

പതിനാലാം കേരള നിയമ സഭ
പത്താം സമ്മേളനം

നക്ഷത്ര ചിഹ്നമിടാത്ത ചോദ്യം നമ്പർ. 5714

28- 03- 2018-ൽ മറുപടിക്ക്.

സി-ഡിറ്റിൽ സയന്റിസ്റ്റ് വിഭാഗത്തിൽപ്പെട്ട ഗവേഷകർ

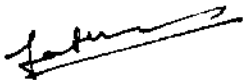
ചോദ്യം
ശ്രീ. വി.എസ്.ശിവകുമാർ

മറുപടി
പിണറായി വിജയൻ
(മുഖ്യമന്ത്രി)

(എ)	സംസ്ഥാന ഇലക്ട്രോണിക്സ് വിവര സാങ്കേതിക വിദ്യ വകുപ്പിന്റെ കീഴിലുള്ള സി-ഡിറ്റിൽ സയന്റിസ്റ്റ് വിഭാഗത്തിൽപ്പെട്ട എത്ര ഗവേഷകർ ഉണ്ട് എന്ന് വ്യക്തമാക്കുമോ?	(എ) & (ബി)	സി-ഡിറ്റിൽ സയന്റിസ്റ്റ് വിഭാഗത്തിൽപ്പെട്ട 14 ജീവനക്കാർ ഉണ്ട്. പ്രസ്തുത ജീവനക്കാർക്ക് കേന്ദ്ര സർക്കാരിന്റെ സി.എസ്.ഐ.ആർ നിരക്കിലുള്ള ശമ്പള സ്പെയിലാണ് നൽകുന്നത്.
(ബി)	പ്രസ്തുത ജീവനക്കാർക്ക് കേന്ദ്ര സർക്കാർ നിയമം അനുസരിച്ച് സി.എസ്.ഐ.ആർ ശമ്പള സ്പെയിലാണോ നൽകുന്നത് എന്ന് വ്യക്തമാക്കുമോ;		
(സി)	പ്രസ്തുത ജീവനക്കാർ സി.എസ്.ഐ.ആർ ചട്ടപ്രകാരം ഗവേഷണ നടത്തി സി-ഡിറ്റ് / സർക്കാരിന് ഗവേഷണ പേപ്പറുകൾ സമർപ്പിച്ചിട്ടുണ്ടെങ്കിൽ ആയതിന്റെ പകർപ്പുകൾ ലഭ്യമാക്കുമോ ;	(സി)	ഡോ. ഗോവിന്ദൻ. വി ഗവേഷണ പേപ്പർ സമർപ്പിച്ചിട്ടുണ്ട്. ആയതിന്റെ പകർപ്പ് അനുബന്ധമായി ചേർക്കുന്നു.

(ഡി)	സി-ഡിറ്റിലെ സയന്റിസ്റ്റ് വിഭാഗത്തിൽ (ഡി) പ്പെട്ട ഏതെങ്കിലും ജീവനക്കാർക്ക് ഗവേഷണ പേപ്പറുകൾ സമർപ്പിക്കാതെയോ/ ജേർണലുകളിൽ പരസ്യപ്പെടുത്താതെയോ കേന്ദ്ര പേ-റിവിഷൻ നൽകിയിട്ടുണ്ടോ; ഉണ്ടെങ്കിൽ അവരുടെ പേര് വ്യക്തമാക്കുമോ; ഇല്ലെങ്കിൽ സി.എസ്.ഐ.ആർ ശമ്പളം നൽകുന്നതിന്റെ മാനദണ്ഡം വ്യക്തമാക്കുമോ ;	<p>(ഡി) ഉണ്ട്.</p> <table border="1"> <thead> <tr> <th data-bbox="784 238 862 328">ക്രമ നം.</th> <th data-bbox="862 238 1128 328">പേര്</th> <th data-bbox="1128 238 1516 328">നിലവിലെ തസ്തിക</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>ശ്രീ.പി.വി. ഉണ്ണികൃഷ്ണൻ</td> <td>ജോയിന്റ് ഡയറക്ടർ(സയന്റിസ്റ്റ് എഫ്)</td> </tr> <tr> <td>2</td> <td>ശ്രീ. ജയരാജ്. ജി</td> <td>രജിസ്ട്രാർ(സയന്റിസ്റ്റ് ഉ 2)</td> </tr> <tr> <td>3</td> <td>ശ്രീ.സജിനാരായണൻ</td> <td>എൻജിനീയർ, ഇലക്ട്രിക്കൽ (സയന്റിസ്റ്റ് ഉ 1)</td> </tr> <tr> <td>4</td> <td>ശ്രീ.എം.ആർ.മോഹന ചന്ദ്രൻ</td> <td>സയന്റിസ്റ്റ് സിവിൽ (ഇ 1)</td> </tr> <tr> <td>5</td> <td>ഡോ. ഗോവിന്ദൻ</td> <td>സയന്റിസ്റ്റ് (ഇ 1)</td> </tr> <tr> <td>6</td> <td>ശ്രീ. ജയരാജ്. എൻ</td> <td>സയന്റിസ്റ്റ് സി(സോഫ്റ്റ് വെയർ)</td> </tr> <tr> <td>7</td> <td>ശ്രീമതി. ദീപഎൻ</td> <td>സയന്റിസ്റ്റ് സി(സോഫ്റ്റ് വെയർ)</td> </tr> <tr> <td>8</td> <td>ശ്രീ. രമേശ്. വി</td> <td>എഡിറ്റർ,(സയന്റിസ്റ്റ് സിഗ്രേഡ്)</td> </tr> <tr> <td>9</td> <td>ശ്രീ. ബിജു. എസ്. ബി</td> <td>സയന്റിസ്റ്റ് സി(സോഫ്റ്റ് വെയർ)</td> </tr> <tr> <td>10</td> <td>ശ്രീ മനോജ് കൃഷ്ണൻ</td> <td>പ്രോഗ്രാം കോ-ഓർഡിനേറ്റർ (സയന്റിസ്റ്റ് സി ഗ്രേഡ്)</td> </tr> <tr> <td>11</td> <td>ശ്രീ. ദാമോദർ പ്രസാദ്</td> <td>പ്രോഗ്രാം കോ-ഓർഡിനേറ്റർ സയന്റിസ്റ്റ് സി ഗ്രേഡ്</td> </tr> <tr> <td>12</td> <td>ശ്രീ.കെ.എം. ഷാജഹാൻ</td> <td>സയന്റിസ്റ്റ് സി</td> </tr> <tr> <td>13</td> <td>ശ്രീ ജേക്കബ് ജോർജ്</td> <td>പ്രോജക്ട് അസോസിയേറ്റ് (സയന്റിസ്റ്റ് സി ഗ്രേഡ്)</td> </tr> </tbody> </table> <p>സി.എസ്.ഐ.ആർ ചട്ടങ്ങളനുസരിച്ചുള്ള യോഗ്യതാ നിബന്ധനകളും അല്ലെങ്കിൽ തത്തുല്യ യോഗ്യതകളും, സയന്റിസ്റ്റ് അഥവാ തത്തുല്യ വിഭാഗങ്ങളിൽ അസസ്മെന്റ് പ്രമോഷൻ സി-ഡിറ്റ് സർവ്വീസ് ചട്ടങ്ങൾ പ്രകാരം നിശ്ചയിക്കപ്പെട്ട മാനദണ്ഡങ്ങളും പാലിച്ചുകൊണ്ടാണ് സയന്റിസ്റ്റ് വിഭാഗം ജീവനക്കാർക്ക് പ്രമോഷനും മറ്റ് ആനുകൂല്യങ്ങളും നൽകി വരുന്നത്. പ്രവർത്തന മികവും കോൺഫിഡൻഷ്യൽ റിപ്പോർട്ടും ഇൻറർവ്യൂവും അടിസ്ഥാനമാക്കിയാണ് പ്രമോഷൻ നൽകുന്നത്.</p>	ക്രമ നം.	പേര്	നിലവിലെ തസ്തിക	1	ശ്രീ.പി.വി. ഉണ്ണികൃഷ്ണൻ	ജോയിന്റ് ഡയറക്ടർ(സയന്റിസ്റ്റ് എഫ്)	2	ശ്രീ. ജയരാജ്. ജി	രജിസ്ട്രാർ(സയന്റിസ്റ്റ് ഉ 2)	3	ശ്രീ.സജിനാരായണൻ	എൻജിനീയർ, ഇലക്ട്രിക്കൽ (സയന്റിസ്റ്റ് ഉ 1)	4	ശ്രീ.എം.ആർ.മോഹന ചന്ദ്രൻ	സയന്റിസ്റ്റ് സിവിൽ (ഇ 1)	5	ഡോ. ഗോവിന്ദൻ	സയന്റിസ്റ്റ് (ഇ 1)	6	ശ്രീ. ജയരാജ്. എൻ	സയന്റിസ്റ്റ് സി(സോഫ്റ്റ് വെയർ)	7	ശ്രീമതി. ദീപഎൻ	സയന്റിസ്റ്റ് സി(സോഫ്റ്റ് വെയർ)	8	ശ്രീ. രമേശ്. വി	എഡിറ്റർ,(സയന്റിസ്റ്റ് സിഗ്രേഡ്)	9	ശ്രീ. ബിജു. എസ്. ബി	സയന്റിസ്റ്റ് സി(സോഫ്റ്റ് വെയർ)	10	ശ്രീ മനോജ് കൃഷ്ണൻ	പ്രോഗ്രാം കോ-ഓർഡിനേറ്റർ (സയന്റിസ്റ്റ് സി ഗ്രേഡ്)	11	ശ്രീ. ദാമോദർ പ്രസാദ്	പ്രോഗ്രാം കോ-ഓർഡിനേറ്റർ സയന്റിസ്റ്റ് സി ഗ്രേഡ്	12	ശ്രീ.കെ.എം. ഷാജഹാൻ	സയന്റിസ്റ്റ് സി	13	ശ്രീ ജേക്കബ് ജോർജ്	പ്രോജക്ട് അസോസിയേറ്റ് (സയന്റിസ്റ്റ് സി ഗ്രേഡ്)
		ക്രമ നം.	പേര്	നിലവിലെ തസ്തിക																																								
1	ശ്രീ.പി.വി. ഉണ്ണികൃഷ്ണൻ	ജോയിന്റ് ഡയറക്ടർ(സയന്റിസ്റ്റ് എഫ്)																																										
2	ശ്രീ. ജയരാജ്. ജി	രജിസ്ട്രാർ(സയന്റിസ്റ്റ് ഉ 2)																																										
3	ശ്രീ.സജിനാരായണൻ	എൻജിനീയർ, ഇലക്ട്രിക്കൽ (സയന്റിസ്റ്റ് ഉ 1)																																										
4	ശ്രീ.എം.ആർ.മോഹന ചന്ദ്രൻ	സയന്റിസ്റ്റ് സിവിൽ (ഇ 1)																																										
5	ഡോ. ഗോവിന്ദൻ	സയന്റിസ്റ്റ് (ഇ 1)																																										
6	ശ്രീ. ജയരാജ്. എൻ	സയന്റിസ്റ്റ് സി(സോഫ്റ്റ് വെയർ)																																										
7	ശ്രീമതി. ദീപഎൻ	സയന്റിസ്റ്റ് സി(സോഫ്റ്റ് വെയർ)																																										
8	ശ്രീ. രമേശ്. വി	എഡിറ്റർ,(സയന്റിസ്റ്റ് സിഗ്രേഡ്)																																										
9	ശ്രീ. ബിജു. എസ്. ബി	സയന്റിസ്റ്റ് സി(സോഫ്റ്റ് വെയർ)																																										
10	ശ്രീ മനോജ് കൃഷ്ണൻ	പ്രോഗ്രാം കോ-ഓർഡിനേറ്റർ (സയന്റിസ്റ്റ് സി ഗ്രേഡ്)																																										
11	ശ്രീ. ദാമോദർ പ്രസാദ്	പ്രോഗ്രാം കോ-ഓർഡിനേറ്റർ സയന്റിസ്റ്റ് സി ഗ്രേഡ്																																										
12	ശ്രീ.കെ.എം. ഷാജഹാൻ	സയന്റിസ്റ്റ് സി																																										
13	ശ്രീ ജേക്കബ് ജോർജ്	പ്രോജക്ട് അസോസിയേറ്റ് (സയന്റിസ്റ്റ് സി ഗ്രേഡ്)																																										
(ഇ)	സി-ഡിറ്റിലെ സയന്റിസ്റ്റ് വിഭാഗത്തിൽ (ഇ) പ്പെട്ട ഏതെങ്കിലും ജീവനക്കാർക്ക് മറ്റേതെങ്കിലും സ്വകാര്യ സ്ഥാപനങ്ങളിലെ ജോലിയുടെ കാലയളവ്	<p>(ഇ) ശ്രീ. എം.ആർ. മോഹനചന്ദ്രനും ശ്രീ. സജിനാരായണനും സയന്റിസ്റ്റ് ബി ഗ്രേഡിൽ നിന്നും സയന്റിസ്റ്റ് സി ആയി പ്രമോഷൻ നൽകാൻ മറ്റു സ്ഥാപനങ്ങളിൽ (കോസ്റ്റ്</p>																																										

