



**FOURTEENTH KERALA LEGISLATIVE ASSEMBLY**

**COMMITTEE  
ON  
PUBLIC UNDERTAKINGS  
(2016-2019)**

**TWELFTH REPORT**  
(Presented on 9-3-2017)

**SECRETARIAT OF THE KERALA LEGISLATURE  
THIRUVANANTHAPURAM**

2017

FOURTEENTH KERALA LEGISLATIVE ASSEMBLY

**COMMITTEE  
ON  
PUBLIC UNDERTAKINGS  
(2016-2019)**

**TWELFTH REPORT**

On

**Kerala Forest Development Corporation Limited  
(Based on the Report of the Comptroller and Auditor General  
of India for the year ended 31 March, 2009)**

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COMMITTEE ON PUBLIC UNDERTAKINGS (2016-2019)

**COMPOSITION OF THE COMMITTEE**

*Chairman :*

Shri C. Divakaran.

*Members :*

Shri T. A. Ahammed Kabeer

Shri K. B. Ganesh Kumar

Shri C. Krishnan

Shri S. Rajendran

Shri Thiruvanchoor Radhakrishnan

Shri P. T. A. Rahim

Shri Raju Abraham

Shri Sunny Joseph

Shri C. F. Thomas

Shri P. Unni.

*Legislature Secretariat :*

Shri V. K. Babu Prakash, Secretary

Smt. P. K. Girija, Additional Secretary

Shri P. B. Suresh Kumar, Deputy Secretary

Smt. Deepa V., Under Secretary.

## INTRODUCTION

I, the Chairman, Committee on Public Undertakings (2016-2019), having been authorised by the Committee to present the report on its behalf, present this Twelfth Report on Kerala Forest Development Corporation Limited, based on the report of the Comptroller and Auditor General of India for the year ended 31 March, 2009 relating to the Public Sector Undertakings of the State of Kerala.

The Report of the Comptroller and Auditor General of India for the year ended on 31st March 2009, was laid on the Table of the House on 25-3-2010. The consideration of the audit paragraphs included in this report and the examination of the departmental witness in connection thereto were made by the Committee on Public Undertakings constituted for the years 2014-2016.

This Report was considered and approved by the Committee (2016-2019) at its meeting held on 18-1-2017.

The Committee places on record its appreciation for the assistance rendered by the Accountant General (Audit), Kerala in the examination of the Audit Paragraphs included in this Report.

The Committee wishes to express thanks to the officials of the Forest & Wild Life Department of the Government Secretariat and Kerala Forest Development Corporation Limited for placing the materials and information solicited in connection with the examination of the subject. The Committee also wish to thank in particular the Secretaries to Government-Forest & Wild Life and Finance Departments and the officials of Kerala Forest Development Corporation who appeared for evidence and assisted the Committee by placing their views before it.

Thiruvananthapuram,  
9th March, 2017.

C. DIVAKARAN,  
*Chairman,*  
*Committee on Public Undertakings.*

## REPORT

### ON

## KERALA FOREST DEVELOPMENT CORPORATION LIMITED

### AUDIT PARAGRAPH

#### *Wasteful expenditure on wattle plantations*

**Decision of the Company to raise wattle plantation without conducting suitability study resulted in wasteful expenditure of ₹ 1.14 crore.**

The Company engaged in raising of all species of forest plantations for the development of timber based industries in the State, wrote off (2007-08) the entire expenditure incurred on wattle plantations amounting to ₹ 1.14 crore. The wattle plants were raised (1994-98) in 312.60 hectares at Silent Valley in Munnar, which were expected to give an yield of 3150 MT after eight years (2002-2007) fetching expected revenue of ₹ 42.51 lakh.

The felling of wattle did not take place due to non-availability of grown-up plants in the area. As per the report (October 2007) of the Manager, Silent Valley Sub-unit, the survival rate of the plants ranged from a meager 4 per cent to 50 per cent. The reported height of the plants was only 2 to 3 meters and Girth at Breast Height (GBH) 10 to 19 centimeters and hence they could not be commercially exploited. The growth of the plants was retarded since high altitude place was not suitable for the growth of the plant.

