

**KERALA FOREST RESEARCH INSTITUTE
PEECHI**

ANNUAL REPORT

1992 - 93

CONTENTS

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- 1. Introduction*
 - 2. Research Highlights*
 - 3. List of Research Projects
Implemented*
 - 4. General Activities*
 - 5. Research Publications*
- Appendices*

1. INTRODUCTION

Dr. S. Chand Basha IFS, continued to be the Director of the Institute during the year 1992-93.

As on March 1993 there were 155 regular employees, 46 scientific and 109 technical, administrative and supporting staff (list appended).

The Institute received Rs.80.21 lakhs from the State Government as grant-in-aid (Rs.60 lakhs under Plan and Rs.20.21 under Non-Plan). An amount of Rs.113.71 lakhs was received from other agencies, viz. Kerala Forest Department, Social Forestry Wing of Kerala Forest Department, Ministry of Environment and Forests, Government of India, State Committee on Science, Technology and Environment, Government of Kerala, International Development Research Centre, Canada, Forestry Research Support for Asia and Pacific (FAO, Bangkok), and Cochin Refineries Ltd., Kochi, against pacific time bound research projects.

During the period under report the Institute carried out work on 46 research projects. Final reports of 6 projects were published or submitted to sponsoring agencies and works on 8 projects were in different stages of completion. Field works on 13 ongoing projects were continued while 33 new research projects were initiated. Details of the various projects are given in foregoing sections.

In addition to research work, the Institute was involved in various other activities, viz. organisation of exhibitions and environment education classes, extension work to solve day-to-day problems of the practising forester, publication of information bulletins and hand books, staff training and human resources development.

The Institute organised a National Seminar on Socio-economic Research in Forestry sponsored by the Ford Foundation, USA. The Institute took part in the Science Exhibition organised during the 5th Kerala Science Congress at Kottayam in January 1993.

2. RESEARCH HIGHLIGHTS

Highlights of the research projects completed during the year 1992-93 are given below.

Water Blisters in Teak (KFRI Research Report No.82)

Water blister in teak was reported as early as 1896. It is a peculiar formation wherein the healthy looking trees, mostly along the riversides, exude a straw-coloured sap which leaves a black discolouration on the surface of the bark. Although the problem is not wide-spread it is serious enough to cause concern especially

in certain localities. This investigation was undertaken to study the possible causes for development of water blisters, and the nature and extent of the resultant damage to the timber. Observations showed that the blister is restricted to tree trunk and is always caused by a radial shake in the trunk wood. The loss is serious in terms of log quality, often resulting in rejection of affected timber for high quality veneer, boards or turnery stock. The blister exudes a straw-coloured fluid with a similar chemical composition as that of xylem sap. But the concentration of inorganic salts and pH of blister fluid was very high. The rate of exudation follows a diurnal rhythm similar to root pressure fluid. However, the concentration of salts in blister fluid was higher than root pressure fluid and this accounts for the relatively high osmotic pressure of blister fluid. The flow continues throughout the year and the volume of liquid exuded depends on soil water availability.

Regeneration studies on some important trees in a natural moist deciduous forest ecosystem (KFRI Research Report No.83)

Kerala has approximately 4,100 km² of Moist Deciduous Forests amounting to 43.6% of the total forest area. Regeneration is heavily deficient in these forests. This project was undertaken to investigate the causes of poor regeneration in these forests with special reference to the commercially important species.

Phenological, demographic and phytosociological studies were conducted in the South Indian Moist Deciduous Forests of the Thrissur Forest Division. Various parameters of the dynamics of the seedling populations such as natality, mortality, survival, etc. were studied in two permanent plots.

Biotic factors like fire, illicit cutting of saplings, poles and trees, grazing to greater extent and seed viability in some species to a lesser extent were found to be the reasons hampering regeneration. Due thoughts may be given to participatory management of forest resources, including the involvement of local population.

Establishment of a Bamboosetum (KFRI Research Report No.84)

Bamboo is a valuable renewable natural resource. It has both household and industrial uses. Of about 1,000 bamboo species recorded all over the world, India is endowed with more than 100 species. In order to obtain first-hand knowledge about different species of bamboos, a project was undertaken for collection and establishment of different species of bamboos. So far 20 species of bamboos

have been established in the bamboosetum located at Nilambur in Kerala, India. The propagules used were off-sets, culm or branch cuttings and seedlings. Hormone treatments were given in cases where induction of rooting was necessary in culm and branch cuttings. Observations on culm production and growth were recorded. A list of species with accession number and a plot chart are also provided. Botanical names, vernacular names, distribution and important uses of each species are appended.

Evaluation of social forestry plantations raised
under the World Bank Scheme in Kerala
(KFRI Research Report No.85)

The plantations raised by the Social Forestry Wing of the Kerala Forest Department from 1985 to 1990 in Kerala under the World Bank Scheme were assessed for survival through a stratified two-stage sampling plan. The productivity of four important species was assessed through mean tree method. A survival rate ranging from 60 to 80% and a potential production of 12-20 t ha⁻¹ yr⁻¹ was recorded and were found to be promising. The socio-economic survey revealed that the species planted conformed to the needs of the people. The average sawn timber volume of bigger girth tree was nearly twice that of a medium girth tree and the strength properties of year old wood was very low.

Water use of selected indigenous and exotic trees
(KFRI Research Report No.86)

A study was conducted to determine the water use of *Acacia auriculiformis* by evapotranspiration and compare it with that of *Anacardium occidentale* (cashew) and *Tectona grandis* (Teak). The evapotranspiration from the main canopy was measured by two means, (i) rainfall interception, and (ii) transpiration using Penman-Monteith equation. To determine the water use of the three species, pure plantations of species were selected for intensive monitoring of rainfall interception, soil moisture, leaf water potentials, microclimate above the canopy, stomatal resistance and net photosynthesis.

It was found that Cashew and Acacia consume more water than teak.

3. LIST OF RESEARCH PROJECTS IMPLEMENTED

ONGOING PROJECTS

i) From previous years

- 1) KFRI 104/87 : The improvement of Eucalyptus for disease resistance and higher productivity.
- 2) KFRI 115/87 : Genetic improvement of *Ailanthus triphysa*
- 3) KFRI 128/90 : Water use of selected indigenous and exotic trees.
- 4) KFRI 129/90 : Propagation of medicinal plants, bamboo and rattan by tissue culture methods.
- 5) KFRI 135/91 : Silviculture, management and utilization of bamboo resources in India (Phase I).
- 6) KFRI 136/91 : Rattan management and utilization in Kerala.
- 7) KFRI 137/91 : Studies on the existing flora and specialized ecological niche of the Malayattoor Forest Division, Kerala, and establishment of Nature Study Centre.
- 8) KFRI 139/91 : Evaluation of Social Forestry Plantations raised under World Bank Scheme in Kerala.
- 9) KFRI 140/92 : Management of Teak Defoliator, *Hyblaea puera* using Nuclear Polyhedrosis Virus (NPV).
- 10) KFRI 141/92 : Evaluation of Forest Schemes under Western Ghat Development Programme.
- 11) KFRI 142/92 : Use of alternative materials as containers for raising seedlings.
- 12) KFRI 143/92 : Enhancement of productivity in *Eucalyptus grandis* through fertiliser inputs and other cost effective treatment.
- 13) KFRI 144/92 : Studies on the growth performance of teak nursery stock from genetically better sources for developing improved plantation technology.
- 14) KFRI 145/92 : Ecological studies in disturbed forest ecosystems with special reference to moist deciduous forest.