<p>സർവ്വീസ് ആയി പരിഗണിച്ച് സയന്റിസ്റ്റ് തസ്തികയിൽ പ്രൊമോഷൻ നൽകിയിട്ടുണ്ടോ; ഉണ്ടെങ്കിൽ പ്രസ്തുത ജീവനക്കാരുടെ പേരും തസ്തികയും വ്യക്തമാക്കുമോ?</p>	<p>ഫോഡ്, ഐ. ആർ. റ്റി. സി) ജോലി ചെയ്ത കാലയളവ് സർവ്വീസ് ആയി പരിഗണിച്ചിട്ടുണ്ട്.</p>
---	--


 സെക്ഷൻ ഓഫീസർ



FORESTS OR FARMS Political Economy of Deforestation in Kerala

Dr. Govindaru V

Scientist E1, Centre for Development of Imaging
Technology (C-DIT) Thiruvananthapuram, Kerala

In view of the high density of population, low percentage of work participation in industrial activities, and the environmental suitability for carrying out agricultural operations throughout the year, the people of Kerala tend to engage more in cultivation and allied economic activities. This generates higher pressure on fertile land. It also induces encroachment on forest land.

A variety of factors have contributed to the large scale of deforestation in Kerala. Among them, what are the state policies and programmes that directly and indirectly have led to large scale deforestation in the state? What is the political, socio-economic and policy environment that has favoured this? This paper seeks answers to these questions.

Departm



Introduction

Land has many uses but its availability is limited. It means that by increasing area under one use, all other types of uses are deprived of that land. However, an ever increasing population demands additional land for producing more food, raw materials and for developing various infrastructures. This generates competition among various types of land utilization. In tropical countries, this competition is clearly visible between forests and farm land. Forests are being cleared in these countries on a large scale, particularly after the First World War, to produce more food in response to increasing population pressure¹. This has also been accelerated by the industrial and commercial harvesting of timber and many other development projects such as river valley projects, resettlement programmes, etc. The clearance of forests, whatever its purpose, will be accompanied by the effects of environmental degradation. Also, it has adverse impact on forest based local economic activities like collection of various forest produces, grassing domesticated animals, and shifting cultivation. So it is evident that increasing demand for agricultural products and forests products has forced man to resort to destruction of forests and converting them to permanent agricultural lands.

It is well discussed in the eco-science literature that nature has got its own means of rejuvenation when a sub-system's function deteriorates due to either catastrophies or human interventions. Human beings are also capable of speeding up the natural process of rejuvenation with the help of modern technology and science. However once a sub-system is totally destroyed, the



Foot Note: 1 - See page 70

possibility of natural process of resurrection becomes almost nil. Even if the society wants to revive the process, it requires huge amounts of capital and labour investments. Moreover in terms of environmental concern, once a sub-system is destroyed the energy consumed by that system happens to traverse towards other sub-systems. Over a period of time, it results quality changes in other sub-systems. For example, in disturbing the forest sub-system the energy consumed by trees and plants happens to traverse to other sub-systems of the area namely land and atmosphere. It results in quality changes in these sub-systems (for example, soil erosion in the case of land and temperature variation in the case of atmosphere). These types of relationships between the major system (i.e. nature) and sub-systems as well as among the sub-systems are not fully revealed if the study confines itself to a particular discipline. The present paper, however, confines itself to explain the causes of deforestation within the framework of political ecology².