Audit noticed that the Eucalyptus plantation raised in 1978 in same plots of land had failed and as a substitute of Eucalyptus, the Company identified wattle as an ideal species for planting in high elevated areas with the favourable planting experience of other Departments/States. The Company without proper studies regarding the suitability of the land for raising wattle plantations went for mass planting of wattle from 1994 to 1998; which eventually failed. Even the meager anticipated revenue of ₹ 42.51 lakh could not be realised due to total failure of the plantations.

Thus, the decision (1994-1998) of the Company to raise wattle plantation without conducting any suitability study was a case of defective planning which resulted in wasteful expenditure of ₹ 1.14 crore.

The Management/Government stated (June, July 2009) that such a massive under-performance of the species and resultant failure in terms of expected yields was never anticipated. The fact remained that deficient planning and failure to conduct suitability study by the Management prior to plantation resulted in wasteful expenditure to the Company.

Audit recommends that the Company should undertake proper feasibility study and cost benefit analysis before undertaking such activities.

[Audit Paragraph 4.11 contained in the Report of the Comptroller and Auditor General of India for the year ended 31st March 2009]

Notes furnished by Government on Audit Paragraph is given in Appendix II.

1. The Committee considered the reply furnished by Government regarding the audit para and accepted the same.

### **Conclusions/Recommendations**

**2. Expressing displeasure towards the Company's defective planning and failure to conduct a feasibility study prior to the plantation, the Committee accepts the reply furnished by the Government and decides to drop the matter.**

Thiruvananthapuram,  
9th March, 2017.

C. DIVAKARAN,  
*Chairman,*  
*Committee on Public Undertakings.*

## APPENDIX I

## SUMMARY OF MAIN CONCLUSIONS/RECOMMENDATIONS

Sl. No.	Para No.	Department Concerned	Conclusions/Recommendations
(1)	(2)	(3)	(4)
1	2	Forest & Wild Life	Expressing displeasure towards the Company's defective planning and failure to conduct a feasibility study prior to the plantation, the Committee accepts the reply furnished by the Government and decides to drop the matter.



APPENDIX II

NOTES FURNISHED BY GOVERNMENT ON THE AUDIT PARAGRAPH

<p>37</p> <p>Sl No 1</p>	<p>Para no (2) 4-11 2008-09</p>		<p style="text-align: center;"><i>മുഖ്യമന്ത്രി</i>  <i>Reply furnished by the Government</i></p> <p>മുനാൽ ഡിവിഷനിലെ ടെൻഡർ വാലി പ്രശ്നം പറ്റി</p> <p>1994-95 മുതൽ 1998-99 കാലയളവിൽ 312.60 ഫെക്ടർ വാറ്റിൽ പ്ലാൻറേഷൻ (അറേബ്യ ഡിസീനിന്റസ്) കേരള വനം വികസന കോർപ്പറേഷൻ വെട്ടു പിടിപ്പിക്കുകയുണ്ടായി. റെട്ടയ്മെന്റ് കമ്മീഷനാട്ടിൻ ഇതേ പരിസ്ഥിതിയിലുള്ള വാറ്റിൽ പ്ലാൻറേഷൻ കിടപ്പു നിലവാരം കണ്ടെത്തിയപ്പോൾ അനുവദിച്ചു കിട്ടിയ മുഴുവൻ സ്ഥലത്തും വെട്ടു പിടിപ്പിക്കുക വഴി തികച്ച ലാഭം പ്രതീക്ഷിച്ചുകൊണ്ടാണ് വാറ്റിൽ തന്നെ തിരഞ്ഞെടുത്തത്. ആ കാലയളവിൽ വാറ്റിൽ കണ്ടെൽ പൾപ്പ് വ്യവസായത്തിനും അതിന്റെ പറ്റം റെലി ആകൽ വ്യവസായത്തിനും വൻതോതിൽ ഉപയോഗിച്ചിരുന്നു.</p>
	4		