- 15) KFRI 146/92 : Microfungal flora of Peechi-Vazhani Wildlife Sanctuary.
- 16) KFRI 147/92 : Structural dynamics of teak stand in Kerala.

ii) Initiated during the year

- 1) KFRI 148/92 : Water relations and photosynthesis of oil palms in Peninsular India.
- 2) KFRI 149/92 : Use of mycorrhizal and nitrogen fixing symbiotic in reforestation of degraded soils.
- 3) KFRI 150/92 : Impact of upland management on downstream ecosystems.
- 4) KFRI 151/92 : Soil nutrient management for teak plantations in Kerala.
- 5) KFRI 152/92 : Prey-predator studies in Eravikulam National Park.
- 6) KFRI 153/92 : Survey of small mammals in Kerala with special reference to endangered species and wildlife census in Chinnar Wildlife Sanctuary.
- 7) KFRI 154/92 : Status and food and feeding of larger mammals in Idukki Wildlife Sanctuary.
- 8) KFRI 155/92 : Habitat utilisation by larger mammals in Chinnar Wildlife Sanctuary.
- 9) KFRI 156/92 : Habitat utilisation by animals in Parambikulam Wildlife Sanctuary with special reference to Gaur.
- 10) KFRI 157/92 : Status, food and feeding habits of larger mammals in Chimmony Wildlife Sanctuary.
- 11) KFRI 158/92 : Green belt development at Cochin Refineries Ltd.
- 12) KFRI 159/92 : Studies on ecology and population dynamics of endangered primates in Silent Valley National Park.
- 13) KFRI 160/92 : Status survey of primates in Shendurney Wildlife Sanctuary and adjacent areas.

- 14) KFRI 161/92 : Studies on man wildlife conflict in Peppara Wildlife Sanctuary and adjacent areas.
- 15) KFRI 162/92 : Status, habitat utilization and movement pattern of larger mammals in Wynad Wildlife Sanctuary.
- 16) KFRI 163/92 : Studies on the flora of Shendurney Wildlife Sanctuary with emphasis on endemic species.
- 17) KFRI 164/92 : Vegetation mapping and analysis of Chimmomy Wildlife Sanctuary using remote sensing technique.
- 18) KFRI 165/92 : Vegetation mapping and analysis of Peppara Wildlife Sanctuary using remote sensing technique.
- 19) KFRI 166/92 : Vegetation mapping and analysis of Aralam Wildlife Sanctuary using remote sensing techniques.
- 20) KFRI 167/92 : Vegetation mapping and analysis of Eravikulam Wildlife Sanctuary using remote sensing techniques.
- 21) KFRI 168/92 : Vegetation mapping of the grassland forest ecosystem in Western Ghats of Kerala for afforestation programme.
- 22) KFRI 169/93 : Structure and function of the home garden agro-ecosystem and local forest ecosystem in Kerala.
- 23) KFRI 170/93 : Quantification of soil and water loss from teak and eucalypt plantation.
- 24) KFRI 171/93 : Study of impact of mixed vegetation on the growth of teak plantation.
- 25) KFRI 172/93 : Harvesting and regeneration techniques of reeds.
- 26) KFRI 173/93 : Preparing a management plan for Project Elephant areas in Kerala.
- 27) KFRI 174/93 : Ecological and environmental assessment of forest cover with special reference to soil/vegetation and wildlife.
- 28) KFRI 175/93 : Tracing the epicentres of teak defoliated outbreak in Kerala.

- 29) KFRI 176/93 : Evaluation of parasites for biological control of the teak defoliator.
- 30) KFRI 177/93 : Establishment of permanent plots to demonstrate the effect of protecting teak plantations from the teak defoliator.

LIBRARY

The following documents were acquired:

Items	Nos. acquired during the year	Total numbers as on 31-4-1993
Books	546	12,164
Reprints	216	7,268
Photocopies	15	1,479
Journals subscribed	140	--
Back Volumes	150	6,500

- i) All the acquired books and journals were processed and made available for use.
- ii) The databases created for the Bamboo Information Centre (BIC) were updated.
- iii) BIC-India Bulletin Vol.II, Issue No.1 & 2 was published.

4. GENERAL ACTIVITIES

Consultancies, Extension & Publicity:

The Institute continued to do field advisory work for the Forest Department. Some of the consultancy extension works offered are furnished below.

Scientists in the Division of Agroforestry-cum-Publicity took classes for "Nature Camp" participants at Peechi-Vazhani Wildlife Sanctuary.

Publicity works on "Bamboo preservation of banana props", "Water use of *Acacia auriculiformis*, and "Manufacture of furniture from *Acacia auriculiformis* and *Eucalyptus* wood" have been carried out.

The Agroforestry-cum-Publicity Division is assisting the Wildlife Wing of the Kerala Forest Department to prepare brochures for Wildlife Sanctuaries in Kerala. Brochures for Wayanad and Neyyar Wildlife Sanctuaries are in print.

An exhibition was arranged at the occasion of the Vth Kerala Science Congress held during 26-30, January 1993 at Kottayam.

To transfer the technology from lab to land, an experiment has been set up in a farmer's plot at Vilangannoor. This experiment covers the use of treated bamboo poles for banana and pepper.

Visits and meetings of High Level Committee from Forest Department, Maharashtra, and Shri T.K.A. Nair IAS, Additional Secretary, Department of Wasteland Development, Government of India, New Delhi, have been organised.

Organised the National Science Day Programmes in the Institute on 28-02-1993. Exhibitions, classes and visit to the Institute laboratories were arranged for the public and students.

Advice on pest control was given to the Forest Department on the following:

<u>Tree Species</u>	<u>Location</u>	<u>Nature of Damage</u>
1. <i>Acrocarpus fraxinifolius</i>	Thodupuzha (Social Forestry)	Caterpillar damage
2. Miscellaneous tree species	Kalady (Nature Study Centre)	Caterpillar damage
3. Teak	Karulai	White grub damage

Advice was given to the Kerala Forest Department on the method for estimation of growing stock of reeds in their survey on reeds carried out jointly with M/s. HNL.

Works on validation of equations for predicting gbh from measurements on stump were carried out for the Kerala Forest Department.

Processing of data of the Tribal Survey conducted by the Kerala Forest Department.

Statistical advisory service was offered to other Divisions of the Institute.

Scientist in the Division of Genetics gave a talk on 'Somatic embryogenesis and artificial seeds' at the Centre for Biotechnology, University of Cochin on February 26, 1993.

As per the request from the Botany Department, Kerala University, we have collected and supplied seeds of *Albizia odoratissima*, *A. lebbec*, *Melia dubia* and *Pterocarpus marsupium*.

Five disease problems referred to by the Forest Department were investigated during the period by the Division of Plant Pathology and remedial measures suggested in Extension Reports.

The scientists had prepared and presented the following papers in various conferences:

Forest Resources of Kerala (By Dr. S. Sankar - National Science Day held at STEC, Thiruvananthapuram).

Classification of Rattans (Canes) according to properties and end-uses (National Conference on Standardisation and quality upgradation of Lignocellulosic Panel Products held at New Delhi in December 1992) by Dr. K.M. Bhat.

Application and development of rubber and palm woods and bamboo (By Dr. R. Gnanaharan in the above National Conference).

Variation in the productivity of teak plantations in Kerala (By Smt. Rugmini, Vth Kerala Science Congress held at Kottayam).

Effect of forest fires on Wildlife in two protected areas of Kerala (By Jayson, Vth Kerala Science Congress held at Kottayam).

Diversity of species abundance distribution of Birds in the adjoining forest of Silent Valley National Park (By Jayson, Vth Kerala Science Congress held at Kottayam).

Biodiversity Conservation in Forest Ecosystems in Kerala (By Dr. S. Chand Basha -- Indo-British Workshop on Biodiversity: Forest-ecosystems held at Bangalore).

Procurement of equipments

Optical transferoscope purchased (for Ecology Division).

Binoculars, Compass, etc. awaited from USA (for Wildlife Division).

Omni-mixer generator) - Under Project 140 for Entomology Division.
Horizontal Autoclave)

A portable photosynthesis system) - Under Project 148 for Plant
An opdometer) Physiology Division.

Multimeter for measuring height)
of trees) - for Statistics Division
Computer PC/AT)
Computer and Printer - for Genetics Division
AC Generator of 1400 VV - for Sub Centre, Nilambur

Visit of Scientists Dignitaries to the Institute and Sub Centres

Dr. Wu Dongliang, Forest Entomologist, China.

KC Cherian, Small Enterprise Devpt. Specialist, UNDP, Kenya.

Mr. Roger Finan, Director,, Internal Audit, IDRC, Canada.

