CHAPTER – I
THE FORESTS OF TIRUNELVELI AND THE SYSTEM OF MANAGEMENT PRIOR TO 1950

Forest, one of the principal natural resources, maintains environmental stability and plays a vital role in the ecological balances as habitats for flora and fauna, anchors for soils and tamers of climate. They provide raw material for a wide range of industries that contribute to the evolution of a sound national economy. They provide the common poor with some of the essentials for survival-fuel for cooking, building material for shelter, fodder for the livestock and wood for making their agricultural implements and fruits and roots for their sustenance. In the earlier days, the people had absolute rights over the forests as if it were their personal property.

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The forests of the Tirunelveli division had a total extent of 2,14,577.53 acres in 1948.\(^1\) It consisted of three ranges namely Kuttalam, Ambasamudram and Nanguneri. The Kuttalam range had a total extent of 51,588.08 acres, Ambasamudram range had 83,194.96 acres and Nanguneri range had 79,794.49 acres.\(^2\) However, with the abolition of zamins under the Madras Estates Act of 1948, large areas of forests enjoyed by them were brought under the forest department for the purpose of management. From records it is known that the Sivagiri ex-estate forest (18259 acres), Uthumalai (3472 acres), Chokkampatti (3000 acres), Vairavankulam (5000 acres), Okkanindranpothai (50 acres), Vellakalparambu (112 acres) and Thirumalainainaickan Pudukkudi (1886 acres) were added to the forest department on 15 October 1951. On 19 February 1952, part of Singampatti ex-estate forest of 28050 acres was added to the forest department.\(^3\) It should be noted

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\(^2\) Ibid., pp. 5-6.

that the remaining 26682 acres of Singampatti forest was in Tirunelveli South Division. None of them except the Singampatti ex-estate forest had been notified under section 26 of the Madras Forest Act.\(^4\) Again, between 1951 and 1952 considerable stretches of ex-panchayat forests were added to the forest department.\(^5\) Further, due to a major political change that took place in November 1956, the country’s sub-divisions were reoriented on a linguistic basis. With the addition of Shencottah Taluk to Madras State on 1 November 1956 Puliyara and Vellakalteri reserve forests and Achempudur reserve land passed on to the control of Tirunelveli division. This resulted in considerable realignment of the forest areas. This necessitated the forming of Tirunelveli North and South Divisions in 1956.\(^6\)

Tirunelveli North Division consisted of four ranges, namely Ambasamudram,\(^7\) Kuttalam,\(^8\) Shencottah\(^9\) and Sankarankoil. The total area of the forest division was 206,451.36 acres inclusive of the ex-estate and ex-panchayat forests.

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5 There were two ex-panchayat forests in the North Division, one of which was the Mayamankurichi ex-panchayat forests (477.14 acres) and the other was Sivalarkulam panchayat reserve (1411.28 acres). The Mayamankurichi forests was restored to the control of the forest department on 1 July 1952 and Sivalarkulam on 15 October 1951. Rajasingh, *Working Plan*, p.8; G.O. No. 119, Agriculture, 15 Jan. 1955.


7 Ambasamudram range was bifurcated into Kannikatty and Kodamadi ranges in 1921. From 1 October 1933, once again Kodamadi and Kannikatty ranges were amalgamated into one Ambasamudram range.

8 Prior to 1951, Kuttalam range consisted of only reserved forests in Sankarankoil and Tenkasi taluks but when the estate forests of Sivagiri, Uttumalai, Vairavankulam and Chokkampatti and the Kottamalai panchayat forests were taken over by the forest department it became unwidely and this led to the carving out of a new range called Sankarankoil range from 14 October 1953. G.O. No. 3380, Development, 27 Aug. 1953.

9 With the reorganisation of States, Shencottah taluk was added to Madras State and Shencottah range was created.
The Ambasamudram range had an extent of 11,244.86 acres, Kuttalam range had 37,820.70 acres, Shencottah had 9852.00 acres and Sankarankoil had 47,533.80 acres.\(^\text{10}\)

Tirunelveli South Forest Division consisted of four ranges of which Tirunelveli and Nanguneri ranges were situated in Tirunelveli revenue district and the other two ranges Azhagiapandipuram and Kulasegaram were in Kanyakumari district. The areas of reserved forests and other Government forests in each range under departmental control were: in Tirunelveli range, reserved forests 19218 acres, panchayat reserved forests 4817 acres, reserved lands 228 acres and ex-zamin forests 10,300 acres. In Nanguneri range, the reserved forests constituted 61,936 acres and ex-zamin forests of Singampatti, 26,682 acres including the area leased to Bombay-Burma Trading Corporation. The other two ranges had an extent of 4128 acres.\(^\text{11}\)

In the mid 1970s, Tirunelveli North Forest Division had an extent of 59,785.64 hectares of reserved forests, 23,816.43 hectares of reserved lands, totalling 83,602.7 hectares.\(^\text{12}\) Tirunelveli South Forest Division had an extent of 725 square kilometers of reserved forests and 176 square kilometers of reserved land.\(^\text{13}\)

The Tirunelveli Forest Division was formed on 1 April 1977 from erstwhile Tirunelveli North Forest Division. The territorial jurisdiction of this division extended over two districts-Tirunelveli and Tuticorin. The total extent of forest area in Tirunelveli district was 40253.16 hectares and Tuticorin 11001.92 hectares.\(^\text{14}\) Subsequently,

\(^{10}\) Rajasingh, Working Plan, p.5.

\(^{11}\) S.A. Rahmatullah, Working Plan For Tirunelveli South Forest Division 1959-60 to 1968-69 (Madras, 1963), pp.4-5.


\(^{13}\) Hand Book on Tirunelveli South Forest Division 1976 (Madras, 1976), p.5.

the Tirunelveli Circle was also separated from the erstwhile Madurai Circle during 1978 and the nomenclature was changed as Wildlife Southern Region, having headquarters at Rajapalayam, later shifted to Palayamkottai. Again it was changed as Tirunelveli Circle with effect from 1 May 1999.\textsuperscript{15} In 2006, the existing Tuticorin Forestry Division was converted as Thoothukudi Division (Territorial) covered with the areas in the district and it began to function with effect from 9 May 2006.\textsuperscript{16}

Only a fraction of the division, like the Uthumalai ex-estate forest and the ex-panchayat forests covers the plains while the rest of the forest area is hilly, very steep and rugged. The main ghat crest rises to about 5000 feet on an average. The ghats are further characterised by numerous folds and extensions engulfing small narrow valleys except the Mundanthurai plateau. The interior and higher reaches of the ghats are endowed with steep rocky masses, spurs and peaks with faces of varying aspects alternating with narrow deep valleys. The outer fringes when they merge with the plains also do not show gentle slopes except in places near Papanasam which accounts for the good number of water falls in the division.\textsuperscript{17}

The elevation varies from ninety feet to 5000 feet. Some of the highest peaks are far more than 6000 feet. The most popular and best known is the Agasthiyarmalai 6125 feet. Close to this there are other important peaks namely Ainthalai pothigai peak, 5991 feet, Nagapothigai, 5478 feet, Kuttalam peak, 5271 feet and Chokkampatty

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\textsuperscript{16} District Forest Officer, Short Notes on Tirunelveli Forest Division (Tirunelveli, 2006), p.2.

\textsuperscript{17} Rajasingh, Working Plan, p.1.
hill peak, 5351 feet. Most of these peaks are precipitous and very difficult to approach by
themselves, but the climbing is made almost impossible by the strong winds sweeping
over them. All the reserves in Tirunelveli range, Kolundumamalai and Manpottai
reserves of Nanguneri range are examples of plain forests. These plain reserved forests
were originally protected with the object of meeting the demand of fuel and grazing to the
neighbouring villages and at the same time improving the stocking by artificial
regeneration.