Study Area

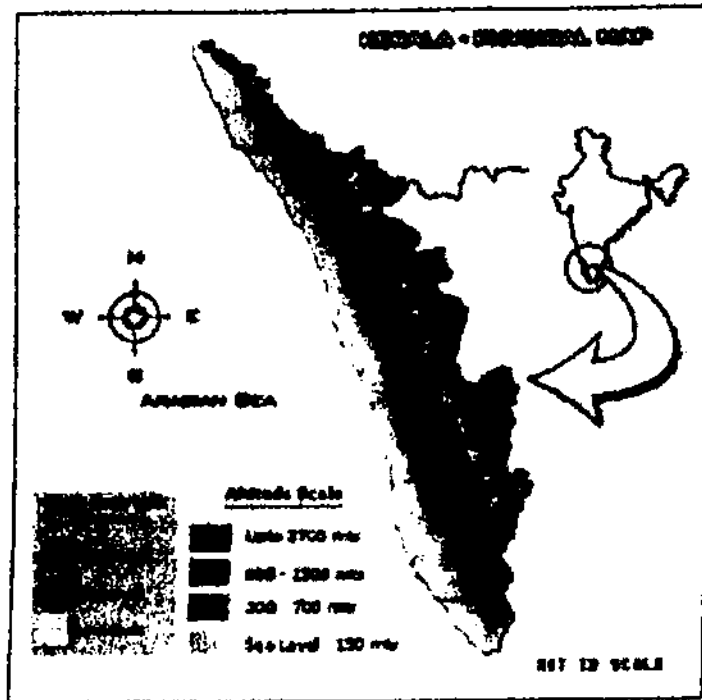
Western Ghat Region of Kerala is the study area of this work. The Kerala State of India lies between north latitudes 8°18' and 12°48' and east longitudes 74°52' and 72°22'. Geographically (Map1), the state divides into three climatically distinct regions namely Western Ghat (mountainous terrain with forest cover), the Central Midlands (rolling hills), and the Lowlands (coastal plains).

Methodology

The changing socio-economic and political environments of depletion of forests in Kerala are discussed with a historical perspective, because it is a continuous process not a 'static' or sudden event. Moreover, a historical outlook helps to understand not only the nature and pattern of changing man land/nature relationship but also its genesis. To carry out the analysis, the history of conversion of forests into agricultural lands is classified into three Eras such as (1) Pre Plantation Era; (2) Plantation Era, and (3) Post Plantation Era.

Foot Note: 2 - See page 70

Map1. Physical Map of Kerala



Pre Plantation Era (Before 1867 A.D)

Though there is a controversy over the starting of plantation era, it is generally accepted that 1867 is the initial year of large scale commercial cultivation in the state. Before the plantation era, most of the cultivated land (about 50 per cent of the total cultivated land) and the entire non agricultural land were owned by the government (Sirkar)³. These lands were known as *Pandaravaka* Land. The rest of the lands were held under the control of members and relatives of royal families and Rajas (free land); temples and brahmins (*Devaswams* and *Brahmaswams*); and various chieftains and others (lands paying *rajabhogam*)⁴.

A complex land tenure system was prevailing during this period in between the tenant ryots and owners, especially between the tenant ryots and sirkar lands. The tenants of *sirkar* land and *jenman* lands⁵ had neither ownership right nor did they have the power to transfer the occupancy right⁶. However, this tenurial relationship was changed in the 1860's by a series of royal proclamations. These proclamations had resulted in the emergence of a peasant proprietary class who can mortgage, sell or buy land freely and provided the conditions for the emergence of land market⁷, which had been one of the pre requisite factors for commercial agriculture.

Foot Note: 3 to 7 - See page 70

Another important aspect of these royal edicts was the encouragement of conversion of 'wasteland' into agricultural land. It may sound blasphemous now, but forests were then considered as wastelands! According to these edicts, those who had converted the 'wasteland' were given ten years tax exemption but even after this period they continued to get tax concessions, recognising their claim for cost of improvements on reclaimed land⁸. This was also significant to the social development of Kerala, whereas earlier land was concentrated in the hands of higher castes. With this any one could obtain land if he had sufficient capital to carry out conversion irrespective of his caste or creed. The first beneficiaries of this were European planters who were interested in investing in the high ranges of Travancore. In the later period, Syrian Christian and Ezhavas also made use of this new ryot system which was open to all castes.

During this period, the government was interested only on the collection of wild cardamom, other spices and lumbering of royal woods⁹ (teak, sandal wood, hopea, mahogany, laral, etc.). The collections as well as the sales of these forest products were carried out by a commercial cum forest conservator with head quarters at Alleppey. However by 1820's the government realised that carrying out of these duties by one officer was not only difficult but also inefficient. Therefore, the commercial cum forest conservator's duties were separated. The responsibilities of collection of spices, felling of trees and their transportation to Alleppey and conducting sales of these commodities were assigned to a commercial officer. Also the right to lease out the forest land for agriculture was given to revenue department in the later period¹⁰. This initiated the conflict between the Departments of Forest and Revenue and became one of the favourable conditions for encroaching into the forest land for settlement and agricultural purposes.

During this period, though the forests were owned by the government, the rights of the local people over the forest resources were preserved. The government allowed the locals to use the forests for grazing their cattle, collecting the fuel woods, wood required for agricultural implements and minor products. They also enjoyed the privilege of felling the trees other than 'royal category' for the construction of houses and other household materials. This was specified in the forest policy of that time. For example, the privileges of freely obtaining agricultural implements from the forests which the ryots had enjoyed were continued to them¹¹. However the alienation of locals from the forests was slowly started by the end of Pre Plantation Era, particularly after the nationalisation of forests in 1887. Initially the government imposed certain restrictions on the use of forest (by the locals). Locals were allowed to graze their animals and to collect green manure as well as wood for agricultural implements from the forests only for a restricted period in restricted areas on payment of fees¹². But in the later period, the government fully closed the entry of locals in to the forest for providing enough lands to plantations and spice gardens¹³.

Foot Note: 8 to 13 - See page 71

Plantation Era (1860/67 to 1948)

As a result of a series of royal proclamations in the early 1860's, land lordism ended in Travancore and land assumed the characters of a commodity in the market. Nevertheless, it did not immediately boost the expansion of plantations in the state. Therefore, the Government of Travancore reserved the forest land and leased out to the people who were interested in developing plantation and spice gardens. Along with this, the government announced various forms of incentives, such as free gift of a certain amount of land, low rate of rent for the land granted on leases and incentives for developing infrastructural facilities in the high range region, in 1867. These resulted in a rapid growth of commercial cultivation in the state (Table 1). Though these incentives were meant to attract foreign capital in commercial agriculture, it also opened the opportunities for the local people in undertaking adventures on the hills¹⁴. A policy wise account of how these concessions

Table 1: Area under Cash Crops in Travancore 1910 - 1946 (1000 acres)

Year	Total Cropped area	Area under cash crops	% Share of Cash crop to total cropped area
1910-11	1527	596	39.00
1920-21	1952	898	46.00
1930-31	2108	949	45.00
1940-41	2374	997	42.00
1945-46	2346	1079	46.00

Source: Tharain George and Michael Tharakan (1985), Development of Tea Plantation in Kerala: A Historical Perspective, p.23. created a favourable atmosphere for conversion of forests into cultivated lands is given in the following pages.

Provision of Wasteland at Low Price to the Plantation Crops

Though the state policy of encouraging the plantation cultivation by granting wasteland at concessional rate was started in the early 1850's, its impact could be felt widely only after the creation of title to the wasteland leading to its enclosure in 1865. It became all the more essential for the cultivation of plantation crops (coffee followed by tea and rubber) in Travancore. Most of the lands taken up for this purpose were common and waste land used for grazing cattle or for shifting cultivation. They were unregistered in nature (i.e. *Pandaravaka* land) and used for meeting the community needs of the local people¹⁵. Without title to these lands, the tenant cultivators, especially the Europeans could not have kept the trespassers out. Hence, the various types of wastelands were brought under the common rule (locally known as *puduvul* rules),

which simplified the procedure for registering these lands¹⁶. It facilitated commercialisation of lands by disturbing the customary sharing of the produce and by enclosure of these lands, and rapid acceptance of land grants by the planters. By this, area under plantation started increasing rapidly.