Dr. MG Dasthagir, Professor, College of Forestry,
Tamil Nadu Agricultural University.

Dr. SK Jalali, Scientist, Biological Control Centre, NCIPM, Bangalore.

Dr. SSR Bennet, Head, Division of Systematic Botany, FRI, Dehra Dun.

Prof. K. Natarajan, Centre for Advanced Studies in Botany,
Madras University.

IFS Probationers : National Forestry Academy, Dehra Dun.

SFS Probationers : SFS College, Coimbatore.

Range Officer Trainees : 1) Forest Rangers' College, Orissa.
2) Forestry Training Institute, Haryana.
3) EFRC, Kurzeong.

M.Sc. Forestry Students: Tamil Nadu Agricultural University
College of Forestry

Forest Guard Trainees : Forest School, Walayar.
Forest School, Arippa.

Ford Foundation Programme

In order to develop research capabilities and educational materials in Forest Economics, the Institute has received a grant of \$1,52,000 from the Ford Foundation during 1986.

Two major items remaining in the Ford Foundation Programme are:

Indian Dissertation Assistanceship and preparation of an undergraduate text book on Forest Economics. Under Indian Dissertation Assistanceship, six Research Fellows were selected during the last year and were assigned separate topics for doing Ph.D. They have made a good progress in their thesis work.

With regards to the text book, a workshop of the contributors of various chapters was organised in January 1993, for discussing the outline of the chapters. The contributors have agreed to submit the first draft of the book in May 1993.

Research Publications

Socio-economic research in conservation forestry (By Chand Basha, Mammen and Swarupanandan - 1992).

A new species of *Ceropegia* from Western Ghats of India (Swarupanandan, 1992).

A new variety of *Tylophora tetrapetala* (Swarupanandan, accepted for publication in *Blumea*).

Some observations on the genesis and diversification of knowledge and discipline (Chand Basha, Swarupanandan and Sankara Pillai, 1993).
Phytogeographical analysis of the flora of the proposed Pooyamkutty hydro-electric project in the Western Ghats of Kerala (KKN Nair, 1991-92).

South West Indian endemic *Psychotrias* (Rubiaceae) in the proposed Pooyamkutty hydro-electric project area in Western Ghats (KKN Nair, 1992).

Starved tortoise *Geochelone elegans* (Schroepof) in Chinnar Wildlife Sanctuary (Jayson).

Indian Black Drongo (*Dicrurus adsimilis*) feeding on a small bird (Jayson and Ramachandran).

Impact of *Atteva fabriciella* feeding on seed production in *Ailanthus triphysa* (Varma, 1992).

Fungal pathogens of *E. narcissus indica* with special reference to *Paecilomyces* sp. *Phylophaga* (Ali and Varma, 1992).

Studies on the butterflies of Silent Valley National Park (Mathew and Rahmathulla).

Phenology and seasonal growth trend of teak of Nilambur (Sudheendrakumar, KSS Nair, Chacko).

Insect pests of *Casuarina* and their management (Mathew).

Insect pests of teak and their management (Sudheendrakumar).

Insect pests of *Ailanthus* spp. and their management (Varma).

Insect pests of *Albizia* spp. and their management (Varma).

Evaluation of Social Forestry plantations raised under the World Bank Scheme (Jayaraman, Muraleedharan and Gnanaharan 1992).

Farm size and productivity relationship in modern agriculture (Muraleedharan, Rugmini and Anitha, 1993).

Socio-economic conditions of the Cane workers in Kerala (Muraleedharan, 1993) - under print.

Water use of Eucalyptus in Kerala - in growth and water use of forest plantations (Jose Kallarackal, 1992).

Water use of selected indigenous and exotic trees (Jose Kallarackal & Somen).

Structure and properties of South Indian Rattans (Bhat, K.M.).

Sacred thread ceremony and marriage of *Ficus religiosa* with *Azadiracta indica* (Chandrasekhara).

Variation in the productivity of teak plantations in Kerala (Jayaraman and Rugmini, 1993).

Relative susceptibility of Eucalyptus provenances to *Cylindrocladium* leaf blight (Sharma and Mohanan).

Diseases of *Casuarina equisetifolia* in India (Mohanan and Sharma).

Diseases and their management in Social Forestry Plantations in India (Mohanan and Sharma).

BIC - India Bulletin 2(2) is under print.

Appendix I

LIST OF STAFF

Staff as on 31st March 1993

1. Dr. Chand Basha IFS, Director

Administration

2. Shri Joseph K. John	.. Registrar
3. " P Aravindakshan	.. Dy. Registrar (Fin)
4. " P Achuthankutty	.. PA to Director
5. Smt. VK Leela	.. Office Assistant
6. Shri MK Aravindakshan	.. "
7. " MS Sukumaran	.. "
8. " VK Mohanan	.. "
9. Smt. KM Suseela	.. "
10. " KN Rajamma	.. "
11. " M Kamalamma	.. "
12. Shri KK Thomas	.. "
13. " PA Sulaiman	.. "
14. " KA Gopalan	.. "
15. Smt. K. Annapoorni	.. Stenographer
16. " Gracce Andrews	.. "
17. " Mary Kuruvila	.. Receptionist
18. " TV Chandrika	.. Typist
19. Shri KP Manoj	.. "
20. Shri VD Johny	.. Driver
21. " K. Vijayan	.. "
22. " BP Sreedharan	.. Attender
23. " PS Raman	.. "
24. " VN Balakrishnan	.. "
25. " MC Mohandas	.. "
26. " MC Reghunathan	.. "
27. " KR George	.. "
28. " R Chandran	.. Bus Driver
29. " CK Vincent	.. Bus Cleaner

Engineering

30. Shri PR Jose	.. Sergeant
31. " KS Gopalan	.. Overseer
32. " PP Sunny	.. Skilled Maintenance Asst.
33. " KS Karunakaran	.. Attender
34. " K Said Mohammed	.. Watcher
35. " KC Subramanian	.. "
36. " AC Antony	.. "
37. " K Nanu	.. "
38. " KC Subramanian	.. Pump Operator
39. " D Skariah	.. "

40.	"	KM Velayudhan	
41.	"	MR Anilkumar	.. Pump Operator
42.	"	TM Abdul Wahab	.. "
43.	"	PB Sajeev Rao	.. "
44.	Smt.	VM Ammy	.. "
45.	"	KD Chinamma	.. Full-time Sweeper
46.	Shri	VK Mohandas	.. "
47.	Smt.	PK Thankamani	.. Field Worker
48.	"	AK Ammy	.. Part-time Sweeper
49.	"	KC Mary	.. "
50.	"	EV Thanka	.. "
51.	"	KV Bharathi	.. "

Library

52.	Shri	K Sankara Pillai	
53.	"	Subash Kuriakose	.. Asst. Librarian
54.	Smt.	N Sarojam	.. Artist Photographer
55.	Shri	EV Eshac	.. Library Asst.
56.	"	V Asokan	.. Office Asst.
57.	"	PM Venugopalan	.. Key Board Operator
58.	"	CA Jose	.. Typist
59.	"	M Cherukunjan Nair	.. Binder
60.	"	K Chandran	.. Skilled Asst.
61.	"	ET Kuttikrishnan	.. Attender
			.. "

Plant Physiology

62.	Dr.	Jose Kallarackal	
63.	Dr.	KK Seethalakshmi	.. Scientist C
64.	Shri	T Surendran	.. Scientist D
65.	"	CK Soman	.. "
66.	"	MA Sankarankutty	.. Field Asst.
67.	"	MK Sivaraman	.. Attender
			.. Garden Worker

Botany (Taxonomy)

68.	Dr.	KK Narayanan Nair	
69.	Shri	N Sasidharan	.. Scientist C
70.	Dr.	C Renuka	.. "
71.	Shri	MS Muktesh Kumar	.. "
72.	"	KK Unni	.. Scientist D
73.	"	T Prabhakaran	.. Field Asst.
74.	"	PV Subramanian	.. Gardener
75.	Smt.	AM Lalitha	.. Attender
76.	"	TG Chandrika	.. Garden Worker
77.	Shri	M Thankappan	.. "
			.. Field worker