The Kudiraimozhi teri reserve in Tirunelveli range is a large block of about
12,000 acres of land consisting of extensive sand dunes of red sand. The origin of these
red sands can be attributed to heavy and continuous gales which prevail from May to
September during the south-west monsoon season. These red sands deposited in teri
reserve are being continuously moved from place to place in the windy months.
Recognising the danger of these drifting sands, E.B. Thomas, the then Collector, initiated
the policy of encouraging ryots to plant trees in these regions in 1848. Later, with the
growth of trees, Kudiraimozhi teri was formed into a “forest reserve”. The slopes of many
of the dunes are studded with thousands of palmyras. Hence, it is known as “the Palmyra
forest”.

The whole area is traversed by a network of rivers and streams which serve as
feeders to the reservoirs and numerous irrigation tanks in the plains. All the catchment

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18 Ibid; Pate, Madras District Gazetteers: Tinnevelly, p.4.

19 Cariappa, Working Plan, p.1. The renewals of a forest crop by sowings, planting or
other artificial means is known as artificial regeneration.

20 Pate, Madras District Gazetteers: Tinnevelly, p. 16.
areas\textsuperscript{21} are in the safe hands of the ghat forests. The important rivers of the division are Deviar, Kottamalaier, Kulirattiari, Virusadikidaier, Palaiar, Hanmunathi, Karungalar, Chittar, Jambunathi, Ramanathi, Kalar-Karuniar, Koraier, Servaiar, Kariar, Thambaraparani and Manimuthar. The Thambaraparani, the chief river of the division, with its tributaries drains an area of 1750 square miles. Owing to its extensive catchment area in the ghats it enjoys the benefit of both the monsoons. It is seventy five miles long from its source at the Periyar Pothigai to its mouth in the Gulf of Mannar. Its chief tributaries in the hills are Peyar, Ullar, Kariar, Servaiar and Pambar; in the plains it is joined by the Manimuthar and its tributaries like Varattar and Kusanguliar. The area actually irrigated from Tambaraparani was 169549 acres. The large irrigating power of Tambaraparani river is mainly due to the forests.\textsuperscript{22}

It is worthy to note that the division has several reservoir projects, serving for irrigation as well as hydro-electric power. The Papanasam hydel project across the Thambaraparani situated in the heart of Ambasamudram range consists of two stages with a water spread of 2.24 square miles at the upper dam and of 0.35 square miles at the lower dam. The idea of a dam was conceived as early as in the 1830s by Col.A.T.Cotton and after a series of lulls, it was completed in 1947. The ferry services operated at the two reservoirs enabled one to take short cuts to reach the interior forests. The Manimuthar project constructed across the river Manimuthar is located at the place where the same river enters the plain. The scenic beauty of their surroundings, the engineering triumph of the works and the easy accessibility by excellent roads have made these forests and the places into a great picnic spots and tourist attractions.\textsuperscript{23}

\textsuperscript{21} The total area from which water collects in a given drainage area.

\textsuperscript{22} Brandis, \textit{Suggestions Regarding Forest Administration}, pp.75, 207 and 208.

The climate of this division on the plains and on the lower foot hills up to an elevation of 1000 to 1500 feet is generally hot and dry. The hottest months are April and May. Strong westerly and south westerly winds moderate the temperature and cool the division especially the places opposite to gaps such as Kuttalam, Sivasailam and Tirukarungudi. The hill camps of Sengalteri and Mudaliaruthu are delightful due to the increased elevation of 3150 feet and 4000 feet respectively and consequent lower temperature that prevails throughout the year.24

The division has the advantage of both the south-west and north-east monsoons. The peculiarity of the catchment area is that along the crest of the ghats the mean annual rainfall is as high as 200 inches. Though the fall is heaviest in the months from May to November, there has been rain in all months of the year at that elevation.25 The rainfall at the foot of the hills at Ambasamudram was thirty five inches and in Tenkasi thirty eight inches. The north-east monsoon is from October to December. The bulk of the rain is derived from the north-east monsoon whereas the southwest benefits only the interior forests and the forests opposite to the gaps.26

**Description of Forests**

The forests of Tirunelveli district are famous for their wide variation in their floristic composition. The vegetation varies from the thorny scrub jungle to the lush evergreen forests. Elevation, rainfall and the nature of the soil are the principal factors which control the types of forest growth in the district. The general soil conditions do not exhibit marked differences except in the narrow valleys and along the streams where the

24 Ibid., p.3.


alluvium supports a better type of vegetation than the surrounds. Elevation ranges from ninety feet to 5000 feet and areas of the same elevation on the higher reaches do not always support identically the same luxuriant growth. But one constant feature is that wherever the rainfall is at its best, the vegetation is at the best and wherever it is low the vegetation is also poor. Constant set backs due to fire, theft and over grazing maintain the vulnerable regions in a sub-normal condition.  

The forests in the Tirunelveli division are broadly classified into: The Southern Tropical Wet Evergreen Forests, Southern Tropical Moist Deciduous Forests, South Indian Dry Mixed Deciduous Forests, Carnatic Umbrella Thorn Forests, Southern Euphorbia Scrub and Ochlandra Reed Brakes.

**The Southern Tropical Wet Evergreen Forest**

This kind of forest is otherwise called a shola, the evergreen forest. It is the most highly developed ecological type of vegetation in the division. It is confined largely to the interior parts of Amabsamudram range and to a lesser extent to the upper reaches of the other ranges. It begins to appear at an elevation of 2000 feet in the interior ghats and extends up to about 4500 feet. Thereafter, it is deteriorating in quality, height and volume per acre to resemble a montane sub-tropical forest. The luxuriant growth reaches its zenith between 2500 and 3000 feet elevation, where the dominants of the top canopy attain a height up to 150 feet with straight boles of sixty to seventy feet and girths up to twelve feet and over at brest height. Outstanding in the midst of the sholas are vast stretches of pure reeds in the more moist interior.

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27 Ibid., p.9.

28 A forest composed mainly of trees the leaves of which persist at least for whole year so that it is never leafless.
These forests appear to live on the products of their own decay. The dense stand and the rich leaf fall so effectively cover and protect the soil from erosion. Even if there is a downpour for months together, one can not see anything but crystal clear run off water in these sholas. Another notable feature is that drainage is good throughout the forest except on flat hill tops, where the evergreen steps down in favour of reeds. Rocky and precipitous slopes are colonised by Bentinckia coddapanna, while moist semiswampy hollows are favoured by Arenga weightii below 3000 feet and Pinanga dicksonii above 3000 feet. The cool pleasant weather all through the year, the scenic beauty of the forests and the steady songs of the various birds make this place a most enchanting part of the world. The temperature oscillates between sixty five Fahrenheit and eighty Fahrenheit with a high humidity. The average annual rainfall varies from 150 to 200 inches. Only three months receives less than two inches rain. Unlike the Ambasamudram range, the sholas in Kuttalam range are generally poor in quality and exploitable species. The poorest type of shola forest is found in Sivagiri hills where it appears at 3500 feet and rapidly deteriorates above 4000 feet.

The principal species of the top storey are: Cullenia excelsa, Mesua ferrea, Palaquium ellipticum, Gluta travancorica, Hopea parviflora and so on. Species constituting the second storey are: Myristica malabarica, Garcinia cambogia, Garcinia travancorica, Garcinia morella and so on. The under growth consists principally of the following species: Calamus pseudoienuis, Laportea crenuata, Balanophorus sp, Vallaris sp, Ochlandra sp and so on.
Some of the cosmopolitan species in the sholas are *Cullenia excelsa*, *Elaeocarpus serratus* and *Artocarpus integrifolia* of which *Cullenia excelsa* attains a height of 120 feet of elevations of 2000 to 3500 and deteriorates to about forty feet at elevations of 4500 and over. Within the general range of distribution, one can find local variations and preponderance of certain species in some localities.  