It is significant to note that the royal declaration of granting ownership rights to the common land coincided with the incentives given to the Europeans for investing their capitals on the development of hills. The Dewan of Travancore in his Administration Reports of 1865 said that the government was led to consider whether special inducement may not be held out to attract foreign ryots and further that "the Sirkar might offer certain acres of wastelands free of all rents for a generation or more, but stated period to such ryots as would offered as guarantee of permanent residence in the country by building homestead of certain specified value, towards the creation of which also the Sirkar might permit timber to be felled free of all charges"¹⁷.

In 1862, by a Government Memorandum, wastelands were granted for coffee cultivation free of all assessment for five years, on condition that at least one fourth of the land would be planted within the first three years. The tax fixed was three fourths of a British rupee on every acre of land. However, the Government retained the rights to fell the royal trees from these lands¹⁸. Also in the same year, the government notified the auction sale of land for coffee cultivation at very low price of one British rupee per acre. By 1865 there were 45 estates owned by Europeans consisting of 9172 acres in the state. A letter from the Dewan to the Resident of British India, dated 16 September 1910, summarises the information on land grants and the prices charged for them, up to that date. Of the total area of 33951 acres sold for planting, no charges were levied for 2117 acres (6.24 per cent), but on 15228 acres (46.92 per cent) one rupee per acre was realised, and the rest, i.e., 15906 acres (46.85 per cent) was auctioned away with an upset price of Rs. 10 per acre¹⁹. In addition, during this period Kannan Devan Hill Produce Company grabbed 215 square miles of forest land from the Pooniat Chief for a consideration of Rs. 5,000 which the government duly ratified in 1878²⁰.

Table 2 describes the land granted by the Travancore government for plantations during the period 1908 to 1931. According to this table, about an area of 7239.10 acres (i.e. 91.24 per cent of the total land) were granted without auction at upset price (Tharavila/ the floor auction price) itself, which ranged from Rs. 10 to Rs. 25 per acre. Only 694.89 acres (8.76 per cent of the total land) were auctioned away at prices exceeding the floor auction price.

It is pertinent to note here that these grants were made when the tank beds in the plains were sold to be converted into the paddy fields at an average price of not less than Rs.600 per acre by the government²¹:

Foot Note: 16 to 21 - See page 71

8

**Table 2: Land Granted by the Travancore Government for Plantations
During the Period 1908-1931**

Year	Land Grants Without Auction		Land Sold in Auction	
	Area (in acre)	Rupees per acre	Area (in acre)	Rupees per acre
1908	158.22	10		
	646.00	15		
1909	111.68	10		
	302.82	Free of Cost		
1911	41.09	15		
1912	225.00	15		
	317.26	25		
1913	265.26	15		
	1307.02	25		
1915	2584.66	25		
1916	128.12	25		
1919	339.95	25		
1920	167.69	25	20.82	116.00
1921	401.08	25		
1931	---	---	20.61	75.11
year not available	243.51	25	453.46	33.08
Total	7239.10		694.89	

Source: M S S Pandian (1990), Political Economy of Agrarian Change: Nanchilnadu, 1880-1989, p.82.

System of Taxation

Unlike paddy fields in the plain, estates lands in the high ranges were assessed very lightly. It encouraged the cultivation of tree crops in the state. For example, on estate growing coffee or tea, a land tax of 12 annas (i.e. Rs.0.75) per acre was imposed between 1862 and 1891. This was increased Rs.1 per acre in 1910²². During this period, the rubber estates were taxed at the rate of rupees 2 per acre. This taxation on plantations was very low and evident from the fact that the paddy fields in the state (in Nanchilnadu) were paying a land revenue of Rs.12 per acre²³. It is also noted in the work of Umadevi²⁴. According to her, the tax paid for paddy land was about 20 per cent of the gross income while this was about 1.5 per cent and 2 per cent respectively for the lands cultivating coconut and rubber plantations. Even this light tax was relaxed for bigger plantations under special grants. For example, the Kannan Devan Hill Produces Company paid about 0.31 rupee per acre on an area covering a little over one lakh acres of land, while the rest of 215 square miles (i.e. 1, 37,600 acres) under its ownership was not assessed at all²⁵.

Foot Note: 22 to 25 - See page 71

Though the lands taken up for the cultivation of plantation crops (coffee, tea, rubber) were not suitable for the cultivation of rice, yet the policy of taxing the planters lightly while taxing the rice cultivators heavily amounted to subsidizing the former at the cost of the latter. This is because, the benefits of governmental expenditure on transportation and other infrastructural facilities helped the cheap transport of plantation crops as well as the inputs required for plantation cultivation when they were negligible in the plain. More so, the restrictions imposed on the farmers in the plains on the collection of green manure etc., increased the cost of cultivation. However, the price of paddy did not increase apparently with the rise of cost of cultivation. This is so because the government policy to import rice at lower rate from other parts of the colonial India as well from neighbouring countries. It resulted in a shift of the cropping pattern from annual to commercial crops.

What is wrong if the government encouraged the cultivation of plantation crops on the wastelands which were not fit for the cultivation of rice (paddy) or any other cereal crops? We defer answering this question till the end of this chapter where the consequences of the expansion of plantations are taken up.

Mode of Payment of Tax

Until 1906 in Travancore, the land taxes were collected mostly in kind and a small portion in some places was in the form of cash. By a government order in 1906, the system of payment of land tax in kind was totally abolished in respect of all Sirkar tenures and money payment was substituted. It adversely affected the cultivation of paddy in the plains²⁶. This order forced the paddy cultivators to sell a larger portion of their produce to pay the tax in money. However in the case of plantation crops, the producer had to sell (export) his product in any case and the change in the mode of payment of tax in kind to cash did not affect either his decision to sell or his profits. This favoured large scale of expansion of plantation crops especially rubber in the state.

Leasing out of Forest Land for Cereal Cultivation

The decline of paddy cultivation on the one hand, and the various measures adopted for supplying sufficient number of labourers to the plantation cultivation²⁷ on the other, resulted in a shortage of food grains in the high ranges. As a result, it became essential to ensure adequate supply of food grains to the workers engaged in the plantation sector. This led to a deliberate policy of leasing out forests for cereal cultivation. In the initial years, the government granted permission to cultivate food crops on 25 acres of forest lands, mainly grasslands and swamps, under lease for a period of three years. But subsequently, the limit on area opened was removed and permanent tenure was granted on the basis of the revision of assessment rate every thirty years²⁸. This was the first official opening of forest for the cultivation of food

Foot Note: 26 to 28 - See page 71

Malayalie Colonisation ~~42~~ 11

After the formation of Travancore Cochin State, the Government of India decided to reorganise the state boundaries on a linguistic basis in 1956. During the period between 1948-1956, many parts of Tamil dominated areas like the high range taluks of Peermade and Devicolam of Idukki district and four Southern most taluks of Trivandrum district, namely, Vilavancode, Thovala, Augasteswaram and Kalkulam were parts of Travancore Cochin State, while Malayali dominated Malabar region was under the control of Madras state ³⁴. The process of state re organisation led to widespread Tamil Malayali unrest in the high ranges. To uphold the right over taluks of Devicolam and Peermade, the Travancore Cochin government started the High Range Colonisation schemes and implemented it at a war footing pace. Though the official purpose of these schemes was to provide land for poor and landless agricultural labourers from the plains of Travancore, the underlying purpose was to shift the linguistic balance in the high ranges in favour of Malayalies. The official goal of the High Range Colonisation Scheme was to settle 8,000 poor and landless families on 50,000 acres of forest land at the four sites adjacent to Madras state ³⁵. Accordingly each family was to be given five acres of land and financial assistance for settling down in the allotted site. The remaining land was kept for common uses ³⁶. Though the project was given up in between its implementation period, it alone increased the population of Idukki district by about 75 per cent in the same period (Table.3). Along with this, attempts to evict earlier encroachment were stopped.