Ecology

78. Dr. K Balasubramanyan	..	Scientist C
79. Dr. K Swarupanandan	..	"
80. Dr. AR Ramachandran Menon	..	"
81. Shri PK Chandrasekhara Pillai	..	Field Asst.
82. " AV Velayudhan	..	Attender

Economics

83. Dr. PK Muraleedharan	..	Scientist D
84. Shri Mammen Chundamanni	..	Scientist D

Entomology

85. Dr. KSS Nair	..	Scientist (Personal Pay)
86. Dr. R Venugopala Varma	..	Scientist C
87. Dr. George Mathew	..	Scientist C
88. Dr. VV Sudheendrakumar	..	Scientist D
89. Shri K Mohanadas	..	Scientist D
90. " P Padmanabhan	..	Field Asst.
91. " KV Sidharthan	..	Attender
92. " P Mohandas	..	Driver

2

Genetics

93. Smt. EP Indira	..	Scientist C
94. Shri EM Muraleedharan	..	Scientist D
95. " KK Ramesh	..	Field Asst.
96. " James Tidode	..	Typist
97. " VS Neelakantan	..	Attender

Pathology

98. Dr. JK Sharma	..	Scientist (Personal Pay)
99. Shri M Balasundaran	..	Scientist C
100. " C Mohanan	..	Scientist D
101. Smt. EJ Maria Florence	..	"
102. Shri MI Mohamed Ali	..	"
103. Dr. KV Sankaran	..	"
104. Shri K Yesodharan	..	Field Asst.
105. " AS Sreenivasan	..	Attender
106. Smt. TS Chandrika	..	Garden Worker
107. Shri PI Madhavan	..	Driver

Silviculture

108. Shri KC Chacko	..	Silviculturist C
109. Dr. R Chandrasekhara Pandalai	..	Scientist D
110. Shri Nandakumar U Narath	..	Scientist E

111.	"	Santhosh K John	..	Range Officer
112.	"	K Rajendran	..	Office Asst.
113.	"	PM Vasu	..	Attender
114.	"	MB Dasan	..	"
115.	"	S Shahul Hameed	..	Driver
116.	"	Kurien Mathew	..	"
117.	"	P Avunni	..	Watcher
118.	"	K Mohanan	..	"
119.	"	V Mohamed Ali	..	Garden Worker
120.	Smt.	AV Thankam	..	"
121.	"	KT Pathumma	..	"
122.	Shri	P Mohammed	..	"
123.	"	CJ John	..	"
124.	"	CP Showkathali	..	"
125.	"	TP Padmanabhan	..	"
126.	"	ET Narayanan	..	Cook
127.	"	E Mohammed	..	Field Worker
128.	"	EP Ulahanan	..	"

Soil Science

129.	Dr.	S Sankar	..	Scientist C
130.	Shri	M Balagopalan	..	"
131.	"	Thomas P. Thomas	..	"
132.	Smt.	MP Sujatha	..	Scientist E
133.	"	D. Sumangala Amma	..	Stenographer
134.	Shri	K Dhorai Raj	..	Driver

Statistics

135.	Dr.	K Jayaraman	..	Scientist B
136.	Smt.	P Rugmini	..	Scientist C
137.	Shri	CN Krishnankutty	..	Scientist D
138.	"	AR Rajan	..	Programmer
139.	"	A Ramakrishnan	..	Stenographer
140.	"	KK Ahmed	..	Attender
141.	"	K Girijavallabhan	..	Driver

Wildlife Biology

142.	Dr.	P Vijayakumaran Nair	..	Scientist C
143.	Shri	PS Easa	..	"
144.	"	KK Ramachandran	..	"
145.	"	EA Jayson	..	Scientist D
146.	"	TJ Alfred Headisjis	..	Stenographer
147.	"	KR Sevaraman	..	Attender

Wood Science

148.	Dr.	R Gnanaharan	..	Scientist (Personal Pay)
149.	Dr.	K Mahabala Bhat	..	Scientist B

150. Dr. K Vishnu Bhat	.. Scientist D
151. Shri TK Dhamodaran	.. "
152. " PK Thulasidas	.. Laboratory Asst.
153. " PA Sankarankutty	.. Attender

Agroforestry

154. Dr. UM Chandrasekhara	.. Scientist D
155. Shri VP Ravindran	.. Field Asst.

Appendix II

CONSIDERATION AND APPROVAL OF THE AUDITED STATEMENT OF ACCOUNTS OF THE INSTITUTE FOR THE YEAR 1992-93

M/s. T.S. Vaidyanatha Iyer & Co., Thrissur, who are the Auditors of the Institute for the year 1992-93, have audited the accounts and certified the Balance Sheet and Income & Expenditure Account. Copies of the same are enclosed. Under Rule 11 of the Memorandum of Association and Rules & Regulations relating to the Institute, audited accounts together with the comments of the Governing Body, if any, have to be sent to Government. A copy of it has to be filed with the District Registrar of Co-operative Societies, Thiruvananthapuram, also. The accounts may be considered and approved. The following draft resolution is placed for consideration.

RESOLUTION

Resolved that the accounts of the Institute for the year 1992-93 as per the Balance Sheet and Income and Expenditure Account audited by M/s. T.S. Vaidyanatha Iyer & Co., Thrissur, are approved.

T.S. VAIDYANATHA IYER & CO.

Chartered Accountants

NEAR THIRUVAMBADI TEMPLE

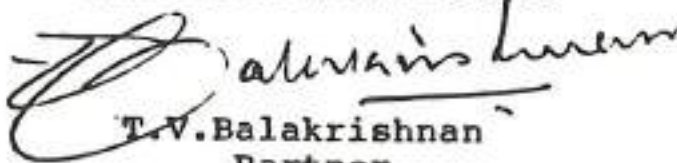
TRICHUR-680 001

AUDITORS' REPORT

We have audited the annexed Balance Sheet of the KERALA FOREST RESEARCH INSTITUTE, PEECHI, as at 31st March, 1993 and the annexed Income and Expenditure Account for the year ended on that date and report that:

- 1) We have obtained all the information and explanations which to the best of our knowledge and belief were necessary for the purpose of our audit.
- 2) In our opinion, proper books of account and records have been kept by the Institute so far as appears from our examination of the books and records.
- 3) The Balance Sheet and the Income and Expenditure Account dealt with by this report are in agreement with the books of account and records maintained by the Institute.
- 4) As in the past, fixed assets have not been physically verified by the Management during the year under review.
- 5) In our opinion and to the best of our information and according to the explanations given to us, the accounts together with the notes forming part of accounts, give a true and fair view:
 - a) in the case of the Balance Sheet, of the state of affairs of the Institute as at 31st March, 1993; and
 - b) in the case of the Income and Expenditure Account, of the excess of Expenditure over Income for the year ended 31st March, 1993.

For T.S.VAIDYANATHA IYER & Co.,
Chartered Accountants


T.V. Balakrishnan
Partner

Trichur
11th October, 1993



KEMALA FOREST RESEARCH INSTITUTE, PERCHI

BALANCE SHEET AS AT 31ST MARCH, 1993

Previous Year Rs		Current Year Rs
	LIABILITIES	
	GENERAL FUND	
2,01,10,413	Balance as per last Balance Sheet	1,86,29,739
75,79,000	Add: Grant received from Government	80,21,467
2,76,89,413		2,66,51,206
90,59,674	Less: Excess of Expenditure over Income	1,00,71,782
1,86,29,739	Grant from Government for Teak Museum	1,65,79,424
10,00,000		10,00,000
	RESERVES AND SURPLUS	
	Surplus in Grants (Excess of Income over Expenditure of completed External Projects)	
3,88,578	Overhead Charges on External Projects capitalised	4,00,743
nil		9,20,956
62,21,705		13,21,699
	CURRENT LIABILITIES AND PROVISIONS:	
	As per Schedule "A"	60,10,475
2,62,40,022	Total Liabilities	2,49,11,598
	ASSETS	
	FIXED ASSETS:	
1,44,77,836	As per Schedule "B"	1,65,41,344
47,17,770	CAPITAL WORK IN PROGRESS:	
	As per Schedule "C"	15,99,190
70,44,416	CURRENT ASSETS, LOANS AND ADVANCES:	
	As per Schedule "D"	67,71,064
2,62,40,022	Total Assets	2,49,11,598