**Southern Tropical Moist Deciduous Forests**

These are the most highly paying forests of the division. It is confined to those of Puliyara, Vadagaraimelpidagai, Kuttalam, Kodamadi and Kariar with an elevation of 500 to 1000 feet and an annual rainfall of sixty to eighty inches from both monsoons. A dry season of four to five months in the year is a characteristic feature. Trees are generally leafless from February to May. On the upper limits it merges with the evergreens and in the lower limits it blends with dry deciduous type. The original stand is a good high forest in which the dominants attain a height of sixty to eighty five feet. The undergrowth consists mainly of evergreen species. The principal species are: *Balanocarpus utilis*, *Stereospermum*, *chelonoides*, *Terminalia paniculata*, *Terminalia bellerica*, *Teak*, *Cureta arborea*, *Melia dubia* and *Alstonia scholaris*. The understorey is formed by the following species: *Bauhinia racemosa*, *Cassia fistula*, *Ficus hispida*, *Cycas cireinalis*, *Kydia calycina* and so on. The species forming the undergrowth are: *Clerodendron infortunatum*, *Hibiscus lampas*, *Lantana camera*, *Strobilanthes sp* and grasses.

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30 A forest composed of trees which are leafless for sometime during the year.

South Indian Dry Mixed Deciduous Forests

This occurs along the foot hills and outermost slopes up to an elevation of 600 feet. Soil is extremely hard and shallow with numerous rocky and bouldery outcrops. Due to their proximity to the village, heavy grazing, frequent fires and theft are traditional feature. Added, most of the fuel coupes are located in this zone. The annual rainfall is about thirty to fifty inches, chiefly by the north-east monsoon. As this monsoon is seldom regular the trees are leafless for half the year exposing the ground to a scorching sun. In moist depressions, valleys and along river banks growth is good. Growing season is short and with the poor food material they do not attain great size; general height of trees is about thirty feet. Species of the top canopy are: *Pterocarpus marsupium*, *Tamarindus indica*, *Albizzia amara* and *Acacia suma*. The underwood is formed by the following species: *Mallotus philippinensis*, *Webera corymbosa*, *Capparis sp* and so on. In the foot hills of Sivagiri and Mundanthurai which fall under this type of forest grows a stunted variety of teak which attains a maximum height of twenty feet and six inches diameter at brest height. Coppice shoots of this teak attain this height in four or five years and thereafter stagnate.\(^{32}\)

Carnatic Umbrella Thorn Forests

Otherwise called as scrub jungle, the Carnatic Umbrella Thorn Forests are confined to the plains in which lie the forests of Uthumalai, Kottamalai, Vellakalparambu, Mayamankurichi, Sivalarkulam and the low undulating hills of Nanguneri range. Soil is very shallow, hard and gravelly with a mixture of quartzite. The annual rainfall of twenty to twenty five inches derived from the north-east monsoon is poured down in a few rainy days leaving almost a period of ten months without rain. Forest is very open, trees do not reach more than ten to fifteen feet in height and develop

\(^{32}\) Ibid., pp.15-16; Playne, *Southern India*, p.722.
short stems and low branching crowns. *Acacia latronum, Acacia planifrons, Albizia amara, Cuscuta sp, Dodonea viscosa* and so on are the principal species found in the forests.33

**Southern Euphorbia Scrub**

This is an extremely degraded type of forest seen in pockets along the fringes of the Carnatic Ambrella Thorn Forests and also in Manpothai reserve in Ambasamudram range. No tree growth worth the name exists. The vegetation comprises mostly *Euphorbia antiquorum*.34

**Ochlandra Reed Brakes**

Near the summit of hills above wet evergreen shola forests and along the higher slopes of the various mountain ranges, 1000 meter and above extensive areas are covered with reed, *Ochlandra brandissii* and *Ochlandra travancorica*. In the lower elevations below 800 meter along stream and river banks grow *Ochlandra rheedii*. Now these reed brakes have dwindled because of the exploitation which is not adequately supplemented by natural regeneration.35

**System of Management Prior to 1950**

From the available sources, it seems that the Indian rulers did not take any serious measures to conserve the forest resources of the district. Even after the assumption of the district by the British, the forests attracted little attention from the Government.36

33 Rajasingh, Working Plan, pp.16-17.


35 Ibid., p. 48. The renewal of a forest crop by self-sown seed or by stool or root shoots is known as natural regeneration.

36 Pate, Madras District Gazetteers : Tinnevelly, p. 195.
Cultivation was confined to the fertile river valleys. The only attempt at conservation which deserved mention was the tree tax. Palmyra and some thirty eight kinds of trees including teak, rose wood, mango, jack and the like enjoyed the dignity of taxation from very early times. At the beginning of the Company’s rule, the Government collected over a lakh of rupees as palmyra tax and about Rs.27,000 from other trees. The Government reserved the full right to the timber of these trees, only the usufruct of the tree being utilisable by pattadar.37

Thus, it seems that for years, the forests attracted little attention from the colonial Government. For the first few decades nothing was done either to protect or to improve the forests. At that time, there seemed to be plenty of it and the conversion of large parts into cultivable land was most desirable. There were no restrictions on grazing cattle or felling trees or even burning the forest’s growth. From the earliest times, people were given the unfettered privilege to cut wood for making agricultural implements and fuel not exceeding a head load at a time for domestic consumption. Timber extracted was taxed but in the absence of any control or supervision, it was easily evaded. However, minor forest produce and non-valuable timber for house building and fuel fetched a small amount of revenue as ‘hill rents’.38 In the periodical leases, the Government failed to define ‘valuable trees’. As a result, the renters under Government not only habitually felled valuable trees but even claimed the sole prescriptive right too. But this evil system was suppressed in 1842 when Sir H.Montgomery, the then Collector notified a list of ‘valuable’ trees and prohibited their removal without the permission of Tahsildars on

37 Cariappa, Working Plan, p.36.

38 Hill-rents were discontinued from 1854 under the orders of the Government. At the same time, the renter’s privileges of felling other than valuable trees for firewood and domestic purposes was extended to all classes of the population. Cariappa, Working Plan, p.37.
payment of their value at fixed rates. However, this general licence, in the absence of adequate supervision resulted in the rapid destruction of the plain forests and the more accessible ghat forests during the course of fifty years. This at last caught the attention of the Board of Revenue and it felt the necessity for a special conservancy staff.\textsuperscript{39}

**The Jungle Conservancy Period (1854 - 1866)**

Preventing the unrestricted felling of trees, conserving the more valuable trees from the danger of extinction and exploiting the forest under a uniform set of rules throughout the presidency induced the Board of Revenue to issue a circular in 1860 which consisted of a simple set of rules called the Jungle Conservancy Rules.\textsuperscript{40} According to this, wood for agricultural implements, house construction and fuel for domestic use and bamboos for bona fide domestic use were free and could be taken from areas set apart for that purpose. No fruit trees nor any timber trees exceeding three feet in circumference at two feet from ground level nor any reserved trees\textsuperscript{41} could be felled without the permission of officers in charge. Fuel or timbers for sale could be extracted after paying the prescribed seigniorage fee.\textsuperscript{42}


\textsuperscript{40} Board of Revenue, Circular No.5497 of 1860.