Table 3: Decennial Population Growth in Kerala and Idukki District (1901-2001)

Year	Kerala		Idukki	
	Population (in 1000)	Decennial Growth (in %)	Population (in 1000)	Decennial Growth (in %)
1091	6396	-	47.69	-
1911	7148	11.75	99.60	108.88
1921	7802	9.16	108.80	19.23
1931	9507	21.83	187.77	72.59
1941	11032	16.04	244.42	30.17
1951	13549	22.82	331.60	35.67
1961	16904	24.76	580.23	74.98
1971	21347	26.29	765.61	31.95
1981	25454	19.24	971.20	26.85
1991	29011	13.97	1072.69	10.45
2001	31839	9.42	1147.35	6.96

Source: Census of India 1981, Kerala, General Population Table and Census of India 1991, Kerala, Provisional Population Table.

Footnote: 34, to 36 - See page 71

61

12

crops and it had far reaching consequences on the encroachment of forests by the plantation workers.

The World War I induced the shortage of food in the state. To overcome from this stress, the government encouraged the cultivation of food crops by granting forests, under "High Range Reclamation Scheme", at concessional rates. Under this scheme, up to 5 acres of lands were distributed to individuals for food cultivation on a short term lease (known as *Kuthaka Pattom*) basis²⁹. However after the War, the tenure was extended to 12 years or more (maximum period was up to 24 years) which was actually meant for 3 years at the beginning of this programme³⁰.

Again during the World War II and its aftermath period the shortage of food became more acute. The government, therefore, started Grow More Food Campaigns in the state. Accordingly, the government located fertile land, which can be used for rice cultivation, in the forested area and allotted to various ryots³¹.

The total area allotted for the cultivation of cereals in the course of the 'Grow More Food' campaigns is difficult to estimate. In 1944, the conservator of forests reported that roughly 13,600 acres of reserved forests were offered for cultivation. Out of this about 1,100 acres were in the Cardamom Hill Reserves (CHR)³². However, the actual figure was many folds higher than what it was reported in the government documents. Encroachment on the forest lands was growing simultaneously along with this programme in the state particularly in the CHR. It is because during this period, CHR were under the control of both forests and revenue departments. The basic responsibility of prevention of illegal tree cutting and encroachment were vested with the forest department, while the revenue department had the control over the land assigned and leased out for the cultivation. Such a dual control over the forest area helped the people to encroach on land very easily. Forest officials were ineffective in discharging their responsibility firmly as the land in CHR remained under the control of revenue department and the forest department could intervene only when the trees were cut³³. This dual system on forest management had helped plantation workers to encroach forest land on a large scale.

Post Plantation Era (After 1948)

Post Plantation Era begins with the commencement of the formation of Travancore Cochin State in the year 1948 and characterised mainly by the Malayali colonisation in the high ranges and initiation of various high range development programmes. These resulted in the weakening of institutional and physical barriers, which were the major constraints for the access to this region during the Plantation Era.

Malayalie Colonisation

13

After the formation of Travancore Cochin State, the Government of India decided to reorganise the state boundaries on a linguistic basis in 1956. During the period between 1948-1956, many parts of Tamil dominated areas like the high range taluks of Peermade and Devicolam of Idukki district and four Southern most taluks of Trivandrum district, namely, Vilavancode, Thovala, Augasteeswaram and Kalkulam were parts of Travancore Cochin State, while Malayali dominated Malabar region was under the control of Madras state³⁴. The process of state reorganisation led to widespread Tamil Malayali unrest in the high ranges. To uphold the right over taluks of Devicolam and Peermade, the Travancore Cochin government started the High Range Colonisation schemes and implemented it at a war footing pace. Though the official purpose of these schemes was to provide land for poor and landless agricultural labourers from the plains of Travancore, the underlying purpose was to shift the linguistic balance in the high ranges in favour of Malayalies. The official goal of the High Range Colonisation Scheme was to settle 8,000 poor and landless families on 50,000 acres of forest land at the four sites adjacent to Madras state³⁵. Accordingly each family was to be given five acres of land and financial assistance for settling down in the allotted site. The remaining land was kept for common uses³⁶. Though the project was given up in between its implementation period, it alone increased the population of Idukki district by about 75 per cent in the same period (Table.3). Along with this, attempts to evict earlier encroachment were stopped.

Table 3: Decennial Population Growth in Kerala and Idukki District (1901-2001)

Year	Kerala		Idukki	
	Population (in 1000)	Decennial Growth (in %)	Population (in 1000)	Decennial Growth (in %)
1901	6396	-	47.69	-
1911	7148	11.75	99.60	108.88
1921	7802	9.16	108.80	19.23
1931	9507	21.83	187.77	72.59
1941	11032	16.04	244.42	30.17
1951	13549	22.82	331.60	35.67
1961	16904	24.76	580.23	74.98
1971	21347	26.29	765.61	31.95
1981	25454	19.24	971.20	26.85
1991	29011	13.97	1072.69	10.45
2001	31839	9.42	1147.35	6.96

Source: Census of India 1981, Kerala, General Population Table and Census of India 1991, Kerala, Provisional Population Table.

Foot Note: 34 to 36 - See page 71



Construction of Dams

After the re organisation state, the government decided to start construction of dams for the purposes of irrigating the agricultural lands located at mid lands and plains and generating electricity by tapping the river water at its source. Accordingly, the government started the construction of 28 major and medium irrigation projects and 27 hydro electric projects at various sites in the high ranges³⁷. It resulted in the development of high range roads and large scale migration of construction workers from the plains.

Though the existence of forest is essential for such projects, the construction of dams, reservoirs and accommodations for the temporary workers and permanent staff required clearing of forests. According to one estimate, up to the year 1985, the total forest area cleared for various river valley projects in the state was about 241.40 sq. kilometers³⁸. This figure does not include the area encroached by the temporary construction workers and their dependents for settlements and subsequent agricultural activities.

Welfare Schemes

Implementation of various development programmes for the welfare of high range people and other sections of the society have led to large scale conversion of forests into agricultural land in the state. These programmes are initiated by both the central and state governments with an objective of creation of additional employment opportunities. Followings are some of the important schemes which have direct impact on the expansion of agriculture in the high range region.

Western Ghat Development Programme (WGDP)

In Kerala, WGDP was launched during the period of 1974 75 with the financial assistance of central government. Under this programme, the government started two dairy development schemes, one each at Idukki and Attappady, and one hill station development (at Ponmudy) in the state. Other development programmes such as afforestation, land improvement, and agricultural development were also implemented in the subsequent years, especially in the Idukki district³⁹. The area covered under these schemes in Idukki district is about 2000 hectares of forest land. A resettlement programme for the benefit of landless agricultural labourers, particularly the people belonging to scheduled caste and tribes, was also implemented under the WGDP in Idukki district. According to this programme, each family got one hectare of forest land for cultivating paddy and other food crops⁴⁰. Along with this, the government also provided basic amenities and infrastructure facilities like transportation, housing, water supply, hospital schools etc., at the resettlement site. It boosted the immigration of people from neighbouring places towards this area.

Foot Note: 37 to 40 - See page 71

Social Welfare Schemes

In Kerala, many social welfare schemes such as rehabilitation of repatriates from Burma, Sri Lanka and from African countries, ex army personals, evacuees from the project sites, tribals and political sufferers, etc., initiated by the government have played a direct role in the expansion of plantation crops in hilly areas. According to these schemes, each family or person got 3 to 10 acres of land for cultivation. The total forest land distributed under these schemes was about 20380 hectares till the late sixties ^{41&42}. In addition to these schemes, the government started its own plantations for resettling the repatriates who had come from Burma and Sri Lanka during this period.

State Farming Corporations

To accelerate the development and marketing of various cash crops, the Government of Kerala started various state corporations like State Farming Corporation (SFC); Plantation Corporation of Kerala (PCK); and Oil Palm India (OPI) in 1970's. For the establishment of these corporations the Forest Department has given its land from various divisions. For example, in the case of OPI the total extent of forest land given was around 3,705 hectares (i.e. 9,155 acres); whereas for the SFC it was around 2,265 hectares (i.e. 5,597 acres). Similarly, about 2,610 hectares (i.e. 6,449 acres) of forest land was given to PCK ⁴³. It needs to be noted here that by definition, these areas are still considered as forests and included in the statistics of total area under forest cover, even though the natural vegetation are totally cleared from these lands for raising plantations.