CHAIRMAN, EXECUTIVE COMMITTEE

DIRECTOR



Trichur,
11th October, 1993

Auditors' Report annexed

For T.S.VAIDYANATHA IYER & Co.,
Chartered Accountants

T.V. Balakrishnan
T.V. Balakrishnan
Partner

DIRECTOR
KEMALA FOREST RESEARCH INSTITUTE
PERCHI-680 651, TRICHUR

KERALA FOREST RESEARCH INSTITUTE, PEECHI

INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31ST MARCH, 1993

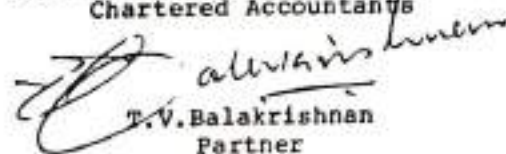
Particulars	Current year Rs	Previous year Rs	Particulars	Current year Rs	Previous year Rs
Salaries and Allowances	58,34,763	61,91,757	Interest on Bank/Treasury Deposits	1,42,580	1,07,393
Contribution to Provident Fund	4,28,822	3,78,774	Rent Recoveries from Staff	1,07,364	1,59,238
Leave Travel Concession	59,367	5,542	Guest House Rent	11,580	4,529
Leave Salary & Pension Contribution	9,983	16,212	Vehicle Hire charge recoveries	44,615	24,760
Group Gratuity Assurance	1,08,697	80,000	Photocopying charges	27,615	15,671
Staff Welfare Expenses	1,00,237	83,032	Other Income	18,944	35,414
Travelling Expenses	1,38,269	1,62,501	Excess of Expenditure over Income	1,00,71,782	90,59,674
Postage, Telephone, Telex	2,90,293	1,45,587			
Printing, Stationery, Photocopy	2,31,054	1,48,192			
Electricity Charges	1,42,242	92,923			
Books and Periodicals	4,77,158	3,22,165			
Seminars and Symposia	39,474	19,870			
General Research Expenses	98,272	1,37,490			
Repairs and Maintenance	12,49,869	8,45,623			
Legal Expenses	8,688	7,064			
Audit Fees	7,500	7,500			
Other Expenses	71,989	57,589			
Depreciation	11,27,803	7,04,858			
Total	1,04,24,480	94,06,679	Total	1,04,24,480	94,06,679

CHAIRMAN, EXECUTIVE COMMITTEE

DIRECTOR

KERALA FOREST RESEARCH INSTITUTE
PEECHI-686 403, TRICHUR

Referred to in our report of even date

For T.S.VAIDYANATHA IYER & Co.,
Chartered Accountants


T.V. Balakrishnan
Partner
Trichur,
11th October, 1993

KERALA FOREST RESEARCH INSTITUTE, PEECHI

CURRENT LIABILITIES AND PROVISIONS:

SCHEDULE - "

Particulars	31-3-1993		31-3-199
	Rs	P	Rs
Research work-in-progress (Schedule-E)	53,67,675	=40	51,76,645=5
Salaries payable	4,53,624	=00	8,82,171=0
T.A. Payable	(-)	504=00	13,661=1
Medical Reimbursement payable	3,118	=70	9,732=9
Lease rent payable to Government of Kerala		16=00	14=0
Electricity Charges payable	3,338	=00	631=5
Printing and Stationery payable		---	3,255=0
CPF Contribution payable	32,985	=00	30,565=0
---do---Garden workers	1,445	=00	870=0
Legal expenses payable		---	---
Repairs and Maintenance payable(General)		---	3,506=7
Repairs and Maintenance of Vehicle payable	24,308	=50	48,519=5
Office expenses payable		---	12,199=0
Postage expenses payable		---	1,500=0
Staff Welfare Expenses Payable	1,000	=00	1,406=0
Audit fee payable	15,000	=00	7,500=0
Newspaper and periodicals payable		---	669=7
Telex charges payable	265	=00	887=0
Expenses payable - Nilambur Sub-centre		---	9,894=0
T.A. to Governing Body Members payable		---	507=0
Other Sundry Liabilities	3,543	=60	2,226=0
Suspense(Entries of 1992 pending adjustment)	89,316	=05	---
Security Deposits from contractors	15,344	=00	15,344=0
T o t a l	60,10,475	=25	62,21,705=19

CHAIRMAN, EXECUTIVE COMMITTEE

DIRECTOR

For T.S.VAIDYANATHA IYER & Co.,
Chartered Accountants

T.V. Balakrishnan
T.V. Balakrishnan
Partner

DIRECTOR
KERALA FOREST RESEARCH INST
PEECHI-680 653, TRICHUR



KERALA FOREST RESEARCH INSTITUTE, PEECHI

Schedule of Fixed Assets as at 31st March, 1993

SCHEDULE "B"

Description	ORIGINAL COST		DEPRECIATION			NET BLOCK		
	As on 1-4-1992	Additions	As on 31-3-1993	As on 1-4-1992	For the year	As on 31-3-1993	As on 31-3-1993	
	Rs	Rs	Rs	Rs	Rs	Rs	As on 31-3-1992 Rs	
Building, Roads and Compound Walls	1,46,21,848	31,18,580	1,77,40,428	27,37,973	7,50,139	34,88,112	1,42,52,316	1,18,83,875
Motor Vehicles	5,67,966	nil	5,67,966	5,60,691	1,837	5,62,528	5,438	7,275
Cycles	1,035	nil	1,035	1,004	6	1,010	25	31
Furniture & Fittings	22,39,066	36,007	22,75,073	14,53,330	1,17,860	15,71,190	7,03,883	7,85,736
Library Books	18,21,571	nil	18,21,571	13,83,716	65,678	14,49,394	3,72,177	4,37,855
Boats	32,220	nil	32,220	21,900	nil	21,900	10,320	10,320
Office Equipments	2,68,602	nil	2,68,602	2,03,736	9,750	2,13,466	55,136	64,866
Insectorium and Potting Shed	1,79,890	nil	1,79,890	73,598	5,315	78,913	1,00,977	1,06,292
Research Equipments	35,11,448	36,724	35,48,172	23,29,862	1,77,238	25,07,100	10,41,072	11,81,586
T o t a l	2,32,43,646	31,91,311	2,64,34,957	87,65,810	11,27,803	98,93,613	1,65,41,344	1,44,77,836