\textsuperscript{41} The trees reserved for the value of their wood were Ebony, Satinwood, teak, rosewood, palmyra, jack, *Artocarpus hirsuta*, *Terminalia becherica*, *Terminalia paniculata*, *Acacia arabica*, *Albizia lebbeck*, *Acacia catechu* and *Hardwickia binata*. The trees reserved for the value of their products were *Anona squamosa*, *Psidium guava*, *Sapindus emarginatus*, *Bassia latifolia*, *Anacardium occidentale*, *Acacia concina*, *Tamarindus indicus*, *Calophyllum inophyllum*, *Strychnes potatorum* and *Mallotus philippinensis*. Cariappa, *Working Plan*, p.37.

\textsuperscript{42} On fuel and bamboos cut for sale, a seigniorage fee of five annas per cart load, one anna per bullock load and three paise per head load was to be levied. On timber cut for sale, a seigniorage fee of one rupee per cart load was to be paid. Cariappa, *Working Plan*, p.37.
Charcol burners could fell trees only in such places as were assigned to them and were prohibited from felling reserved trees. A seigniorage of one anna per basket of one piled para was to be charged. The village headman was in charge of the collection of revenue and he had to receive a commission of twenty per cent of the revenue collected. Any misappropriation on his part was made punishable under Regulation IX of 1822. Unauthorised cutting and evading to pay the seigniorage fees were made punishable under the (Fraud and Tresspass) provisions of the Indian Penal Code. The tax realised from these sources was kept as Jungle Conservancy Fund. It should be spent on raising fuel plantations close to villages with the object of meeting eventual scarcity of fuel. The Collector was given the liberty of administering the fund.43 It was the humble beginning of forest conservancy in the Tirunelveli district.

The task of collecting the tax and supervising removals soon provided too much for village establishments. Therefore, a special conservancy establishment consisting of a supervisor and two peons were appointed for each taluk.44 The ‘license and voucher’ system45 served as a slight check on the extensive denudation46 of the tree growth. The scheme did not work well because many of the good timber species were not included in the list of ‘reserved’ trees. As a result they were felled and removed. The effort to form village plantations was a total failure partly due to the insufficiency of funds and poor knowledge of planting technique and chiefly due to the apathy and the utter indifference of the people. Again, the entire work of collecting the seigniorage fees was entrusted to the village headman, who was in receipt of an outrageous commission on the revenue

45 The rules regarding valuable or classed trees were later known as license and voucher system.
46 The laying bare of soil by the removal of vegetative covering to such an extent that erosion is likely to occur.
collected which in due course proved wholly ineffectual to prevent the rapid destruction of the plain forests and even of the more accessible ghat forests.\textsuperscript{47}

During the period, another factor contributing to the destruction of forests in the hills was the large scale and somewhat indiscriminate clearings for planting coffee. Between 1795 and 1800, the Commercial Resident of the East India Company imported nutmegs, cloves, cinnamom and species of all kinds from the Molaccas and introduced them on the Kuttalam hills. The gardens bore fruit in 1813. The quality did not compare well and the profit was very little. Later, coffee, tea and cocoa were cultivated. The expenditure on these gardens invariably exceeded the receipts. As a result, all the gardens, with the exception of one Pappuli which was handed over to Travancore, were sold in 1853 for Rs.9841 and the Government saved an expenditure of Rs.3000 a year. When the purchasers found the estates unremunerative, they surrendered them back to the forest department. However, some estates like Udetam estate, Unjalkatti estate, Ramakkaliteri estate, Terkkumalai estate, Parathesipudai estate, Kuliratti estate and spice gardens totalling 730.63 acres survived, cultivating fruits, spices, plantain, jack, mangosteens, nutmegs and coffee.\textsuperscript{48} About 1840, a number of small coffee estates were introduced in the Nanguneri hills. The competition of Travancore coffee, leaf disease and the unsuitability of the locality for coffee ruined the enterprise. These attempts at coffee planting in the hills were responsible for the destruction of a considerable area of dense shola forest in Nanguneri and Tenkasi taluks.\textsuperscript{49} Some European coffee planters demanded a block of 500 acres evergreen forests near Kannikatty, but MacGregor, the


\textsuperscript{48} Balakathiresan, Working Plan, pp.115-16.

\textsuperscript{49} Kadakshamani, Working Plan, p.57.
then Sub-Collector of Shermadevi prevented it in the interests of the river system in 1865.\textsuperscript{50}

**Beginnings of Conservation, 1864 - 1882**

Meanwhile, the Government seriously realised the importance of forest conservation on a scientific basis. Therefore, in 1864 captain Beddome was sent to Tirunelveli district to advise the Collector on forest matters and to constitute the jurisdictions of the newly created Special Department in charge of forests.\textsuperscript{51} This move created a stir among the zamindars and mutts. Records reveal the fact that not less than ten zamindars claimed various parts of ghats, amounting in all to about half the forest area of the Tirunelveli division.\textsuperscript{52} Therefore all activities had to be restricted only to the undisputed forests.

The ghat forests of Papanasam together with the resumed forest of Alwarkurichi extending northward to Kuttalam were brought under the conservancy rules and they were placed under the charge of a daffadar and three peons under the direct supervision of the Sub-Collector of Shermadevi. While the forests north of Kuttalam, Vasudevanallur and Watrap forests over which no private rights were asserted and were placed under the control of an overseer of the Special Department. This arrangement was a failure. The revenue officers had no time to undertake forest work. The overseer, who was also

\textsuperscript{50} Pate, *Madras District Gazetteers: Tinnevelly*, p. 196.


\textsuperscript{52} The Tirukurangudi mutt claimed the Kalakad forests. The main claim of the mutt was rejected at the Forest Settlement. The mutt carried the case to the High Court. The Court gave its final decision only in 1909 and it was in favour of Government. A valuable tract of jungle to the west of Ambasamudram taluk was claimed as Kaval maniyam by the Kavalgars of Alwarkurichi. The claim was rejected and Government took possession of the forest. Pate, *Madras District Gazetteers: Tinnevelly*, p.196.
incharge of the Madurai forests division found it too difficult to supervise the Tirunelveli division. Hence, R.K.Puckle, the then Collector of Tirunelveli declared that the only remedy was to hand over the complete charge of ghat forests to the Special Department and this was done in 1866. Consequently Captain Fullerton was appointed as the first District Forest Officer in charge of the Special Department.\(^5\)

The problem of the private forests in Tirunelveli division remained unsolved. The claim most antagonistic to the new reservation policy of Government was that of the Singampatti zamindar. The Singamapatti forests commanded the upper reaches of the Tambararaparani and a number of the affluents of this important river. The Government, in order to take over the Singampatti zamin forests, found several alternatives: to take the forests either on lease or to resort to litigation and to acquire the property under the Land Acquisition Act. Finally, the Government filed a claim in the High Court to the Singampatti forests. However, the zamindar was successful in establishing all his claims in the High Court and this decision was finally confirmed by the Privy Council too. In spite of the best efforts of the Government, this valuable catchment area was lost to the forest department. As a result, the Government did not show interest in the other zamin forests such as Chokkampatti, Sivagiri, Vairavakulam and Thirumalainaickan Pudukkudi as they did not affect the river system.\(^4\)

The existence of these zamindars formed a great obstacle to the practical management of the forests in the district. Owing to the laxity of supervision prevalent in zamin forests, the occurrence of fire was a common phenomenon which was a menace to the adjacent Government forests. Moreover, over grazing, unrestricted cutting and


\(^4\) Ibid., p.40.
cleaning were some of the other obstacles. During 1952 these forests were taken over by the Government under Estates Abolition Act of 1948.55