സെലക്ഷൻ വാലി വോക്കെ ഉയർന്ന പരിസ്ഥിതി പ്രദേശ  
 ത് പ്രവൃത്തിയിനം മരങ്ങൾ വെട്ടി വീടിട്ടിട്ടുണ്ടെന്നത് സംബ  
 സ്ഥിച്ച് കേരള / തമിഴ് നാട് വനം വകുപ്പിന്റെ മുൻപരി  
 ചയം ഇക്കാര്യത്തിൽ കമ്പനി തേടിയിരുന്നു. എന്നാൽ കമ്പ  
 നിയുടെ പ്രതികരണം വിവരിച്ചതായി സെലക്ഷൻ വാലിയിലെ  
 കാലാവസ്ഥാ വ്യതിയാനം വാറ്റിൽ മരങ്ങളുടെ സ്വാഭാവിക  
 വളർച്ചയ്ക്ക് തടസ്സം സൃഷ്ടിച്ചു. ഈ അഗതസ്സുണ്ടായ ശക്തമായ  
 കാറ്റിലും മണലുവീഴ്ചയിലും മരങ്ങൾക്ക് നാശമായ കേടു  
 പാടുകൾ സംഭവിച്ചു.

ആദ്യവർഷങ്ങളിലെ മരങ്ങളുടെ വളർച്ച സംബന്ധിച്ച്  
 ഒരു അവലോകനം കോർപ്പറേഷൻ അവലംബിച്ചു മൂൻറിങ്  
 സ്റ്റാൻഡിയിലുണ്ടായിരുന്നില്ല. മരങ്ങളുടെ വളർച്ചയ്ക്ക് മുൻപരി  
 ശ്രദ്ധയിൽപ്പെട്ടപ്പോൾത്തന്നെ കോർപ്പറേഷൻ ബാക്കി  
 സ്ഥലങ്ങളുള്ള നദീതീരങ്ങളിൽ വെട്ടുകയും ഇതിനായി ചിലവ  
 കിട്ടി 122.20 ലക്ഷം രൂപ 2007-08 ലെ അക്കൗണ്ടിൽ നിന്ന്  
 ബോർഡ് യോഗത്തിന്റെ തീരുമാനത്തിന്റെ അനുസരണ  
 ത്താൽ തീരുമാനിക്കുകയും ചെയ്തു.

5-3-2009 ലെ കേരള വനം വികസന കോർപ്പറേഷൻ  
 ബോർഡ് യോഗത്തിൽ ഈ വിഷയം വിശദമായി ചർച്ച  
 ചെയ്യുകയും, വാറ്റിൽ കൃഷി നഷ്ടമാകാനുള്ള കാരണങ്ങളെ  
 കുറിച്ചു കേരളാ ഫോറസ്റ്റ് റിസർച്ച് ഇൻസ്റ്റിറ്റ്യൂട്ടിനെക്കുറ

ബാങ്കും, വനം വകുപ്പിന് കീഴിലുള്ള പ്ലാന്റേഷൻ ഹെൽപ്പർ കമ്മിറ്റിയെക്കൊണ്ടും അനുബന്ധിപ്പിക്കണമെന്നും അവരുടെ റിപ്പോർട്ട് ബോർഡിന്റെ പരിഗണനയ്ക്ക് വയ്ക്കണമെന്നും ബിരുദമാറിയിട്ടുണ്ട്.

അതനുസരിച്ച് 21-5-2009 ന് കേരള ഗവണ്മെന്റ് നിരസിച്ചു. ഇൻസ്റ്റിറ്റ്യൂട്ടിന്റെ ഉദ്യോഗസ്ഥർ ഗവൺമെന്റിനോട് കൂടുതൽ മണ്ണിന്റെ നോമ്പിൽ പരിശോധനയ്ക്കായി എടുക്കുകയും ചെയ്തു. അവരുടെ 14-7-2009 ലെ റിപ്പോർട്ട് പ്രകാരം വാറ്റിൽ മരങ്ങളുടെ വളർച്ചയ്ക്കുവേണ്ടി നാശനഷ്ടവും കാരണം താഴെ പറയുന്നവയാണ്.

1. അനുയോജ്യമല്ലാത്ത കാലാവസ്ഥയും മൃദലകൃഷിയും.
2. വന്യമൃഗങ്ങൾ, കാട്ടുപി എന്നിവ മൂലമുള്ള നഷ്ടങ്ങൾ.
3. മരങ്ങളുടെ പുറകോലി വിണ്ടുകീറി മരങ്ങൾ നശിച്ചുപോകുന്ന രോഗം

ഇത് സംബന്ധിച്ച കേരള ഗവണ്മെന്റ് നിരസിച്ചു. ഇൻസ്റ്റിറ്റ്യൂട്ടിന്റെ റിപ്പോർട്ടിന്റെ കോപ്പി ഉള്ളടക്കം ചെമ്പു നമ്പു. (Ann : I)

