malabar coast which there by led to the replenishment of stock. For which artificial regeneration of teak was made by planting stumps. Presently Kerala has about 75,000 ha, of pure teak plantations. Besides this, about 16,000 ha, of teak and soft wood mixed plantation also exist. Konni, Nilambur, Malayattoor and Arayankavu are the famous teak centres.

Teak is very versatile easy to cultivate, extremely useful and valuable, is one of the important tree species because of the excellent qualities of its wood, with multi-farious applications and therefore treated as the King of trees. Teak wood is moderately hard, sap wood whitish, heart wood back golden yellow oily with a characteristic smell, very durable, seasons well, does not warp or split, takes fine polish and is easily workable.
The next renowned timber of Kerala is Rose wood which is one of the best known timbers for high class furniture and cabinets construction of buildings, flush door shutters, class 1 decorative marine and air craft plywoods musical instruments, turnery and bent wood articles and handy crafts. Rose wood is heavy fragrant golden brown to rose - purple or deep purple, usually streaked with darker bands, ornamental striation zones, most handsome of the timbers, is very strong and durable, works compartmental easy with a fine finish and takes good polish.

Next comes Ebony which in very heavy straight or curly granied, fine textured jet black, ornamental wood of first class, strong and durable finishing to very smooth metal like surface. It is used for carving and cabinet work walking sticks, mathematical and engineering instruments and handicrafts.

Sandalwood, the next variety which is seen occasional in southern dry mixed deciduous forests in Marayur (Iddukki district). It is cultivated to a limitted extent only. Timber is heavy, straight grained and finetextured, oily, light yellowish brown to darkbrown and strongly scented. One of the most valuable wood for the manufacture of small boxes, frames and other small nick -necks which are often beautifully carved suitable for engraving but too expensive. Wood yields sandal woodoil on distillation which in used as scent in perfumery and cosmetics also, has medicinal value. The root, wood and chips of heart wood of sandal tree are the main source of sandal wood oil obtained by yet process of distillation.
Varieties of plants are growing in the coastal areas resisting the saltish atmosphere, strong wind and very high temperature. These include ‘Kaattadi’ (Kashurina), ‘Choola tree’, the coconut tree, Sand Bancer, Iponia and Portulaka. The paddy fields are seen in the lower areas. Beyond the shores of the sea grow plants called ‘Neel Amari’, ‘Plaavazha’ and ‘Annaanpotha’.


Apart from such plants there are crops meant for cultivation. These mainly include Coconut, Paddy, Tapioca, Plantain and a variety of other vegetables. The main cash crops are Rubber, Coffee, Tea and Cardamom. Rubber plantation began in Kerala a century ago. Today Kerala leads over other states in the production of Rubber. Coffee, which is a native of Arabia, is cultivated in the high range areas in the northern part of Kerala. It is available in the market both as granules and powder.

Tea, Spices such as Pepper and Cardamom are being exported from Kerala in large quantities to countries in Asia and Europe and they earn valuable foreign exchange. Malabar Cardamom, Mysore Cardamom, Ceylon Cardamom are the three different varieties of Cardamom
that are being cultivated in the state. It is the most aromatic plant and important spice of Kerala.


Apart from the indigenous plants we do have the exotic ones too, a gift from the foreigners who landed in our country years back. Cashew tree, Mongoosthin, Dalia, are such exotic plants.


Wood is one of the versatile materials which finds very wide application in every daylife. The demand for wood and wood based products will be there as long as humanity exists. Wood based panels are engineered wood produce is which is used on a massive scale compared to sawn wood.

The growth of timber and wood based industries in any state mainly depends upon two
factors namely the stock of raw material and labour force.

Once the available wood is processed here itself as many as 5 lakh people would get direct employment and an equal number would be indirectly employed. The Govt would get crores of rupees every year from the industry. More over the wood industry is very suitable to the state since it does not contribute to environment pollution.

The prominence of forest in the state of Kerala has led to the development of wood based industries. Public Enterprises in Kerala have a much longer history than that of India in general. The history of Kerala reveals that Maharaja Marthanda Varma of Travancore was the first ruler to start a commercial department. Travancore was the first state to nationalise trade in commercial crops (in 1750 AD) during the reign of Marthanda Varma (1729 - 1758). At that time different commercial depots were established in different areas in Travancore and these depots were used for storing different commercial crops. The Government, possessed a monopoly over many articles of trade. The depots stored pepper, tobacco, and other articles which were purchased at a rate fixed by the Sircar (govt.) in pursuance of the Royal proclamation.

Another notable event that took place under the leadership of govt. was the introduction of railway in the erst while princely state of Travancore. “The railway route from Quilon to Trivendrum was opened on 26th Nov, 1904. Quilon to Trivandrum was commissioned in 1931 and the entire cost was met by the State Government”.

In the power sector private parties came first to start a power station in Kerala later the
govt. of Travancore installed the thermal station at Trivandrum.

In 1918, a separate Dept. of Industries was started by the Travancore State for the
development of industries. This department, was organised with the objective of developing the
economic resources of the state by establishing new industries and expanding the old ones. The
Travancore, Cochin and Madras Government. came together in 1925 for the development of
cochin Harbour into a major port. The total expenditure for the same was met equally by the
cochin and Madras Government.

The credit for the first public enterprise in the consumer sector goes to the Soaps and
Oils Ltd, Calicut. It was established in 1914, and it started its full scale production in 1927.

The Government. of Travancore was very much concerned about the problems faced
by the agriculturists regarding long term credit. In 1931 the Government., of Travancore established
the State Land Mortgage Bank to solve the problems of long term credit.