Forest Development Scheme

Soon after the independence, the government of India announced the National Forest Policy as a guide line for the use and management of forest resources. According to this policy, overall forestry in the country is divided into two schemes namely traditional and non traditional. Traditional forestry consists of those programmes sponsored by the central government for the development of economically valuable species inside the reserved forests, while on the other hand non traditional forestry scheme consists of various social forestry programmes which were to be implemented outside the reserved forests. Under the former, the Forest Department (FD) initiated the cultivation of eucalyptus, teak, sandalwood, rosewood, etc. inside the reserved forests. Under this programme, up to 1978 about 60,788 hectares (i.e 1,50,207 acres) of forest land was cleared for growing soft woods (i.e. eucalyptus) and about 59,688 hectares (i.e. 1,47,490 acres) of forest for cultivating economically valuable hard woods (teak, sal, rosewood, etc) ⁴⁴.

To facilitate the traditional forestry programmes, the FD has encouraged the practice of cultivating selected species under Taungya system (i.e. leasing out the forest land

Foot Note: 41 to 44 - See page 71

to the contractors for raising seedlings of selected species like teak, eucalyptus etc.). It enables the government to bring more area under plantations as well as reduces the expenditure on per hectare cost of planting and ensures higher survival rate of seedlings. However, in the later years, with the increase in the extent of forests given to the Taungya contractors, they started abusing the concession granted to them by growing food crops such as paddy, banana and tapioca on a commercial scale. It resulted in massive soil erosion and subsequent land degradation in the high ranges of Kerala.

Land Reforms Act

It is widely acknowledged that Kerala is ahead of India in the implementation of agrarian reforms. Abolition of tenancy and the protection of agricultural labourers are the achievements for which Kerala can claim credits. However, these have certain negative impact on the forest cover. The following section of this chapter analyses how the land reforms acts accelerated the process of conversion forest into farm land in the state.

To abolish the wide differences in the tenurial condition which prevailed during period of reorganisation of the state, government of Kerala initiated land reforms in the state in 1957. As a first step towards this, the state government promulgated 'Kerala Stay Eviction Proceedings Act 1957'. Followed this, two more Acts were also passed by the State Assembly. They were 'Kerala Agrarian Relations Bill 1959' and 'Kerala Land Reforms Act 1964'⁴⁵. These Acts, especially the Kerala Agrarian Relations Bill, accelerated the process of expansion of commercial cultivation in the state.

The Agrarian Relations Bill which was passed by the Assembly on 10th of June 1959 assures the fixity of tenure to all cultivating tenants irrespective of his deed or caste. The measures which had adopted to achieve this were (i) abolition of tenancy; (ii) ceiling on land holding, (iii) transfer of land, (iv) distribution of surplus land to landless poor, and (v) homestead to Kudikidapukars (attached labourers). This bill encountered considerable opposition from the land owning class and resulted in the dismissal of the State Government from the office by the Central Government. Therefore, this Bill could not be implemented in the state. Again, after a few years' gap, the new government promulgated a legislation known as Kerala Land Reforms Act 1964 instead of the Agrarian Relations Bill. The new act provided many concessions to the commercial estates, religious and charitable institutions, plantations, spice gardens, and dairy and cattle breeding farms from the land ceiling. It resulted in the expansion of area under plantation crops especially in the high ranges. Also, these concessions helped the owners of private forests to evade nationalisation of their forests in subsequent years by converting them into either plantations or spice gardens. It is, however, very sad to say that there is no relevant statistics available pertaining to the extent of conversion of forests into plantations after the introduction of Agrarian Relation Bill in 1959.

Foot Note: 45 - See page 71

Regularisation of Illegal Occupation in the Forest Land

In spite of many rules regarding the management of forest land, there has been a large scale encroachment on forest land by the migrant who came from the neighbouring rice growing areas. To know the extent and nature of encroachment as well as to provide the methods to check its incidence, the Government of Kerala appointed several Committees since 1950⁴⁶. These Committees provided details regarding the nature of encroachment and emphasised the need to evict the encroachers by fixing different cut off years. Nevertheless, this recommendation was not implemented except for a few attempts, due to political costs of conducting large scale eviction from the forests and communally based political power of settlers in the High Ranges.

The history and politics of forest settlement, encroachment and eviction in the state are linked with the politics at the state level since the opening of the forests for cultivation. After the formation of Kerala state, political power at the state level has shifted frequently between coalition of communist parties on the one hand and non communist left leaning parties on the other. Rarely any single party had full control over the legislature. Therefore, the single largest party always became dependent on small political parties and the constituents they represented. High range settlers made use of this political environment to uphold their interests in many ways. Whenever the revenue department officials initiated eviction of encroachers, the political party which had strong base in this region, namely Kerala Congress, went for various forms of agitations with the help of local people and churches, and forced the government to stop the eviction procedures. Also, whenever the Kerala Congress was in power they demanded the extension of cut off year of regularisation of illegal occupation in the high ranges in order to continue their support to the major partner of coalition government. Accordingly, the government regularised the occupation which occurred before 4-1-1957 initially extended to 1-1-1960, 1-1-1968, and to 1-1-1977 at various stages of political drama. It encouraged illegal occupation of forests all over the state at a greater scale. However, at present this has been stopped thanks to the provisions requiring concurrence of the Central Government for the conversion of reserved forests⁴⁷.

Impact of these Policies on General Land use

The analysis of land use data available in various reports of Government of Kerala, for the years 1964 65, to 2004 05 reveals that area under forest is almost constant in the state, though the above said factors led to a greater extent of conversion of forests into cultivated lands. Infact, statistics on land use change, especially regarding the forests and net area sown, need a closer examination in the state. Therefore, in this section, data from various individual studies, official notes of Revenue and Forest

Foot Note: 47 - See page 71.

18

departments, and Government's published statistics were used to bring out the impact of above said policies on area under forest cover. The land use budgeting for the study period is carried at two major regions of the state, namely Malabar and Travancore-Cochin regions.

During the period 1964 65 to 1974 75, proportion of net area sown (NAS) to the total geographical area of the state had increased from 52.79 per cent to 57.24 per cent. It might be due to the decline of area under permanent pasture and grazing land (from 0.88 per cent to 0.72 per cent), miscellaneous trees not included in NSA (from 5.4 per cent to 2.53 per cent), barren and uncultivated land (from 3.0 per cent to 1.68 per cent), and other fallow land (from 0.93 per cent to 0.54 per cent). The decline in area under these categories also contributed to the increase of land put to non-agricultural uses.

If we compare the land use change witnessed during the period 1964 65 to 1984 85 with that of 1984 85 to 2004 05, the scenario is perplexing at the state level as well as regional level. During the latter period, proportion of NAS to the total geographical area increased from 56.11 per cent to 57.49 per cent in Kerala and from 57.85 per cent to 58.83 per cent in Malabar region, as expected. However, in the Travancore - Cochin, the proportion of NSA to the total geographical area declined from 55.00 per cent to 53.60 per cent. In the meantime, lands under the categories of uncultivated, other fallow, and cultivable waste increased both at State and Travancore - Cochin (Table 4).

Is it a true picture of land use pattern and its change in the state? If yes, what did happen to all those programmes implemented for promoting extensive cultivation particularly after Independence? Also, population is increasing in the state while industrial development is far below the national average. In this situation, generally, people tend to depend more on land. It will further increase when the natural and policy environments are favourable to expand cultivated land.

To clarify this doubt, we collected and analysed the data pertaining to area under forest available in topo-sheets and landsat imageries for the year 1964 65, 1984 85 and 2004 05. It shows that forest in the state declined from 22.79 per cent of the total geographical area in 1964 65 to 10.90 per cent in 1984 85 and to 09.73 per cent in 2004 05 (Table 5). On the contrary, the State Government records for 2004 05 shows area under forests was 25.48 per cent, which is 15.75 per cent points more than the estimated figure. This is also confirmed in the report of Task Force on Forest⁴⁸. According to this report, about 3601 sq.km of forest had been cleared for various purposes. Out of this, about 87.20 per cent (around 3140 sq.km) was for agricultural purpose (Table 6). Though this figure is related to the period of 1940 70, it supports our view that there has been a continuous decline in area under forest while area under agriculture increased more and more.

Footnote: 48 - - See page 71

Why do the land use data available in Season and Crop Reports have such kind of draw back? Could it be that it is not basically due to the methodology adopted for data collection, but due to the censorship imposed on the statistical organisation by the government in the publication of actual data? The government generally wants to show that it protects the environment by preserving the forests, and still meeting the additional requirement for food grains by intensive cultivation and not at the cost of forest. Incidentally, the increase in yields does not look significant enough to achieve it.