Puckle is the pioneer of organising the Forest Department in Tirunelveli district. He was the man who had foreseen the importance of the catchment areas of rivers for irrigation. He also pointed out the ill effects brought about by clearing the ghat forests in the name of coffee, tea and spice gardens. He wrote, “the prosperity of the river irrigated section of Tirunelveli, extending through five taluks, from the western ghats to the sea, is dependent on a continuous flow of water in the rivers that rise on the western ghats. Now this continuous flow has notably decreased of late years and the decrease commenced with the destruction of much of the forest that formerly clothed the ghats and protected the heads of the streams; the rich shola land in the rivers down which the streams descend attracted coffee planters who destroyed the magnificent timber and thus let in the wind which has extended the mischief done by the axe. Thousands of trees lie prostrate and the coffee gardens ... are mostly windblown and useless. Where the ground was once moist continuously, it is now parched and dry and the courses of the numerous little rivulets that once fed the larger streams are now mere rocky nullahs, without a drop of water in them.” Moreover he said “the mischief, however, done so far cannot now be repaired, but what we can do is to conserve the remaining forest more carefully .... The people themselves are unanimous in their wish for conservancy as even at the foot of the hills they now begin to suffer and lower down the streams there is always an outcry for water.”56 He, therefore, prescribed the issue of licence to cut timber. He forbad cultivation on the hills except coffee, charcoal burning in the forests, restricted grazing


56 Letter, R.K.Puckle to the Conservator of Forests, 30 Sept. 1867.
and the cutting of fuel by ryots to certain limits defined separately for each village. In this respect he did not initiate a new line of policy. He followed the policy of his predecessors like Bird, Eden, Montgomery and Thomas. They prohibited dry cultivation on the slopes of the hills since 1837, because the clearing of forests rendered the mountains bare of trees. It also prevented the clouds from descending on the hills during the monsoons, resulting in scarcity of rain.\(^\text{57}\) Captain Beddome felt that these prohibitions endangered forest revenue and preferred a system of regulated felling. The Government fully supported the action of Puckle. In 1869, Beddome revisited the Tirunelveli division and reported that “the best efforts of everyone had failed to secure anything that might properly be called conservation.”\(^\text{58}\)

With the progress of conservation, the demand for fuel and small timber increased. In order to relieve the pressure on the ghat forest, a scheme for the development and reservation of tree growth in the plains was taken up in 1871. The immediate object was to supply fuel to the South Indian Railway. The efforts were started in five blocks of waste land around Palayamkottai. The project failed due to the lack of knowledge of silviculture\(^\text{59}\) and it was abandoned.\(^\text{60}\)

\(^{57}\) Brandis, *Suggestions Regarding Forest Administration*, p.209.


\(^{59}\) Silviculture refers to certain aspects of theory and practice of raising forest crops; methods of raising tree crops, their growth and after-care upto the time of final harvesting. Silvicultural system is the process by which the crops constituting a forest are tended, removed and replayed by new crops, resulting in the production of woods of a distinctive form.

\(^{60}\) Pate, *Madras District Gazetteers : Tinnevelly*, p.199.
Tank-Beds

Subsequently, attention was concentrated on the various tank-beds of the district containing good natural growth of *Acacia arabica*, *Prosopis speigera* and *Acacia planifrons*. In 1876, the total extent of growth was about 18,500 acres. The tank-beds were divided into five circles and put under the charge of Lowry, Sub Assistant Conservator of Forests. This was found too expensive and he was soon replaced by a Forest Ranger. Between 1871 and 1881, the annual revenue from the reserve was Rs.15,534 whereas the expenditure was Rs.21,511. However, from the beginning there was a lot of difference between the forest authorities and the revenue officials with reference to restriction over grazing and felling timber for agricultural implements. As a result, the reserves were constantly shifted from forest management to that of Jungle Conservancy with the result, as Beddome points out, “cattle were allowed to graze indiscriminately and it was found impossible even to exclude goats”. In 1878, the Conservator of Forests proposed that these reserves should be transferred to the Revenue or Public Works Department. Based on his suggestion, the Government transferred all these reserves to the Revenue department in 1881-1882. During the following years, these reserves scattered throughout the division were worked by a Thasildar assisted by a forest subordinate staff and village officials. It was also not satisfactory. Therefore, in 1887, the Government ordered that the management of tank-beds should be exercised through the forest branch of the Collector’s office. But the Government put a condition that the forest officer “should not interfere where the trees on tank-beds were few in

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number". As a result, these tank-beds came under the complete control and supervision of revenue officers.

The dual control of the tank-beds, the direction by the forest officer and the execution by the revenue establishment, proved most unsatisfactory. In 1887, Brasier, the District Forest Officer, issued certain regulations for the management of these areas. But no definite scheme was prepared on the lines suggested by Brasier and subsequently supervisors were left largely to their own devices. The Tahsildar complained to the Collector that “forest officers were interfering with the immemorial rights and privileges of the people.” In 1896, it was realised that these reserves should be constituted into ‘reserve’ forests. Since all of these reserves were below a square mile in extent and scattered all over the division, it seemed inadmissible from the point of view of supervision and expense. So the management of these areas remained with the Revenue department. The District Forest Officer was rarely consulted only on professional matters.

The revenue exploited was more than the output. The total revenue collected during the period from 1885-86 to 1895-96 was Rs.1,63,216. The annual yield was

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64 G.O.No.719, Revenue, 25 July 1887.

65 Attempts were made by the Forest Department to constitute the tank-beds into reserve forest but protests from the people and the Revenue Department put an end to the proposal.

66 The regulations were : 1. The felling should be conducted over a portion of a tank if it was a large one with many trees, but over the whole if small. 2. About twenty five of the soundest trees should be retained per acre as seed bearers. Such trees being marked and numbered serially. 3. The other trees in the area above one foot girth at brest height should also be counted and marked at the base so as to distinguish stumps sanctioned for sale when the trees were felled. 4. All areas felled over should be rigidly closed to grazing. 5. All area was to be considered ripe for felling if the majority of the trees were over six year old. Cariappa, Working Plan, p.41.


Rs.15,000 approximately. The revenue from the tank-beds for the period 1885-86 to 1895-96 were given below:

<table>
<thead>
<tr>
<th>Year</th>
<th>From trees (Rupees)</th>
<th>From pods (Rupees)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1885 – 86</td>
<td>5374</td>
<td>2236</td>
</tr>
<tr>
<td>1886 – 87</td>
<td>4372</td>
<td>4211</td>
</tr>
<tr>
<td>1887 – 88</td>
<td>5945</td>
<td>4577</td>
</tr>
<tr>
<td>1888 – 89</td>
<td>12607</td>
<td>2714</td>
</tr>
<tr>
<td>1889 – 90</td>
<td>5556</td>
<td>4375</td>
</tr>
<tr>
<td>1890 – 91</td>
<td>18631</td>
<td>4012</td>
</tr>
<tr>
<td>1891 – 92</td>
<td>18092</td>
<td>2354</td>
</tr>
<tr>
<td>1892 – 93</td>
<td>17551</td>
<td>2375</td>
</tr>
<tr>
<td>1893 – 94</td>
<td>19841</td>
<td>99</td>
</tr>
<tr>
<td>1894 – 95</td>
<td>14382</td>
<td>4336</td>
</tr>
<tr>
<td>1895 – 96</td>
<td>2402</td>
<td>6094</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,24,853</strong></td>
<td><strong>38,363</strong></td>
</tr>
</tbody>
</table>

The Government ordered all revenue derived from tank-beds to be credited to Forest department and not to Land Revenue. Thus, the claim of forest department on trees in tank-beds was indirectly recognised. However, after 1896, the average annual revenue had sunk low, that is a little over Rs.1000, because of the poorer management.

The Forest Committee 1878

In the ghat forest, the old system of allowing ryots to take free fuel and small timber and to graze their cattle with the permission of Tahsildar was in vogue. In course of time, this arrangement deteriorated, illicit felling continued in the absence of any definite law on the subject and prosecutions very seldom secured convictions.