ചീഫ് കൺസർവേറ്റർ ജോർജ്ജ് ഗവണ്മെന്റ് (വർക്കിംഗ് പ്ലാൻ കേരള നിരസിച്ചു) ന്റെ മനയ്യയ്യത്തിൽ 04-01-10 ന് പ്ലാന്റേഷൻ ഹെൽപ്പർ കമ്മിറ്റി വാറ്റിൽ കൃഷി നടത്തിയ സ്ഥലം സന്ദർശിച്ചു. അവരുടെ റിപ്പോർട്ട് ഇക്കോട്രാപ്പിംഗ്

**ഉള്ളടക്കം ചെമ്പുനൂ. (Ann : I)**

അറബിയിൽ, പുതിയ ഏകരൂപിയും ഇന്നും മരണിന്റെ കൃഷി തുടങ്ങുന്നതിനു മുൻപ് അതിന്റെ പ്രായോഗിക വശങ്ങളെക്കുറിച്ച് പഠിക്കുകയും ചെമ്പിന് അറബിയിൽ കൃഷി നടത്തി വിജയകരമാണോ എന്ന് വിലയിരുത്തുകയും ചെയ്യുന്നതാണ്. മാത്രമല്ല പുതിയ കൃഷി തുടങ്ങുന്നതിനു മുൻപ് നിശ്ചിച്ച് ഇതിനുള്ളിലുള്ള KFR, TBGR എന്നിവയുടെ ഉപദേശം തേടുന്നതായിരിക്കും. അഡ്വൈസിന്റെ നിർദ്ദേശങ്ങൾ പൂർണ്ണമായി ഉൾക്കൊള്ളുകയാണ് അറബിയിൽ പ്രവർത്തിക്കുന്നതായിരിക്കും.

KERALA FOREST RESEARCH INSTITUTE, PEECHI 680653  
(An Institution of Kerala State Council for Science, Technology and Environment)

### EXTENSION REPORT

On

#### **FAILURE OF WATTLE PLANTATION RAISED BY KFDC IN SILENT VALLEY, MUNNAR**

Ref: (i) DO No. IA 4410/08 dated 27.3.2009 of the Managing Director, KFDC  
(ii) DM/MNR/PI/08 dated 29.4.2009 of the Div. Manager, KFDC, Munnar

#### Background

The KFDC, during 1994-98, planted 312.6 ha of grasslands in Silent Valley in Munnar Division with wattle (*Acacia decurrens*, as per records). The planting was done in a *Eucalyptus grandis* failed area. Wattle was chosen based on its performance in similar site conditions in Tamil Nadu.

#### Field Inspection

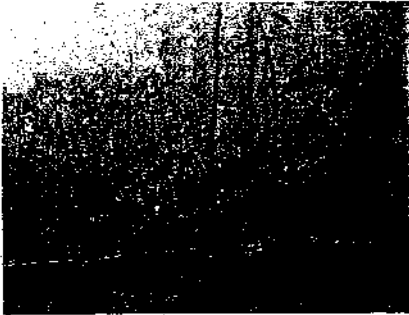
A joint field inspection was carried out on 21.5.2009. The KFRI team comprised Dr. C Mohanan (Head, Forest Health Division; specialist in mycology and diseases), Dr. Thomas P Thomas (Head, Soil Science Division; specialist in Soil Science), Dr. RC Pandalai (Head, Silviculture Division; specialist in plantation Silviculture), and Dr. KC Chacko (Programme Coordinator, Extension and Training Division, specialist in Silviculture). The KFDC team comprised Sri. PV Sreenivasan, Manager, Munnar Division, and Sri. K. Rajan, Dy. Manager, Munnar Subunit. Observations on site, performance of plantation etc. were made and soil samples collected for further examination.