Table 4: Land use Change 1964-65 to 1984-85 (Percentage to total Geographical area: Region wise)

Sl. No	Land Use Category	Travancore-Cochin Region			Malabar Region			Kerala		
		1964-65	1984-85	2004-05	1964-65	1984-85	2004-05	1964-65	1984-85	2004-05
1	Forest	22.81	31.12	29.73	22.58	23.79	23.13	27.26	27.83	25.43
2	Permanent Pasture and grazing land	0.50	0.12	0.04	1.39	0.15	0.01	0.88	0.13	0.13
3	Land under misc. tree crops not included in net area sown	1.92	0.88	0.35	7.59	2.01	0.37	8.40	1.16	0.33
4	Land put to non-agriculture uses	4.22	7.65	9.04	7.61	6.51	9.27	5.74	7.15	9.12
5	Cultivable Waste	1.87	2.65	1.01	4.55	4.16	2.28	3.08	3.37	1.61
6	Current Fallow	0.50	0.63	2.56	1.39	1.42	2.57	0.93	1.11	2.57
7	Net area sown	55.43	55.00	53.60	49.69	57.85	58.83	53.79	56.11	57.49
8	Barren and Uncultivated Land	2.32	1.38	1.96	3.84	3.28	2.95	3.09	2.22	2.34
9	Other fallow land	0.34	0.62	1.87	1.39	0.81	0.59	0.93	0.72	0.85
	Total Geographical Area	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Source: 1964-65 & 1984-85: Govindaru V (1995)
2004-05: Estimated from Government reports and notes

Table 5: Estimated Area Under Natural Forest Cover in Kerala 1964-65 to 2004-05 (hectare)

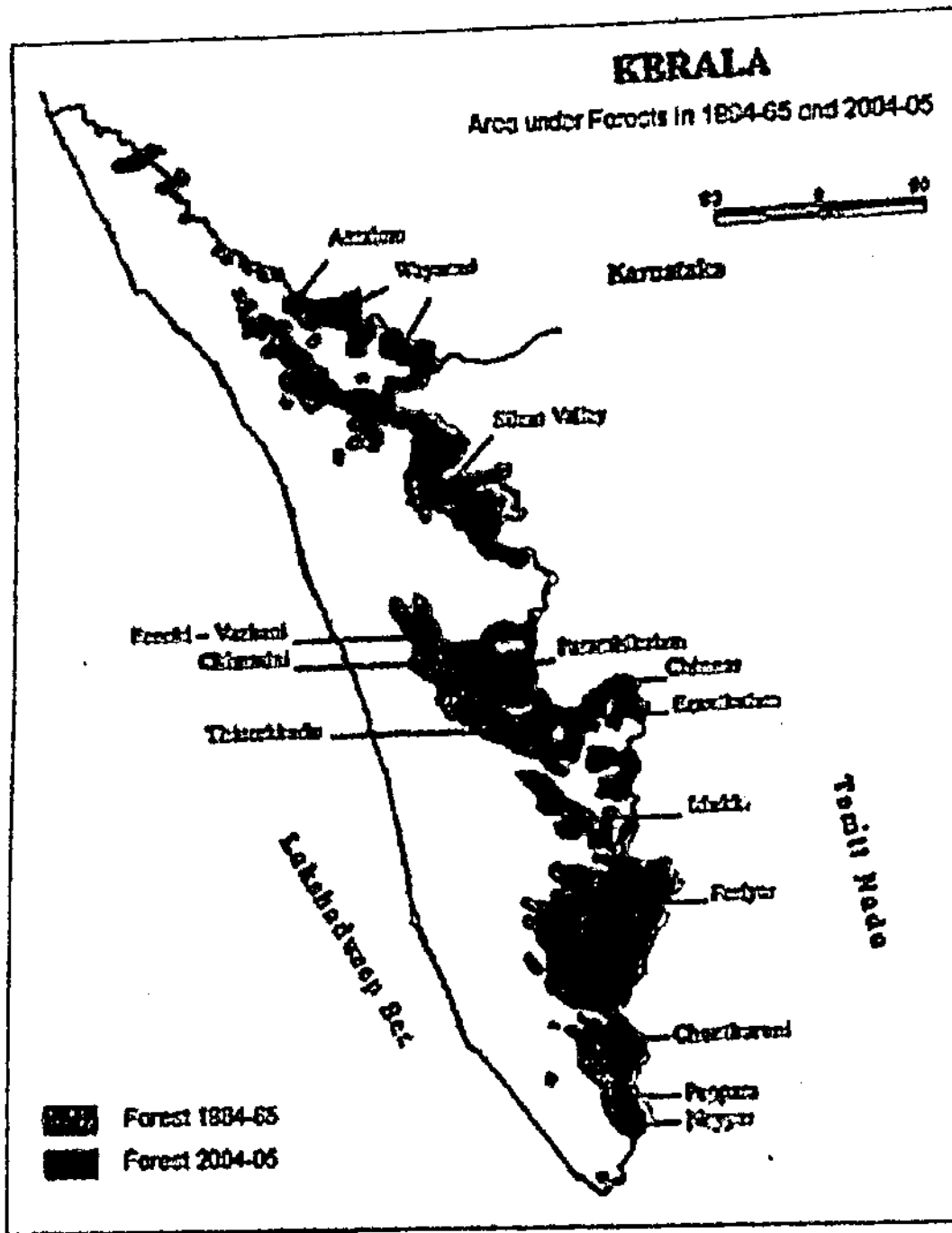
Land Use Category	Travancore-Cochin Region			Malabar Region			Kerala		
	1964-65	1984-85	2004-05	1964-65	1984-85	2004-05	1964-65	1984-85	2004-05
Area Under Natural Forest	595428	256738	224666	284013	166736	157235	879442	423474	3,80,694
Total Geographical Area (TGA)	2109852	2144467	2144450	1748671	1741030	1741248	3858523	3885497	3885496
Area Under Forest (percentage to TGA)	28.22	11.97	10.43	16.24	9.58	9.03	22.79	10.90	10.73

Source: 1964-65 & 1984-85: Govindaru V (1995)
2004-05: Land-sat Imageries and other individual studies

Table 6: Forest Lost Between 1940-1970 in Kerala (Sq. Km).

Sl. No	Reasons	Travancore-Cochin		Malabar		Kerala	
		Area in Sq. Km	% to total forest lost	Area in Sq. Km	% to total forest lost	Area in Sq. Km	% to total forest lost
1	Agriculture by assignment, encroachment, arable land scheme	1165.00	70.99	1015.00	51.78	2180.00	60.54
2	Coffee, rubber, pepper and other plantations	224.00	13.65	736.00	37.55	960.00	26.67
	Sub Total	1389.00	84.64	1751.00	89.31	3140.00	87.21
3	Settlements of hill tribes, colonisation etc.	117.00	07.13	143.00	07.30	260.00	7.22
4	Submerged as hydroelectric/ irrigation project area	135.00	8.25	66.00	3.37	201.00	5.88
	Total	1441.00	100.00	1960.00	100.00	3601.00	100.00

Source: Government of Kerala, 1973, Task Force on Forests (Report), Programmes for Forestry Development in Kerala, pp. 7-8



Conclusion

The Historical analysis of conversion of natural forests into agricultural lands reveals that the policy environment (socio economic and political) that favoured extension of cultivation in the high ranges of Kerala was an outcome of certain government policies such as leasing out these lands for commercial cultivation, Grow More Food Campaigns, colonisation by landless people at the forested land etc. Along with this, other contributory factors were economic development activities such as construction of roads, dams etc.; population growth in coastal and mid lands; dual management of

forested land; leasing out of forests to other departments; and regularisation of illegal occupations in the forest. In such a situation where the problem of conversion of forests for agricultural purposes is not strictly considered as an offense, there were hardly any incentives for controlling the future depletion of forest resources and sustainable use of these resources. This leads to discuss what type of consequences it generated on local landuse pattern of Western Ghat Region and its ecological implications at regional and local levels. This has to be studied in detail.

[Note: Content of this paper is heavily drawn from the author's Doctoral Thesis "Impact of Conversion of Natural Forests in to Agriculture and Plantation Crops on Local Economy and Environment: Kerala", University of Bangalore 1995.]