CHAIRMAN, EXECUTIVE COMMITTEE

DIRECTOR

DIRECTOR
KERALA FOREST RESEARCH INSTITUTE
PEECHI-600 053, TRICHUR

For T.S.VAIDYANATHA IYER & Co.,
Chartered Accountants

T.V. Balakrishnan
T.V. Balakrishnan
Partner



KERALA FOREST RESEARCH INSTITUTE, PEECHI

Detailed Statement of Fixed Assets and Depreciation

Description	Rate %	ORIGINAL COST			DEPRECIATION			NET BLOCK	
		As on 1-4-1992 Rs P	Additions Rs P	As on 31-3-1993 Rs P	As on 1-4-1992 Rs P	For the year Rs P	As on 31-3-1993 Rs P	As on 31-3-1993 Rs P	As on 31-3-1992 Rs P
BUILDINGS/COMPOUND WALLS/ROADS									
Building - Office	5	2869510=30	nil	2869510=30	847160=09	101117=51	948277=60	1921232=70	2022350=21
Building - Quarters	5	8927176=62	nil	8927176=62	1112155=66	390751=04	1502906=70	7424269=92	7815020=96
Directors' Quarters	5	nil	708539=91	708539=91	nil	35442=69	35442=69	673097=22	nil
Auditorium cum Water Tank	5	558086=10	nil	558086=10	53750=45	25216=78	78967=23	479118=87	504335=65
Water Supply System	5	nil	1984500=00	1984500=00	nil	99225=00	99225=00	1885275=00	nil
Orchid House - Peechi	5	213839=20	nil	213839=20	20595=30	9662=19	30257=49	183581=71	193243=90
Compound Wall - Pencing	5	1487994=10	nil	1487994=10	599460=41	44426=68	643887=09	844107=01	888533=69
Nilambur Nursery Pencing	5	234674=00	nil	234674=00	104851=36	6491=13	111342=49	123331=51	129822=64
Nilambur Sub Centre	5	nil	425540=20	425540=20	nil	21277=20	21277=20	404263=00	nil
R o a d s	5	304271=84	nil	304271=84	nil	15213=60	15213=60	289058=24	304271=84
W e l l	5	26295=73	nil	26295=73	nil	1314=88	1314=88	24980=85	26295=73
		14621847=89	3118580=11	17740428=00	2737973=27	750138=70	3488111=97	14252316=03	11883874=62
CYCLES									
	20	1034=63	nil	1034=63	1003=72	6=18	1009=90	24=73	30=91
MOTOR VEHICLES									
Bus, Jeeps and Tractor	30	471388=44	nil	471388=44	467564=76	1147=10	468711=86	2676=58	3823=68
Cars and Motor cycle	20	96577=26	nil	96577=26	93126=23	690=21	93816=44	2760=82	3451=03
		567965=70	nil	567965=70	560690=99	1837=31	562528=30	5437=40	7274=71
FURNITURE AND FITTINGS									
Furniture and Fittings	15	1135158=26	36006=75	1171165=01	730153=18	60750=76	790903=94	380261=07	405005=08
Electrical Fittings	15	900402=63	nil	900402=63	577876=25	48378=96	626255=21	274147=42	322526=38
Motor Pumps and fittings	15	33290=10	nil	33290=10	25469=02	1173=16	26642=18	6647=92	7821=08
Air conditioner	15	170215=36	nil	170215=36	119831=57	7557=57	127389=14	42826=22	50383=79
		2239066=35	36006=75	2275073=10	1453330=02	117860=45	1571190=47	703882=63	785736=33
LIBRARY BOOKS									
Library Books	15	1821571=44	nil	1821571=44	1383716=20	65678=29	1449394=49	372176=95	437855=24
BOATS									
Boat		32219=81	nil	32219=81	21900=18	nil	21900=18	10319=63	10319=63



Description	Rate %	ORIGINAL COST			DEPRECIATION			NET BLOCK	
		As on 1-4-1992 Rs P	Additions Rs P	As on 31-3-1993 Rs P	As on 1-4-1992 Rs P	For the year Rs P	As on 31-3-1993 Rs P	As on 31-3-1993 Rs P	As on 31-3-1992 Rs P
OFFICE EQUIPMENTS									
Office Equipments	15	14695=77	nil	14695=77	10457=92	635=68	11093=60	3602=17	4237=85
Typewriters, Calculators and Duplicators	15	120464=26	nil	120464=26	102615=04	2677=38	105292=42	15171=84	17849=22
Photo copiers	15	133441=95	nil	133441=95	90663=52	6416=76	97080=28	36361=67	42778=43
		268601=98	nil	268601=98	203736=48	9729=82	213466=30	55135=68	64865=50
INSECTORIUM & POTTING SHED									
Insectorium	5	115367=88	nil	115367=88	49740=61	3281=36	53021=97	62345=91	65627=27
Potting Shed	5	64522=00	nil	64522=00	23857=05	2033=25	25890=30	38631=70	40664=95
		179889=88	nil	179889=88	73597=66	5314=61	78912=27	100977=61	106292=22
RESEARCH EQUIPMENTS									
Motor Spectro Photo meter	15	230113=83	nil	230113=83	172209=76	8685=61	180895=37	49218=46	57904=07
Microscopes	15	280414=01	nil	280414=01	246877=60	5030=46	251908=06	28505=95	33536=41
Lab Equipments	15	1564827=33	36724=00	1601551=33	1026777=64	80707=45	1107485=09	494066=24	538049=69
Refrigerator	15	52968=70	nil	52968=70	39901=33	1960=11	41861=44	11107=26	13067=37
Micro Computer	15	170626=88	nil	170626=88	98670=64	10793=44	109464=08	61162=80	71956=24
Research 13 Microscope	15	170209=01	nil	170209=01	141725=77	4272=49	145998=26	24210=75	28483=24
Area Meter	15	78920=65	nil	78920=65	54154=52	3714=92	57869=44	21051=21	24766=13
Wood seasoning Plant	15	124831=25	nil	124831=25	81009=89	6573=20	87583=09	37248=16	43821=36
Electronic balance	15	16702=80	nil	16702=80	10073=58	994=38	11067=96	5634=84	6629=22
Utensils	15	35311=99	nil	35311=99	15927=71	2907=64	18835=35	16476=64	19384=28
Micro Sharpener	15	69692=04	nil	69692=04	39691=89	4500=02	44191=91	25500=13	30000=15
Centrifuge	15	594538=10	nil	594538=10	338608=92	38389=38	376998=30	217539=80	255929=18
Shigo Meter	15	30771=85	nil	30771=85	17525=59	1986=94	19512=53	11259=32	13246=26
Computer	15	79984=00	nil	79984=00	45553=52	5164=57	50718=09	29265=91	34430=48
Voltage Stabilizer	15	11536=00	nil	11536=00	1153=60	1557=36	2710=96	8825=04	10382=40
		3511448=44	36724=00	3548172=44	2329861=96	177237=97	2507099=93	1041072=51	1181586=48



KERALA FOREST RESEARCH INSTITUTE, PEECHI

CAPITAL WORK IN PROGRESS =====	SCHEDULE "C"			
	31-3-1993		31-3-1992	
Particulars	Rs	P	Rs	P
Directors Quarters		---	7,08,539	91
Nilambur Construction		---	4,25,540	20
Teak Research Centre	15,83,789	32	15,83,789	32
Advance for construction:				
Kerala State Construction Corpn.Ltd	10,881	00	10,881	00
Kerala Public Health Engg. Department		---	19,84,500	00
Teak Museum II Phase	4,520	00	4,520	00
Total	15,99,190	32	47,17,770	43

CHAIRMAN, EXECUTIVE COMMITTEE

DIRECTOR

For T.S.VAIDYANATHA IYER & Co.,
Chartered Accountants

DIRECTOR
KERALA FOREST RESEARCH INSTITUTE
PEECHI-650 002, TRICHUR

T.V. Balakrishnan
T.V. Balakrishnan
Partner



KERALA FOREST RESEARCH INSTITUTE, PEECHI

CURRENT ASSETS, LOANS AND ADVANCES

SCHEDULE

Particulars	31-3-1993		31-3-1992	
	Rs	P	Rs	P
A) CURRENT ASSETS:				
External Research Work-in-progress (as per Schedule-E)	7,12,165	=80	4,73,182	=8
Stocks as per inventory taken, valued and certified by the Director:				
a) Stock of Stationery		---	27,476	=0
b) Stores and Chemicals		---	1,552	=9
c) Unused Stamps		---	421	=8
Cash in hand	24,583	=95	67,186	=6
Balance with State Bank of Travancore:				
In Savings Bank Account	21,01,993	=15	30,27,649	=0
In Current Account	12,20,837	=25	55,781	=3
In Fixed Deposit Account	15,00,000	=00	29,500	=0
State Bank of India: S.B.Account		---	12,96,582	=0
Sub-Treasury: S.B.Account	98,080	=00	10,63,081	=0
Interest accrued on Fixed Deposit	1,52,616	=00	8,891	=0
Sub Total	58,10,276	=15	60,51,304	=6
B) LOANS AND ADVANCES:				
As per Schedule 'F'				
Advances	6,39,159	=68	6,62,434	=0
Deposits	58,863	=30	55,282	=3
Prepaid Expenses	2,62,765	=00	2,75,394	=9
Sub Total	9,60,787	=98	9,93,111	=2
Grand Total	67,71,064	=13	70,44,415	=8