#### Observations

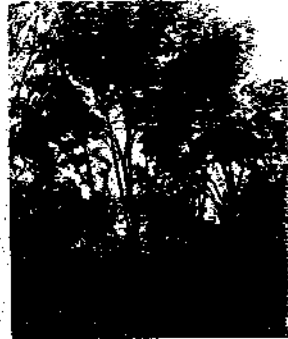
The Silent Valley of Munnar is a high elevation site situated at an elevation of 2401m above the sea level, around 35 Km away from Munnar on the Munnar- Vattavada route. The GPS reading of the site is: N 10° 05.509', E 77° 10.873'. The terrain is undulating with very steep slopes (Fig.1) and valleys. The 1994 *A. decurrens* plantation extends over an area of 312.6 ha

The soil on these steep slopes is seen moderately deep with fine texture and good water holding capacity, but the upper soil layers are very high in organic carbon content that has accumulated due to low temperatures that do not favour decomposition. In many places the surface horizons are more of organic carbon than soil. The high levels of organic carbon in the top soil are not conducive to the establishment of trees, but the

Lower horizons are capable of supporting tree growth once the roots reach the subsoil. Soil per se does not seem to limit plant growth, but low temperatures seem to restrict nutrient dynamics and its availability.



*Fig.1 The undulating terrain with steep slopes*



*Fig.2 Natural regeneration of Wattle*

Profuse natural regeneration of wattle (Fig.2) could be seen in many areas of the plantation and there were evidences of fire incidences in the plantation.



*Fig.3 Exfoliated bark and lesions*

In a few locations some of the living trees showed exfoliated bark with lesions through which exudations were visible, indicating the possibility of fungal infections (Fig.3). A few isolated trees standing on severely failed areas suggest damages due to wind and frost. Wattle is a frost-tender species and has shallow root system.

The hostile climatic conditions such as very heavy winds during the rainy days, occurrence of frost and the unfavourable soil conditions make the area almost unsuitable for commercial forestry plantations. The present average growth of the wattle tree (40cm girth and about 8m height) is not acceptable under a commercial venture.

Damage by fungus *Nectria* sp. causing splitting of bark could be among other reasons of poor growth. Injury caused by fire and wildlife (especially sambar rubbing on the stem of trees) may possibly be a pre-disposing factor for the large-scale infection by the fungus (*Nectria* sp.) resulting in longitudinal splitting of the bark girdling the stem and subsequent die-back. The fact that satisfactory growth of wattle is not seen even on good sites within the plantation, leads to the conclusion that the site is not good for commercial plantation forestry. However, natural regeneration of wattle is good.

It is felt that leaving the area to nature will be the best option, as natural regeneration of the native species resistant to these adverse climatic and edaphic factors can green up the area in due course.

As understood from the local officers, the site supports good population of Nigiri tahr, elephant, sambar and bison.

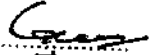
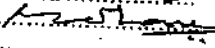


#### Conclusions and Recommendations

The reasons for the low survival and poor growth of wattle can be attributed to the following factors.

- i. Unfavourable climatic and edaphic site conditions.
- ii. Wildlife and fire damage.
- iii. Disease leading to splitting of bark and die-back of plants.

Considering the hostile and difficult-to-access conditions of the site, and learning lessons from the past experience of unsuccessful attempts to raise good plantations, the area may be left to regenerate naturally.

The potential of the area for high altitude ecotourism may be considered, considering the beauty and educational value of the landscape. This may be viable as KFDC is already offering ecotourism services at the Base Camp.

Dr. KC Chacko, Programme Coordinator, Extension & Training Division .....   
 Dr. C. Mohanan, Head, Forest Health division .....   
 Dr. Thomas P Thomas, Head, Soil Science Division .....   
 Dr. RC Pandalai, Head, Silviculture Division ..... 

14 July 2009


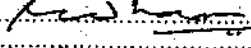

Encl. Literature on *Acacia mearnsii/A. decurrens/A. dealbata* (20 pages) - for reference.

A NOTE ONTHE BURNED PINE PLANTATION OF THE KFDC  
NEAR SILENT VALLEY, MUNNAR

The plantation was inspected jointly by the KPRI scientist and KFDC officials on 21.5.2009.

**Observations:** Of the *Pinus patula* trees planted at a spacing of 2.5 m x 2.5 m, in 1995, over an area of 6.06 ha, 3.5 ha was accidentally fire-burned in January 2009. KFDC has marked a number of trees that are likely to recover.

**Recommendations:** It is advisable to fell all the fire-burnt trees and sell them, as the fire-burnt trees are liable to be affected by diseases. Alternatively, this small fire-affected plantation could be used as a valuable experimental site to study the effect of fire on survival, growth and wood recovery in *Pinus patula*.