69 Cariappa, Working Plan, p.41.

70 G.O.No.260, Revenue, 2 Mar. 1885.

71 Cariappa, Working Plan, p.42.
To overcome this, Puckle cut a boundary line\textsuperscript{72} between the lower slopes and the rest of the forests in Tenkasi taluk. All the areas below the line were considered as “village forests” or communal forests and opened to free felling and grazing. Above the line, free removals were prohibited, grazing excluded and fire kept out. This area was a ‘reserved forest’ and this tract showed such a marked improvement. Even though the Government supported this scheme of separation of ‘communal’ and ‘reserved forests’, it was not extended to the other taluks of the division immediately.\textsuperscript{73}

It was largely owing to Colonel Beddome’s and Pennington’s efforts, that conservation of a permanent character was introduced in the district. In 1878, Beddome, the then Conservator of Forests, reported to Government, “The district had a rude example of what a flood can do, on the 18 of December 1877. I understand that the damage to bridges, roads and tanks is not less than 1.5 lakhs of rupees, besides the damage to crops and salt. It would be a bold assertion to say that the comparatively small felling which has already taken place added much to the volume of flood; but I visited the track to see the effects and have no hesitation in saying that to a certain degree its intensity must have been increased. The splendid leaf canopy of the evergreen forest is so dense that it rains for some minutes before any drops come through and then it comes down so lightly that it is soaked up by the soft humus and debris that forms the upper stratum of the surface soil. Where the trees are felled and burnt for coffee cultivation much of this humus is burnt and the rest is swept down by the forest heavy rains; after this whenever there is violent rain, it rushes down the sides of mountains forming numerous sluices where none existed before. If the rest of the Kattalaimalai estate is felled, I anticipated serious results and if it is not too late to interfere, I believe it would be

\textsuperscript{72} This boundary line was called as “cairns line”.

a good policy to pay a large sum to save the remainder from destruction. The Singampatti forests are threatened and I believe doomed, if Government don’t interfere. If it or any great portion of it is felled, it will be an act of vandalism that will be bitterly resented when it is too late and it will be impossible to say what ruin it will not bring on the Tirunelveli district.”

Pennington, the then Collector, in forwarding the report wrote, “the report appears to me to be absolutely conclusive as to the very urgent necessity for immediate action if the magnificent irrigation system of the Tambaraparni is not to be utterly destroyed. It is a matter of immediate necessity that we should secure the control of the Kattalaimalai estate and ultimately of the Singampatti forest. I am satisfied that the delay that has occurred has already been the cause of incalculable damage and if nothing is done soon, it will not be long before the ruin of the river valley will have been completed and we shall have to write ‘too late’ on our forest legislation in Tirunelveli.”

The Board of Revenue strongly supported the views of Beddome and Pennington and pointed out that cultivators paying a revenue of fifteen lakh rupees should be safeguarded immediately. It strongly urged the Government to arm itself with full powers to act when necessity arose by passing of a Forest Act.

As a result, a committee consisting of Colonel Campbell Walker, Hayne, the District Forest Officers and Pennington, the Collector, was constituted in 1878 to go into the question of reservation and to advise generally on future forest policy in the division.

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74  G.O.No.1500, Revenue, 13 Sept.1878.

75  Ibid.

76  Proceedings, Board of Revenue, No.1239, 9 May 1878.
The committee’s recommendations were

1) Puckle’s principle of ‘cairns line’ demarcating village forests and reserve forests should be extended to the entire district;

2) Out of the total forest area of 559.19 square miles in the district, 286.81 square miles should be constituted into reserve forests and divided into seven blocks;

3) No fresh pattas were to be granted in the ghat forests;

4) Pasture to be permitted only on payment;

5) Control over private forests should be exercised for their conservation and

6) Small portions of the communal forests were to be closed to grazing for reproduction and improvement and free grazing should be regulated by Collector and District Forest Officer.

The Government accepted the recommendations of the committee but nothing was done until the Madras Forest Act was passed in 1882.77

Sir Dietrich Brandis Visit

Brandis, the Inspector General of Forests, visited the division in February 1882.78 His visit was a landmark in the forest history of Tirunelveli. His voluminous report outlined the future forest policy. He summarised the objects of forest conservation in the Tirunelveli district as follows: First, the protection of the ghat forests in order to secure water resources of Tambraparni, Vaippar and other rivers upon which the irrigation and the prosperity of the district depended. Secondly, the maintenance of the fuel supply and

77 Srinivasan, Working Plan, p.46.

78 Brandis, Suggestions Regarding Forest Administration, p.205.
the increase of fodder during drought seasons for the towns and villages and improvement of waste lands.\textsuperscript{79} He recommended that a) no more land need to be alienated on the ghats for coffee or any other cultivation. The benefit derived from such cultivation would be insignificant as compared with the damage that would be done. b) the whole area above the outer line laid down by the Revenue survey as the limit of cultivable land should be reserved under the Forest Act without allowing any such thing as ‘village forest’. This would safeguard the interests of irrigation in the plains. Further, a forest boundary halfway up the hills would be difficult to select and maintain and would render protection from illicit removals almost impossible. c) Requirements of villagers adjoining the forests should be met from waste lands within revenue survey limits. If this was not possible, small timber for agricultural implements, fuel and grazing facilities should be made available from the restricted areas outside the blocks that were fire-protected. d) the degenerated state of the forests was attributed to annual fires rather than excessive felling. With the object of preventing fires, he advocated that the assistance of persons who graze cattle in the reserve should be secured, shifting cultivation\textsuperscript{80} carried out by the hill tribes\textsuperscript{81} should be regulated, fire lines should be cleared and burnt round selected blocks of the more valuable forests, private enclosures in the reserves should be clearly

\textsuperscript{79} Ibid., p.206.

\textsuperscript{80} A technique in which an area of forest is felled and burned. Crops grown on the cleared land for two or three years and when the land shows signs of loss of vigour, the cultivators move on to another spot and repeat the process of clearing, burning and planting. The result is that the forest never reestablish itself properly and the area is invaded by useless weeds and shrubs which degrade rather than restore the site.

\textsuperscript{81} The hill tribes of the ghats are a few Paliyans and Kanis. The Paliyans confined themselves to the hills overlooking the Sankarankoil taluk. The Kanis settled in the regions of Kannikatty and the Singampatti forests.
demarcated and the owners compelled to keep them clear under chapter IV of the Forest Act and finally an establishment of fire watchers, mostly from the hill tribes should be organised and they should be paid according to the success in protecting the areas assigned to them.⁸²

He estimated an annual income of Rs.32,000 while the expenditure was Rs.40,000 in the ghat forests, while for the plain forests, including the lands hither to under Jungle Conservancy the revenue was Rs.10,000 while the expenditure was Rs.12,000.⁸³ In this connection he quoted Puckle and said “the Forest department in this district should not be judged entirely or chiefly by financial results. The great work of the department is to preserve the sources of streams on which the prosperity of the district depends....”⁸⁴

**The period of Organisation (1882-1887)**

The Madras Forest Act became law in 1882 and between 1882 and 1890 most of the regular forest areas were demarcated, settled and notified as reserved forests. During 1882-86, after the visit of Brandis, the work of the staff consisted mainly in the organisation and distribution of establishments, fire protection of selected blocks and collection of revenue to meet the expenditure. The Kalakad, Padarmalai and Koilteri felling series were the first to come under ‘special protection’. All extraction and removal was done under ‘licence and voucher system’ for which permit gumastas, checking stations, additional watchers and forest guards were employed to control and


supervise removals. In 1884, Cherry realised the unwieldy nature of this permit system. He ordered that removal could be made only from localised areas, that is the tracts being marked off for the purpose and that other areas should be placed under special protection for future working. He pointed out that such specially protected areas were to be worked under selection felling by compartments and sub-compartments. All mature and badly grown trees of all species were extracted and the natural regeneration of the better species were carefully tended. Valuation surveys of the crop were ordered to be made. The maps prepared by the Forest Committee contained no topographical details. They were corrected. The Timber Transit Rules were drafted and made applicable to the ghat forests.”