Bibliography

Bourdillon, T G, 1893, Report on the Forests of Travancore, Travancore Government Press, Trivandrum.

Census of India: 1961, General Population Tables, Part II-A, Kerala.

1961, Changing Population of Kerala, Monograph.

Chattopadhyay, S, 1985, "Deforestation in Part of Western Ghats Region (Kerala), India", Journal of Environmental Management, Vol.20, p. 219 230.

Government of Kerala, Season and Crop Report of Kerala State (various issues from 1965), Department of Economics and Statistics, Trivandrum.

Economic Review (various issues from 1975), State Planning Board, Trivandrum.

1982, Status Paper Idukki District, Trivandrum.

1984, Western Ghat Development Programme, Status Paper for Area Sub Group, Trivandrum.

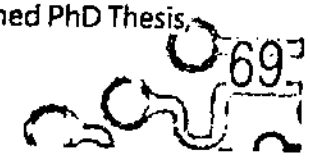
1984a, Report of the High Level Committee on Land and Water Resources, State Planning Board, Trivandrum.

1973, The Task Force on Forests: Programmes for Forestry Development in Kerala, State Planning Board, Trivandrum.

Government of Travancore, Administration Report of Travancore, Various Issues, Travancore Government Press, Trivandrum.

Travancore Land Revenue Manual, Various Issues (1920 1950), Travancore Government Press, Trivandrum.

Govindaru V 1995, Impact of Conversion of Natural Forests in to Agriculture and Plantation Crops on Local Economy and Environment: Kerala, unpublished PhD Thesis, University of Bangalore.



Herring, Ronald J, 1983, Land to the Tiller: The Political Economy of Agrarian Reform in South Asia, Oxford University Press, New Delhi.

Joshi, Suresh Chand, 1987, Deforestation in Kerala: Causes and Consequences, Unpublished M. Phil Dissertation, Centre for Development Studies, Trivandrum.

Moench, Mareus Henry, 1990, From Forest to Agro-Forest: Landuse Dynamics and Crop Successions in the Western Ghats of Kerala, South India, Unpublished Ph. D Thesis, University of California at Berkely.

Nair, K N et.al., 1989, Ecology or Economics in Cardamom Development, Occasional Paper Series, Centre for Development Studies, Oxford and IBH Publishing Co.Pvt. Ltd, New Delhi.

Pandian, M S S, 1987, Peasants, Natural Resource Use and State Intervention in Nanchilnadu, 1850-1940, EPW, Vol.22 (26) p.1032-1039.

Pillai, Parameswaran P (ed), 1982, Agricultural Development in Kerala, Agricole Publishing Academy, New Delhi.

Prakash, B A, 1990, "Agricultural Development of Kerala from 1800 AD to 1956 AD : A Bibliography Essay", The Asian Economic Review, Vol.32, April 1990, p. 101 128.

Repetto, Robert and Gillis, Malcom (eds), 1988, Public Policies and the Misuse of Forest Resources, Cambridge University Press.

Tharian, George K and Tharakan, P K M, 1985, Development of Tea Planation in Kerala: A Historical Perspective, Centre for Development Studies, Working paper No.204, CDS, Trivandrum.

Umadevi S, 1989, Planation Economies of The Third World, Himalaya Publishing House, Bombay.

Velupillai, T K, 1940, Travancore State Manual, Vols. I, II and III, Travancore Government Press, Trivandrum.

Foot Note

1 Repetto & Gillis, (eds), 1988, Public Policies and the Misuse of Forest Resources. (Full details of references are given in the Bibliography).

2 Political ecology is the study of how political, economic, and social factors affect environmental issues. The majority of studies analyze the influence that society, state, corporate, and transnational powers have on environmental problems and influencing environmental policy. There are many approaches to these issues, and some scholars give weight to the role that access to natural resources plays in structuring political and economic life: particularly how land degradation,

'fortress'-style wildlife conservation, or deforestation influences a range of social relations and politics

3 B A Prakash, 1982, Evolution of Land Tenures in Kerala: A Review, p.66, edited in Agricultural Development in Kerala by P P Pillai, 1982, p. 61 84.

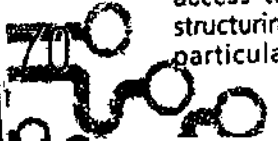
4 Ibid, p. 67.

5 The land which were under the control of members of Royal families, Rajas, Temples and Brahmins, various Chieftains and others.

6 T K Velupillai, 1940, Travancore State Manual Vol.III, p. 116 245.

7 B A Prakash, 1982, Op.cit, p. 72-73.

8 Ibid., p. 74.



- 23
- 9 T G Boardillion, 1893, Report on the Forest of Travancore, p. 34.
 - 10 Ibid., p. 160-63.
 - 11 M S S Pandian, 1987, op.cit.
 - 12 Ibid.
 - 13 T K Velupillai, 1940, op.cit., and M S S Pandian, 1987, op.cit.
 - 14 T K Velupillai, 1940, op.cit., vol.III, p.18. and T C Varghese, 1970, Agrarian Change and Economic Consequences: Land Tenures in Kerala (1850-1960), p. 107 119.
 - 15 S Umadevi, 1989, Plantation Economies of the Third World, p. 62
 - 16 Ibid., p. 63
 - 17 Ibid., p. 64
 - 18 T K Vellupillai, 1940, op.cit., Vol.III.
 - 19 Department of Land Revenue, 2554/1910, Cf. M S S Pandian 1990, p. 81.
 - 20 Travancore Land Revenue Manual, vol.II, p. 1.
 - 21 M S S Pandian, 1990, op.cit, p. 82.
 - 22 Travancore Land Revenue Manual, part II, p. 1 3.
 - 23 M S S Pandian, 1990, op.cit., p. 88.
 - 24 S Umadevi, 1989, op.cit., p. 65 66.
 - 25 P Parameswaran Pillai, 1946, Report on the Scheme for the Introduction of Basic Land Tax and the Revision of Agricultural Income Tax, Trivandrum, Cf. M S S Pandian, 1990, op.cit., p. 89.
 - 26 Travancore Land Revenue Manual, Vol.IV, p. 460 64.
 - 27 In the beginning of Plantation Era, local labour was neither available nor willing to engage in works related to plantation cultivation, because they were engaged in one work or the other in the plains. Therefore, the government initiated following policies to increase the supply of labour in the cultivation of plantation crops. They were: (i) abolition of slavery, (ii) conversion to Christianity, (iii) abolition of the 'Viruthi' or Service inam and (iv) importing labour from the neighbouring districts of Madras Presidency through the 'Kangani' (Contract System).
 - 28 Travancore Land Revenue Manual, Vol.II, p. 1119 20.
 - 29 Ibid, p. 662 and 741-45.
 - 30 Ibid, p. 745.
 - 31 Ibid.
 - 32 Proceedings of the Travancore Shri Mulam Assembly, Vol.XVII (I), p. 966 968, Cf. Marcus Henry Moench, 1990, op.cit., p. 82.
 - 33 K N Nair et.al., 1989, op.cit., p. 49-50
 - 34 Census of India 1961, Kerala.
 - 35 Government of Kerala, 1982, Status paper, Idukki District, p. 232.
 - 36 Ibid.
 - 37 Government of Kerala, 1989, Economic Review, p. 163-66.
 - 38 Srikumar Chattopadhyay, 1985, op.cit., p. 227.
 - 39 Government of Kerala, 1982, Status Paper Idukki District, p. 99.
 - 40 Ibid., p. 100.
 - 41 Suresh Chand Joshi, 1987, Deforestation in Kerala: Causes and Consequences, p. 102.
 - 42 The information regarding to the allotment of forest land under these schemes during the latter period is not available. However, the interview with various forest department and Landuse Board Officials reveals that it would be around 1.5 to 2 times higher than the figure of 1960's.
 - 43 Suresh Chand Joshi, 1987, op.cit., p. 101.
 - 44 Ibid., op.cit., p. 124
 - 45 Ronald J Herring, 1983, Land to the Teller: Political Economy of Agrarian Reforms in South Asia, p. 153 179.
 - 46 Suresh Chand Joshi, 1987, op.cit., p. 105.
 - 47 Forest Conservation Act, 1980
 - 48 Government of Kerala, 1973, Task Force on Forest

[Handwritten Signature]
[Handwritten Name]