Dr. KC Chacko, Programme Coordinator, Extension & Training Division .....   
 Dr. C. Mohanan, Head, Forest Health division .....   
 Dr. Thomas P Thomas, Head, Soil Science Division .....  
 Dr. RC Pandalai, Head, Silviculture Division ..... 

14 July 2009



Report of Plantation Failure Committee, Kerala Forest Department

The Plantation Failure Committee members visited and inspected the wattle plantation in Silent Valley in Munnar Division of Kerala Forest Development Corporation Ltd on 04.01.2010.

Present

1. Sri. Lakhwinder Singh, IFS, Chief Conservator of Forest, WP&R, Trivandrum
2. Sri. Jayram, D.F.O., Flying Squad, ~~Munnar~~ Kottamangalam
3. Sri. Ravikumar IFS, DCF, Research, Trivandrum
4. Sri. Premkumar, A.C.F., Research, Perumede
5. Sri. Prasad, W.P., Officer Munnar
6. Sri. P.V. Sreenivasan, Divisional Manager, KFDC, Munnar

The Managing Director, Kerala Forest Development Corporation Ltd had briefed the committee the details of the Plantation and the circumstance which lead the committee to visit the plantation and also supplied the following documents.

- I. Report on the failure of wattle Plantation by K.F.R.I.
- II. Silviculture of Indian trees - extract, pertaining to wattle.
- III. Plantation History (Plantation wise)

The committee examined the documents given by KFDC. First is the report by a team of Scientists specialized in Mycology and diseases, soil science, plantation silviculture etc. from K.F.R.I. who conducted a study of the Plantation after observation on site and examination of soil samples etc. on 21.05.2009. The team of scientists from K.F.R.I. attributed the following factors for failure of this Plantation.

- I. Unfavourable climatic and edaphic and site conditions
- II. Wild life damage
- III. Disease leading to splitting of bark and die back of plants

Second document is the silviculture of green and black wattle, an extract from the Troup's the silviculture of Indian trees Vol. IV published by the Controller of Publications, Forest Research Institute.

The common name given to this species is wattle. The characteristic of the wattle are as detailed below;

a) Growth Habit

The general characters of this species are that it is a medium sized tree with smooth dark brown bark reaching a height of 20-27m and 40-45 cm in girth.

b) Soil

It grows best on loose deep well drained loam with good aeration. In laterite soils the growth is only fair. An impermeable clay pan or hard laterite close below the surface is most unsuitable.

c) Climate

A range of temperature varying from 29.4°C in summer to 4.4°C in winter is found most suitable for wattle. In upper altitudinal zone, it can not tolerate temperature below 0°C. The species exhibits great intolerance to extreme of both heat and cold. Frost, hail and snow are serious limiting factors to the growing of the species. It requires minimum rain fall of 890 -1016 mm per annum preferably well distributed over the cold weather and monsoon months.

Forest Type

It is not indigenous in India. It was introduced in the Nilgiri and Palani Hills in Tamil Nadu in the Southern Mountain wet temperate Forest type.

Silviculture Characters

A strong light demander. Provision of shelter seems to be beneficial in its early life. Its coppicing power is low, while it produces coppice shoots, the growth tend to be irregular and not vigorous enough to enable working on a coppice system. Wattle plants need special protection from fire. A large fire which may not kill the plant, may be damaging enough to reduce the value of the bark by scorching it. It cannot stand drought. Adequate soil moisture is a pre-requisite for satisfactory growth. It thrives best in area with a mean annual humidity 73. Wattle is exceedingly frost tender and small plants

have to be protected by broken or grass shades during the first one or two winters. At high altitudes, where cold wind prevails during winter, plants are liable to become stunted and may even be killed in large numbers during early stages of growth.