Method of Working

In 1886, Campbell Walker again condemned the ‘license and voucher’ system. He reported that under it “hundreds of men enter the forest daily, cut under no regulation, do infinite damage and numerous issuing and recovering officers have to be employed to collect the fees, which they supplement by petty extractions on their own account”. Thus, the need for departmental working or working through responsible contractors began to be keenly felt. In 1888, Walker reported that unrestricted entry and felling on permits had ceased and been replaced by regular felling under departmental supervision. Even persons permitted to remove head loads of dead wood being required to remove them from the annual coupes. This was a vast stride in the right direction. The first annual coupe of

85 Cariappa, Working Plan, p.45.

thirty acres felled departmentally under a coppice with standard\textsuperscript{87} in 1886-87 in the Kuttalam reserve resulted in a loss of seven rupees per acre. Silviculturally the system was successful, as the one year old coppice was over six feet and the ground was carpeted with seedlings.

The weakness of the method was that the areas selected were scattered and hence difficult to control and the best growth was always being felled.\textsuperscript{88} And with a view to improving the evergreen and semievergreen forests of Ambasamudram, all hollow and over mature trees of \textit{Hopea} and \textit{Balanocarpus} were extracted at the rate of 6000 cubic feet a year. Because of conversion by axe the wastage was high as fifty per cent. This was promptly converted into charcoal leaving a cleaned up forest and yielding a handsome revenue.\textsuperscript{89}

The success of the departmental working of the coppice with standard coupes soon encouraged contractors to come forward to undertake the whole work of extraction and sale of the produce. In 1889, Brasier introduced the system of selling the produce standing and accepted even low prices to encourage contractors. In 1891, the principle of working areas for sustained yield was introduced.\textsuperscript{90}

\textsuperscript{87} The method of treatment is known as “Coppice with standard.” Not less than twenty nor more than twenty five trees of the better species are prescribed to be retained as standards. The standard trees was carefully marked and recorded before any felling was allowed. They were retained with a view to giving shade and seed and also timber of larger dimensions than could be obtained from the coppice during a single rotation. The period of rotation usually adopted was twenty five years but varied according to the quality of the forest. Cariappa, \textit{Working Plan}, pp.54-56.

\textsuperscript{88} Srinivasan, \textit{Working Plan}, p.47.

\textsuperscript{89} Cariappa, \textit{Working Plan}, pp.45-46.

\textsuperscript{90} \textit{Ibid.}, p.46.
The Working Plan Era

In 1895, the Padarmalai working circle,\(^{91}\) the first working plan,\(^{92}\) for 3046 acres was prepared and sanctioned. The next decade saw a regular state of similar working plans covering the greater part of the workable area of the forest.\(^{93}\) The main objects of the working plans were:

1) to define the water sources that were to be strictly protected;

2) to regularise the exploitation of timber in the evergreen and higher semi-deciduous forests;

3) to control grazing;

4) to build roads and buildings with a view to the future development of the forests and

5) to supply the neighboring population with small timber, fuel and charcoal.

\(^{91}\) A block varying in size from a few hundred to six thousand acres is formed into a working circle which is again sub-divided into coupes. A coupe is the area of forest set aside to be felled in a single year.

\(^{92}\) A working plan is a written arrangement sanctioned by the Chief Conservator of Forests for the systematic treatment of forest. The object is to ensure continuity of action of officers in charge and also provide against the deterioration and for the improvement of the capital while working out what represents the interest in an orderly, useful and economic manner. A working plan officer who is responsible for drawing up or revising a working plan shall work under the instructions of the Chief Conservator of Forests. A working plan shall contain name of the division, configuration of the ground, geology, rock and soil, climate, water supply, distribution and area, state of the boundaries, legal position, rights and concessions, the forest, utilisation of the produce, staff and labour supply, past system of management, statistics of growth and yield, future management proposals, working plan for working circles, miscellaneous regulations, financial forecast and cost of plan.

\(^{93}\) Rajasingh, Working Plan, p.41. In 1916, there were twenty eight working circles, nineteen for the ghats, three for the detached hills of the Ambasamudram taluk and six for the forests of the plains. The unreserved lands were classed in nine series and were worked under a somewhat similar system. Pate, Madras District Gazetteers: Tinnevelly, p.201.
With the object of preserving the catchment areas of the more important rivers and streams, the officials defined the boundaries of the higher reaches, prohibited both felling and grazing so as to enable the shola and semi-deciduous forests to extend themselves. The more accessible and exploitable evergreen and semi-deciduous forests were worked under a selection system with a felling cycle of six years, at one tree per acre. The exploitable girth for Vitex altissima was fixed as six feet and over while for the other species 4.5 feet and over. The trees were sold standing for a lump sum. As regards working in the deciduous forests, the system varied according to circumstance. In the Ambasamudram range, departmental felling was persevered, the produce was sold in lots, the smaller fuel was removed on the permit system on payment of seigniorage and the balance well heaped and burnt. In Sivasailam, the coupe was sold to a contractor. In Kuttalam, departmental working was going on but the felled produce was sold to a contractor by tender. In Nanguneri, the permit system alone was in use. None of the working plans, however, anticipated the necessity for supplementing natural regeneration by artificial means, although all coupes felled were closed to graze for the first six years.\[94\]

By 1915, many of the original working plans expired and new working plans for hitherto unworked areas had to be prepared. As early as 1915, the Government decided to appoint a working plan officer but owing to the First World War and the consequent shortage of officers, no officer could be spared till 1917. On 6 September 1917, the Government appointed J.C. Robinson as working plan officer but transferred him on 4 February 1919 before he completed his work. The work was subsequently ordered to be taken up by the District Forest Officer, but for various reasons it was shelved until 1924. In 1924, George Venugopal, the District Forest Officer, prepared a working plan.

but it did not get the sanction of the Chief Conservator of Forests as it was found defective in parts. He, however, approved it as a temporary scheme for three years. Again nothing was done till 1930 when B.J. Singh, then District Forest Officer, prepared the working plan. Since this also did not get the Chief Conservator’s sanction, E.A. Lasrado was appointed as working plan officer on 22 November 1931. He prepared a ten-year plan. However, the Chief Conservator of Forests ordered the extension of the period of Lasrado’s plan till a revised plan came into existence.\(^95\)

**Working the Evergreen Forests**

In the Tirunelveli division, the earliest working of the evergreen forests was taken up in 1886 after carrying out some sample surveys in the sholas of Ambasamudram range in 1883. Similar work was carried on in the sholas in Nanguneri range from 1897 to 1901. The method adopted was to allow a contractor to fell principally *Mesua ferrea*, *Palaquinum elipticum* and convert them into small scantlings which could be brought down to the plains. The contractor paid on the quantity of timber that he actually removed to the depot in the plains. In the absence of supervision of felling and owing to the fact that conversion was effected by the axe, much wastage was involved. And thus the system was abandoned. In 1903, Richmond, the District Forest Officer, pointed out that under this system “a contract for a certain number of cubic feet was given to a contractor who was at liberty to take them from anywhere he liked and moreover if he cut down a tree and found it did not quite suit him, he worked on and cut down another and so on. It did not matter to him how many trees he destroyed as he only paid on the number of cubic feet he removed”.\(^96\)