The Government. of Travancore was not against private enterprises coming up in the
state. It gave full support for starting industries in the private sector. But when entrepreneurs
hesitated to invest money in risk-oriented industries, the Travancore Govt, invested money and
started such industries. The Rubber Factory at Trivandrum in 1935 and the ceramic Factory at
Kundara in 1940 started as a result of this policy.
In 1937, the Government., of Travancore nationalised its road transport system and started a transport department.

After the second world war the Travancore and Cochin Governments., were forced to start many industries. This was because the demand for many products increased owing to the outbreak of war. The industries started during this period were Travancore cements Ltd, at Kottayam, Punalur paper Mills at Punalur, Glass Factory at Alwaye, Aluminium conductors Factory at Alwaye etc.

Before the formation of kerala State, it was the policy of the Government., of Travancore and Cochin to give full support to the private enterpreneurs. As a model the Government., started many industries in risky areas and tried to make them succesfull. So that the private enterpreneurs would be attracted to invest money in those areas. To quote the words of Sir. C.P. Ramaswamy Iyer. “What the object of Government., should be is to show the people the possibilities of industry and trade, to give them demonstrations, to start model factories, and after the people have learnt to stand on their own legs to step aside leaving it to the people to develop them as real national assets”.

History of Public Sector Enterprises began from 1946 with two enterprises Forest Industries Travancore LTD and Travancore Titanium Products LTD. When India got independence in 1947, the present structure of Kerala consisted of three regions-the primely states of Travancore,
Cochin and the Malabar under the British rule. Then though democratic Government came up in Travancore and Cochin States, they did not give much encouragement to the development of industries in the private sector. The First Five Year Plan (1951-55) did not give much importance for the development of industries in the Travancore and Cochin state. In the First Plan, the outlay for industries was Rs. 1.2. crores which formed only 3.7% of the total plan outlay (State planning Board plan allocations from 1951-52 to 1985-1990).

Once the Kerala state was formed in 1956, more industries were started in public sector. The Kerala Government. Ceramics Kundara and the Kerala Cycle Rim Factory Trivandrum are examples of industries started in the public sector.

The most significant development during the 1960’s was the establishment of the Trivandrum spinning mills at Balaramapuram. The Kerala State Industrial Development Corporation was started in 1961 and the Plantation Corporation in 1962.

In 1967, the Kerala Government, issued its Industrial policy statement which classified that the state would function within the limits of the policy laid down by the Government, of India. The outlay for industries in the second and third Five year plan was 6.84 crores and 17.19 crores respectively.

The percentage to the total outlay was 7.9 and 10.1 respectively (State Planning Board) During the fourth plan period a number of corporations were established. The new industries
started were in Coir, Cashew, Handloom, Textiles, Minerals, etc. In the fourth plan the total outlay for industries was 22.08 crores which was 8.6% of the total outlay (state planning Board).

During the fifth and sixth plan periods the number of industries started in the Govt sector increased. The plan outlay for expenditure also increased from 61.54 crores to 164.59 crores during these period. Today the public sector in Kerala occupies an important position in the state's economy.

Forest Industries Travancore was established in the year 1930 promoted by Seshasayee Group. It was incorporated under the Travancore Companies Act on 10th August 1946. The registered office of Forest Industries Travancore Ltd. is situated at Aluva which is the industrial belt of Kerala, near the banks of river Periyar in Ernakulam Dist. The company was solely established for the purpose of effective utilization of the forest resources, especially timber available from different parts of the state. Forest Industries Travancore Ltd is one of the most equipped work station for wood works in south India and its skilled technical personnel are capable of meeting any wood engineering challenges.

The unit became a Government company in the year 1960. The unit was originally the agency of Fertilisers and Chemical Travancore for procuring wood from Kerala Forest Department, in 1962. Since the company's main activity was the collection and supply of firewood to Fertilisers and Chemical Travancore a diversification of activities was thus necessary. Hence it was resolved
to start a wood-working unit. Accordingly additional accommodation was provided in the company’s premises at Aluva. Machinery was installed and workshop formally inaugurated in 1963. From then the company’s main activity is furniture manufacturing to meet the needs of the Government of Kerala and the domestic or commercial sector.

Timber and timber products form an important part in the construction activities in Kerala. The important centers of timber in Kerala are Malayatoor and Kothamangalam. The main objective of Forest Industries Travancore Ltd is to exploit and sell timber products from Malayatoor Division and elsewhere in the state of Travancore. The company undertakes the handling conversion and utilization of timber.

For this purpose the company sets up machinery, plant or equipment and arranges for the marketing of timber either in logs or cut size or any other seasoned form in any state in or outside India. The company mainly carries on its activities as timber merchant, wood workers, furniture manufacturers. It deals in articles of all kinds, in the manufactures of which timber or wood however small is used. The company manufactures pressed wood, wood pulp products, printing and other qualities of paper, plastics and charcoal distillation products wooden parts of houses ceiling wooden toys, packing cases etc.

Earlier, timber was cut from the forests of Kerala and sold to public through auction Royalty was paid to the Kerala Government for the timber thus sold. In the past timber was
procured mainly from the forest department. But presently the company procures bulk of its raw materials from the open market.

This is mainly because of the fact, that the departmental purchase requires advance payment. Because of the scarcity in the availability of good quality timber like teak, the company is resorting to the purchase of imported Sal wood from foreign countries. They can be used for the manufacture of furniture items.

During the early 70’s the company started exporting its furniture’s and allied items to the Gulf countries. At that time the company made its export but were not very attractive to Forest Industries Travancore Ltd. because of the presence of an intermediary. Presently the company is not exporting any of its products and is catering to the domestic market. A timber workshop has also been established for selling wooden furniture.