### III Plantation Details

Sl. No.	Year of Plantation	Area (Ha.)
1.	1994	75.000
2.	1995	75.000
3.	1996	50.000
4.	1997	75.000
5.	1998	37.600
	<b>Total</b>	<b>312.600</b>

History of the plantation is that during 1994 to 1998 period Kerala Forest Development Corporation planted 312.60Ha. in Silent Valley in Munnar Division with wattle in the Eucalyptus grandis failed areas. Company is said to have selected this species based on the experience of Kerala & Tamil Nadu Forest Department which had already brought large extents in high elevation areas under Wattle with good results. The performance of the young plantations raised in the area by the company was satisfactory in terms of survival, growth etc in the initial stages. Retardation of growth manifested after the plants attained 3 to 4 meter heights. Regular maintenance operations were carried out in the initial years up to 1998. But, plants after attaining, 3 to 4 metres heights remained stunted and started exhibiting die back symptoms during winter. On noticing the poor growth and die back symptoms, further maintenance operations in the plantation was said to have been discontinued. Records relating to this decision in the year 1999 are not available with the Corporation. Once tending and maintenance operations were discontinued, naturally growth of plantations raised after 1997 etc. could not exhibit any further growth. Contrary to the sample plot data recorded by Field Officers of KFDC earlier, the committee could notice higher percentage of stock

of plants in the earlier planted areas of 1994, 1995 etc. However most of these have come up from the root suckers. The later planted areas of 1997 and 1998 almost look blank with very few surviving plants with less than 2M height and without any root sucker shoots around them.

Observation by the Committee:

The plantation area support population of Nilgiri Tahr, elephants, deer, wild boar and Bison. Natural regeneration of wattle through root suckers is seen in certain pockets indicating that the species can come up here. Certain pockets in 1994 & 1995 plantations show luxurious growth. Symptoms of fire burns are visible on the bark of few trees having too many whippy epicormic shoots. Girdling effect is seen in the dead and dried stem due to peeling of bark by animals in some plants. Major damage has come from die-back symmetry especially of plants attaining a height of 3 -5 M. On random cutting of a few such dry stems of trees have shown hollow channel in the core portion, appears to have caused by fungal infection. Rotting also is seen spreading in the hollow portion. It is not clear whether this infection is primary or secondary. Die back symptoms are noticed even in lower elevations.

Elevation of the plantation area ranges between 2000 on to 2400 M. Higher elevation areas are frosty localities and young wattle plants are susceptible to frost damages especially when temperature falls below 0°. Topography of the land is steep slopes with open ground and velocity of wind during winter and rainy days are too high. Average rainfall in this locality is around 2000 mm/year and this will not affect the wattle plants since drainage is good. The company after having found the poor performance of wattle plants discontinued further tending operations. Symptoms of occasional ground fires also are noticed. The surviving trees have average girth between 10cm to 25 cm in the best performing pockets and in the other parts it is below 20cm. The plantation with its present stocking is not maintainable for commercial extraction. The status of the plantation has become commercially unviable due to reason attributed as adverse growth factors like frosty locations, high velocity winds, disease infection, fire and other biotic interference from wildlife. Company had raised the plantation in 5 year period. Younger stage plants might have shown satisfactory growth because of which KFDC Ltd


had not anticipated such an eventuality in later stage. Hence if it is viewed in the angle of commercial forestry, the plantation is not viable. Development of green cover in the area is useful to the wildlife as can be seen in the field. There are evidence of wild animals taking shelter in this plantation area having the cover of wattle plants. KFDC Ltd., has embarked on Eco-tourism in this location and it seems that the area has much potential for top class Eco-tourism activities. The remaining wattle in the area along with grass land and shola Forests can give great visitor experience and can generate revenue in future. Promotion of Nilgiri Tahr population in this pocket needs to be tried through suitable intervention in the Habitat Management.

Inspection of the plantation failure committee or any other specialist team ought to have been done before taking a decision on discontinuation of the maintenance activities or at least immediately, there after. Reasons for failure, at this distant date can only be assumed. Absence of records relating to justification of the decision to discontinue the maintenance activities was a constraint for the team.

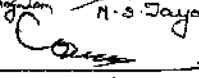
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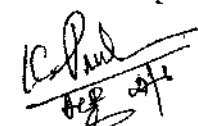
2. Sri. Jayram,  
D.F.O., Flying Squad, Munnar to Kottayam

  
 A. S. Jayaraman

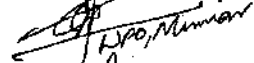
3. Sri. Ravikumar IFS,  
DCF, Research, Trivandrum



4. Sri. Premkumar,  
A.C.F., Research, Perumede



5. Sri. K.C. Prasad,  
W.P. Officer, Munnar



6. Sri. P.V. Sreenivasan,  
Divisional Manager, KFDC,  
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