CHAIRMAN, EXECUTIVE COMMITTEE

DIRECTOR

For T.S.VAIDYANATHA IYER & Co.,
Chartered Accountants

DIRECTOR
KERALA FOREST RESEARCH INST
PEECHI-680 053, TRICHUR

T.V. Balakrishnan
T.V. Balakrishnan
Partner



KERALA FOREST RESEARCH INSTITUTE, PEECHI

Particulars	Grant Received		Amount Spent		Balance as on 31st March 1993		Balance as on 31st March 1992	
	Rs	P	Rs	P	Rs	P	Rs	P
KFRI/Ecol/07	30,000	00	27,619	74	2,380	26	2,380	26
KFRI/Proj.104/87	8,00,000	00	10,18,606	21	(-)2,18,606	21	1,66,181	04
KFRI/Proj.108/87	16,40,437	35	17,37,989	75	(-)97,552	40	(-)97,552	40
KFRI/Proj.109/87	13,09,927	00	10,85,696	93	2,24,230	07	2,56,700	07
KFRI/Proj.114/87(since completed)							(-)38,596	65
KFRI/Proj.117/87(since completed)							(-)11,674	97
KFRI/Proj.119/87	2,94,809	00	3,02,598	12	(-)7,789	12	(-)7,789	12
KFRI/Proj.124/89	1,65,000	00	1,41,523	75	23,476	25	23,476	25
KFRI/Proj./126/89	2,37,450	00	2,14,737	55	22,712	45	78,818	80
KFRI/Proj.127/89	4,52,886	00	4,56,007	95	(-)3,121	95	(-)3,335	00
KFRI/Proj.128/90	8,12,000	00	7,83,432	60	28,567	40	(-)16,612	60
KFRI/Proj.129/90	8,00,000	00	7,89,147	90	10,852	10	4,54,471	60
KFRI/Proj./130/90	2,55,000	00	2,54,601	00	399	00	(-)21,706	15
KFRI/Proj./133/90	1,34,200	00	1,31,293	90	2,906	10	2,906	10
KFRI/Proj./133/91	---		9,423	60	(-)9,423	60	---	
KFRI/Proj.135/91	10,85,143	00	11,04,857	60	(-)19,714	60	(-)33,037	70
KFRI/Proj.136/91	13,50,761	00	9,36,378	05	4,14,382	95	6,20,076	50
KFRI/Proj.137/91	3,84,300	00	3,01,522	10	82,777	90	3,63,900	40
KFRI/Proj.138/91	4,75,600	00	4,65,862	05	9,737	95	1,04,903	70
KFRI/Proj.139/91	3,34,000	00	4,93,788	05	(-)1,59,788	05	(-)1,72,712	80
KFRI/Proj.140/91	10,91,000	00	6,28,307	95	4,62,692	05	10,52,170	95
KFRI/Proj.143/92	10,00,000	00	10,89,731	00	(-)89,731	00	8,00,000	00
KFRI/Proj.144/91	1,50,000	00	1,73,551	00	(-)23,551	00	1,00,000	00
KFRI/Proj.158/92	2,59,690	00	2,90,166	85	(-)30,476	85	(-)4,224	00
KFRI/Proj.147/91	4,61,000	00	2,39,135	50	2,21,864	50	---	
KFRI/Proj.148/91	11,57,000	00	9,83,293	00	1,73,707	00	---	
KFRI/Proj.149/91	2,53,327	50	2,24,272	70	29,054	80	---	
carried over	1,49,33,530	85	1,38,83,544	85	10,49,986	00	36,18,744	28



Particulars	Grant Received		Amount Spent		Balance as on 31st March 1993		Balance as on 31st March 1992	
	Rs	P	Rs	P	Rs	P	Rs	P
Brought forward	1,49,33,530	-85	1,38,83,544	-85	10,49,986	-00	36,18,744	-28
KFRI/Proj.151/91	2,00,000	-00	47,678	-80	1,52,321	-20	---	---
KFRI/Proj.157/92	50,000	-00	29,414	-85	20,585	-15	---	---
KFRI/Proj.150/92	1,97,031	-00	72,376	-15	1,24,654	-85	---	---
KFRI/Proj.152/92	50,000	-00	45,060	-55	4,939	-45	---	---
KFRI/Proj.153/92	80,000	-00	10,776	-65	69,223	-35	---	---
KFRI/Proj.154/92	50,000	-00	19,172	-30	30,827	-70	---	---
KFRI/Proj.155/92	2,00,000	-00	1,34,847	-55	65,152	-45	---	---
KFRI/Proj.156/92	4,70,000	-00	3,86,011	-85	83,988	-15	---	---
KFRI/Proj.159/92	2,75,000	-00	1,73,098	-60	1,01,901	-40	---	---
KFRI/Proj.160/92	40,000	-00	20,862	-15	19,137	-85	---	---
KFRI/Proj.161/92	2,50,000	-00	1,80,199	-00	69,801	-00	---	---
KFRI/Proj.162/92	2,50,000	-00	94,312	-40	1,55,687	-60	---	---
KFRI/Proj.163/92	1,50,000	-00	31,847	-65	1,18,152	-35	---	---
KFRI/Proj.164/92	20,000	-00	1,27,095	-60	(-) 1,07,095	-60	---	---
KFRI/Proj.165/92	50,000	-00	1,18,186	-70	(-) 68,186	-70	---	---
KFRI/Proj.166/92	20,000	-00	72,493	-25	(-) 52,493	-25	---	---
KFRI/Proj.167/92	20,000	-00	51,158	-80	(-) 31,158	-80	---	---
KFRI/Proj.168/92	3,22,000	-00	39,323	-50	2,82,676	-50	---	---
KFRI/Proj.170/92	1,00,000	-00	20,935	-80	79,064	-20	---	---
KFRI/Proj.171/92	50,000	-00	32,861	-55	17,138	-45	---	---
KFRI/Proj.176/92	25,000	-00	13,910	-85	11,089	-15	---	---
KFRI/Proj.177/92	25,000	-00	13,565	-85	11,434	-15	---	---
KFRI/Proj.172/92	1,00,000	-00	91,432	-30	8,567	-70	---	---
KFRI/Proj.173/92	50,000	-00	21,922	-50	28,077	-50	---	---
KFRI/Proj.174/92	3,12,600	-00	2,01,506	-00	1,11,094	-00	---	---
KFRI/Proj.175/92	25,000	-00	21,433	-10	3,566	-90	---	---
KFRI/Proj.178/92	1,20,000	-00	2,618	-00	1,17,382	-00	---	---
carried over	1,84,35,161	-85	1,59,57,647	-15	24,77,514	-70	36,18,744	-28



Particulars	Grant Received		Amount Spent		Balance as on 31st March 1993		Balance as on 31st March 1992	
	Rs	P	Rs	P	Rs	P	Rs	P
Brought forward	1,84,35,161	-85	1,59,57,647	-15	24,77,514	-70	36,18,744	-28
KFRI/Proj.179/92	1,42,400	-00	2,618	-00	1,39,782	-00	---	---
KFRI/Proj.180/92	14,10,000	-00	43,250	-05	13,66,749	-95	---	---
KFRI/Proj.141/91	90,000	-00	79,751	-10	10,248	-90	---	---
KFRI/Proj.145/92	---	---	6,523	-00	(-)6,523	-00	---	---
KFRI/Proj.183/93	---	---	2,618	-00	(-)2,618	-00	---	---
KFRI/Proj.184/93	---	---	2,618	-00	(-)2,618	-00	---	---
KFRI/Proj.185/93	---	---	2,618	-00	(-)2,618	-00	---	---
KFRI/Proj.142/92	36,000	-00	45,874	-90	(-)9,874	-90	---	---
Bamboo Information Centre	13,72,243	-00	9,37,580	-90	4,34,662	-10	4,51,355	-45
Ford Foundation	9,52,406	-00	9,34,490	-45	17,915	-55	5,98,508	-25
Aspinwall Ltd	28,000	-00	20,828	-45	7,171	-55	10,796	-15
Science Congress	1,00,000	-00	1,58,802	-35	(-)58,802	-35	(-)58,802	-35
Plantation Crop	15,000	-00	---	---	15,000	-00	---	---
KFDC Publicity	1,78,400	-00	1,01,580	-00	76,820	-00	---	---
Social Forestry Building	10,00,000	-00	5,69,032	-65	4,30,967	-35	---	---
KFRI Consultancy	2,50,000	-00	---	---	2,50,000	-00	---	---
KFDC	---	---	12,670	-65	(-)12,670	-65	---	---
Green Belt ITI	10,000	-00	1,150	-40	8,849	-60	---	---
Nat.En.Society	10,000	-00	---	---	10,000	-00	---	---
Teak Symposium	---	---	---	---	---	---	(-)7,139	-10
Teak Museum	---	---	4,94,447	-20	(-)4,94,447	-70	---	---
T O T A L	2,40,29,610	-85	1,93,74,101	-25	46,55,509	-60	47,03,462	-68