The next system tried was to sell marked trees standing in located areas. The trees were to be selected and marked prior to felling and sold standing; payment was to be made in lump sum for all trees standing and not calculated on the outturn. In the Karumandiamman shola working circle of Nanguneri range 537 trees were extracted and the revenue collected was Rs.1872. The revenue worked out to Rs.3-7-6\textsuperscript{97} per tree felled. As early as 1904, Richmond remarked that the system was not “a good one”. In view of the importance of these sholas as protectors of the catchment areas of the more important irrigation streams, the department stopped the shola exploitation in 1913.\textsuperscript{98}

In the Ambasamudram range, from 1886 to 1896, on an average of 6,000 cubic feet of Hopea and Balanocarpus were extracted annually from the Ullar, Upper Servaiar and Kuduvaiar valleys. The work was done departmentally, the cost of extraction averaging Rs.0-12-6 per cubic foot. These operations involved considerable wastage. For example, out of 152 trees felled in the Kuduvaiar valley in 1899, only twenty eight were converted. Hence, the officials of the forest department ordered the stoppage of all operations. After the construction of the Kodamady- Kuttalam Kalaruvi road in 1909-10, extraction in the area west of the Usipothai was attempted departmentally. In 1910-11, fifty trees, mostly Vitex altissima were sold standing to a contractor at Rs.5-8-0 per tree and in 1911-12, another fifty trees were sold at Rs.6-8-0 per tree. The contractor had made a good profit as the average net yield was 150 cubic feet per tree, one Hopea tree alone yielding 317 cubic feet and the selling rate for Hopea scantlings was three rupees per cubic foot. As the contractors in the succeeding year refrained from offering good prices at the sale, extraction was soon abandoned.\textsuperscript{99}

\textsuperscript{97} Three rupees, seven annas and six paise.
\textsuperscript{98} Boards Proceedings, Forest, No.512, 9 Apr.1913.
\textsuperscript{99} Cariappa, Working Plan, p.58.
Due to lack of roads and comparatively difficult terrain, the evergreen forests remained untouched except for an occasional felling. In this connection D.T. Barry, the then District Forest Officer did excellent work at Kannikatty and Kodamadi where he raised even aged crops of *Hopea* and *Balanocarpus*, under a modified shelter wood system, girdling all useless species suppressing the advance growth. However, this work was very expensive, the girdled trees could not be sold and they were liable to fall and damage the seedlings of useful species.\(^{100}\)

The absence of a market in India for soft woods\(^{101}\) and the acute demand for timber to rehabilitate the devasted areas in France and Belgium after the First World War made A.W. Lushington look upon the rich hitherto unexploited evergreen forests as an inexhaustible source. Nonetheless an understanding of their comparative inaccessibility, the presence of only a few useful species scattered among hundreds of unsaleable stems, the scant knowledge about evergreen species and the value of sholas in protecting the catchment areas acted as a sobering factor. P.M. Lushington who visited the division in 1919 made some revolutionary proposals to tap the evergreen forests. They were\(^{102}\)

1) the construction of an electric tramway of about twenty miles from Ambasamudram to Kodamadi;

2) the erection of a saw mill and pulp mill at Kodamadi;

3) the construction of a bridge across the Servaiar at Mundanthurai wide enough to take both road and train traffic;

\(^{100}\) Rajasingh, *Working Plan*, p.43.

\(^{101}\) Timber with no definite heartwood or trees of rapid growth and short life.

4) the electricity for power was to be obtained from the 600 feet water fall at Kuttalam Kalaruvi and

5) the fuel demand of 2,00,000 tones from the division could be met partly from the sholas.

In 1920, as per the orders of the Chief Conservator of Forests, the Forest Engineering Branch made a detailed investigation. 103 Lemos was appointed as special officer who stock-mapped nearly sixty five square miles of evergreen forests. For the purpose Ambasamudram range was bifurcated into Kannikatty and Kodamadi ranges in 1921. 104 In 1927, the Chief Conservator of Forests ordered to select an area of not more than 100 acres in the Mesua zone at Kannikatty and conduct light selection felling in it, with a girth limit of sevan feet. As per the order in 1928, the first evergreen coupe of sixty one acres at Kannikatty was worked departmentally. It fetched a net revenue of Rs.440 out of a total 8,000 cubic feet of timber. The net profit per acre exploited in 1928 was Rs.3-12-0, and it rose to Rs.45-9-0 in 1929 and it further rose to Rs.71-1-0 in 1931. The net profit per tree exploited was Rs.1-6-0 in 1928, 24-9-0 in 1929 and 31-13-0 in 1931. 105 This departmental operations showed that it was profitable to work the evergreen forests. It was decided that not more than three trees per acre should be removed in order to preserve the evergreen advance growth. Generally, the prices obtained was low for a long time, but it increased later on which can be seen from the following table. 106


104 Rajasingh, Working Plan, p.43.


Thus, between 1928 and 1948, 1713 trees were felled on an area of 1003 acres in Kannikatty locality and 2016 trees were felled from an area of 1795 acres in Kodamadi locality. The results of departmental operations showed that extraction could be undertaken at a profit. The success encouraged the contractors in 1932 to come forward and purchase standing trees in the annual coupe. As a result, the entire burden of the staff was eased. Under Lasrado’s working plan, the evergreen forests were exploited but execution and marking was generally uneven and never well distributed. \(^{107}\)

\(^{107}\) Ibid., p.45.
The principal defects of the shola working were that no attempt was made either to encourage natural regeneration of the more valuable species or to supplement such regeneration by artificial means where necessary. Between 1908 and 1912, Latham and Peake carried out various small-scale experiments in opening up the canopy over young natural regeneration of *Balanocarpus* and *Gluta Hopea*. Barry continued this work. By judicious cutting or girdling of trees standing over natural regeneration of *Hopea* and *Balanocarpus* and by broad cast sowing of large quantities of seed of these species, he was able to raise even aged crops over small area scattered over the forest. These results encouraged everyone to take up the work on a large scale as the necessity to improve the evergreen forest was realised by them. Accordingly from 1920, large-scale regeneration and tending works in the evergreen forests prior to felling was taken up. To give more light to the advance growth, trees of useless species were girdled, climbers were cut, direct sowing and planting of seedlings was done wherever advance growth was absent. Unfortunately the results were poor probably because of the poor knowledge about the silvicultural characters of the species and the heavy damage caused by rodents to the seeds.

Therefore, from 1927, the department adopted a new policy in which the exploitable trees were first removed and then the gaps left were regenerated. Kasava Vittal, an officer on special duty, conducted various experiments on nurseries, artificial regeneration and natural regeneration as a preliminary to large scale work. A review of the work done up to 1942 showed that “the effect of tending and planting was not in any way beneficial to the forests” and consequently the Chief Conservator of Forests stopped the work once for all. The department admitted that “our knowledge of the evergreen
species is still backward and the crown manipulation which requires great precision for the different species becomes a difficult task for subordinates. Difficulty to identity and differentiate the useful species at the early ages results in the cutting down of valuable seedlings by ignorant labour. In the midst of such practical difficulties, tending and regeneration works in evergreen forests have always created some friction.”¹⁰⁸ Under Cariappa’s plan, the evergreen forests were given complete rest from 1948.

The total revenue and expenditure for the period 1872-73 to 1946-47

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<tr>
<th>Year</th>
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<th>Total expenditure</th>
<th>Surplus</th>
<th>Deficit</th>
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<tr>
<th>Year</th>
<th>Area (sq km)</th>
<th>Harvest (cu m)</th>
<th>Growth (cu m)</th>
<th>Balance (cu m)</th>
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Source: Cariappa, *Working Plan*, pp.80-81

After attainment of independence, a revised forest policy was formulated and this led to the need for more conservative management of the forests, which hitherto believed to the inexhaustible, were found to be inadequate in extent as well as contents to meet the growing needs.