S U M M A R Y

Amount Receivable in respect of uncompleted external Projects
 Amount in respect of uncompleted external projects pending adjustment

7,12,165-80
 53,67,675-40

4,73,182-84
 51,76,645-52



KERALA FOREST RESEARCH INSTITUTE, PEECHI

LOANS AND ADVANCES

SCHEDULE "F"

Particulars	31-3-1993		31-3-1992	
	Rs	P	Rs	P
Advances:				
Travelling Advance	76,770	=80	49,571	=00
Work advance to Scientists	2,95,487	=51	1,17,098	=91
Vehicle advance to staff	1,20,082	=00	1,64,590	=00
Marriage advance	4,300	=00	---	---
Festival advance	705	=00	675	=00
CPF Subscription Advance	---	---	12	=00
Private telephone call charges recoverable	640	=00	116	=50
Staff Quarters Rent recoverable	---	---	18,14	=00
Dr.C.T.S.Nair, Former Director	12,500	=00	12,500	=00
KFRI Employees Co-operative Society	---	---	0	=20
LIC Premium pending adjustment	---	---	0	=15
INSDOC, Bangalore	1,040	=70	1,040	=70
Kerala High Court	692	=17	692	=17
M/s.Dugar Vermicult	2,912	=00	2,912	=00
M/s.Lal Agencies	4,500	=00	4,500	=00
M/s.ET & TDC Ltd	30,624	=00	30,624	=00
M/s.Patrick Elbee services Ltd., Bombay	1,000	=00	1,000	=00
M/s.Fridge House Ernakulam	---	---	21,12	=00
NRSA, Hyderabad	27,720	=00	52,2	=00
M/s.Forestry Suppliers Inc., USA	---	---	48,455	=00
M/s.Millipore Intertech, USA	---	---	30,189	=00
M/s.Nat Steel Equipment (P) Ltd., Bombay	---	---	95,454	=40
M/s.Timber Press Inc.USA	---	---	4,050	=00
M/s.Bio-Quip Products, USA	---	---	6,692	=00
Murugan Motors	59,000	=00	---	---
Botany Survey of India	162	=00	---	---
HCL	137	=50	---	---
IPRI Comp	231	=00	---	---
International Book Distributors	655	=00	---	---
	=====		=====	
	6,39,159	=68	6,62,434	=03
	=====		=====	
Deposits:				
Telephone Deposit	32,231	=00	28,650	=00
Deposit with KSEB	22,529	=00	22,529	=00
Deposit with I.O.C.	195	=00	195	=00
Deposit with D.F.O.Nilambur	100	=00	100	=00
M/s.Chitra Sales Corporation	1,220	=00	1,220	=00
M/s.Coastal Traders, Trichur	2,000	=00	2,000	=00
M/s.Sri Venkateshwara Gas Agencies	588	=30	588	=30
	=====		=====	
	58,863	=30	55,282	=30
	=====		=====	
Prepaid Expenses:				
Journal Subscription	2,55,415	=00	2,43,955	=90
Vehicle Insurance	2,430	=00	7,619	=00
Telex Rent	4,920	=00	4,917	=00
Computer Maintenance	---	---	18,903	=00
	=====		=====	
	2,62,765	=00	2,75,394	=90
	=====		=====	



NOTES ATTACHED TO AND FORMING PART OF THE ACCOUNTS

- 1) In the opinion of the Management, the current assets, loans and advances have been stated in the Balance Sheet at the value realisable in the ordinary course of business and the liabilities have been properly stated.
- 2) The construction of Director's Quarters, Nilambur Sub Centre Building and Water Supply System were completed long ago and have been occupied/utilised by the Institute. Therefore, the cost thereof has been capitalised and transferred to the appropriate heads of fixed assets and depreciation charged thereon. If and when any final bill is received, necessary adjustments will be made in the books of account.
- 3) Previous year's figures have been regrouped/re-arranged where necessary to conform to current year's lay out/presentation.
- 4) Overhead Expenses recoverable in respect of External Projects have been taken into account and shown under the head "Reserves and Surplus".
- 5) Advances and Deposits are subject to confirmation by the concerned parties.
- 6) Stock of stationery, stores, chemicals etc., as on 31.3.1993 have not been considered in preparing the final accounts, as the amount is not material and significant.
- 7) As the Institute's Boat is already transferred to the Kerala Forest Department, as per Government Orders, no depreciation has been provided thereon.

CHAIRMAN
EXECUTIVE COMMITTEE

DIRECTOR



Trichur,
11th October, 1993

===== DIRECTOR =====
KERALA FOREST RESEARCH INSTITUTE
PEECHI-670 022, TRICHUR
Referred to in our report of even date

For T.S.VAIDYANATHA IYER & Co.,
Chartered Accountants

T.V. Balakrishnan
T.V. Balakrishnan
Partner

Appendix III

MEMBERS OF THE GOVERNING BODY
as on 31st March 1993

1. Shri K.P. Viswanathan .. Chairman
Minister for Forests
Govt. of Kerala
Secretariat
Thiruvananthapuram
2. Dr. R. Ravikumar .. Vice-Chairman
Chairman
State Committee on Science,
Technology & Environment
General Hospital Road
Thiruvananthapuram
3. Shri R. Ramachandran Nair, IAS
Commissioner & Secretary
Forests & Wildlife Dept.
Secretariat
Thiruvananthapuram
4. Shri G. Mukundan, IFS
Prl. Chief Conservator of Forests
Vazhuthacaud
Thiruvananthapuram
5. Shri K. V. Nambiar,
Secretary to Government
Planning & Economic Affairs Dept.
Secretariat
Thiruvananthapuram
6. Shri M.C. Geevaghese
Additional Secretary
Finance Department
Secretariat
Thiruvananthapuram
7. Dr. P. Pushpangadan
Director
Tropical Botanical Garden &
Research Institute
Thiruvananthapuram
8. Dr. A.M. Michael
Vice-Chancellor
Kerala Agricultural University
Vellanikkara

9. Dr. K.N. Subramanian
Director
Institute of Forest Genetics &
Tree Breeding
Coimbatore
10. Shri A.K. Mukherji, IFS
Inspector General of Forests
Ministry of Environment & Forests
New Delhi 110 003
11. Shri S. Shyam Sundar, IFS (Retd.)
2989/D, 12th Main
HAL 2nd Stage, Indira Nagar
Bangalore 560 038
12. The Chief Conservator of Forests (Research)
Adayar
Madras 600 020
Tamil Nadu
13. Shri A.K. Kaderkutty
Managing Director
Western India Plywood Ltd.
Baliapatam
Kannur 670 010
14. The Director
Kerala Forest Research Institute
Peechi

Appendix IV

MEMBERS OF THE EXECUTIVE COMMITTEE as on 31st March 1993

1. Dr. R. Ravikumar .. Chairman
Chairman
State Committee on Science,
Technology & Environment
General Hospital Road
Thiruvananthapuram
2. Shri R. Ramachandran Nair, IAS
Commissioner & Secretary
Forests & Wildlife Dept.
Secretariat
Thiruvananthapuram
3. Shri G. Mukundan, IFS
Prl. Chief Conservator of Forests
Vazhuthacaud
Thiruvananthapuram
4. Dr. P. Pushpangadan
Director
Tropical Botanical Garden &
Research Institute
Thiruvananthapuram
5. Dr. K.N. Subramanian
Director
Institute of Forest Genetics &
Tree Breeding
Coimbatore
6. The Director
Kerala Forest Research Institute
Peechi