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# Coffee Research Foundation

An official organisation under the Coffee Board of Kenya



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## ANNUAL REPORT AND ACCOUNTS 1994 - 1995

657-3  
CRF

# ANNUAL REPORT AND ACCOUNTS OF THE COFFEE RESEARCH FOUNDATION (CRF) FOR THE YEAR ENDED 30 SEPTEMBER 1995

## STATEMENT BY THE CHAIRMAN OF THE BOARD

### 1.1 Introduction

The current Board of the Coffee Research Foundation (CRF) was reconstituted on 3 March 1994. Four Board meetings were held during the year. In addition, Board members attended regular quarterly meetings as well as subcommittees and special meetings of the following standing committees: (1) Finance/Tender Committee (2) Coffee Research Advisory Committee (3) Staff Committee and (4) Technical Evaluation Committee.

The Annual General Meeting of Subscribers was held on 6 February 1996.

### 1.2 Capital Development

Construction of the Hostel Complex which started in August 1993 was to be completed and handed over to the Foundation in June 1996.

### 1.3 Research Activities

The main Research Activities for the year under review have been outlined in this report. Major emphasis continued to be laid on protection of the coffee crop against diseases, insect pests and reduction of production cost. In the year under review, two new fungicides were recommended for the control of Coffee Berry Disease (CBD), three for Leaf Rust control and two for the control of Bacterial Blight of Coffee (BBC).

The CRF continued to put emphasis on Integrated Pest Management (IPM) strategy. Natural Enemies of the coffee insect pests were collected from coffee in the fields, reared in the CRS Laboratory and released into the farmers' fields. This project was given priority and the aim was to promote biological control of insect pests on Kenya coffee and minimize use of insecticides thereby reducing the cost of coffee growing and promoting a clean environment. On chemical control of insect pests, three insecticides for the control of Leafminer and two formulations for the control of *Aspidiotus* were recommended in the year under review.

Breeding and selection work aimed at improving commercial coffee varieties for disease resistance, yield and quality continued. The idea was to obtain better yield targets and lower coffee production costs. Field performance assessment of Ruiru 11 in terms of yields and quality in all the coffee growing regions of the country continued to be undertaken through adaption trials

Blind liquoring of cup quality of Ruiru 11 continued during the year and the results continued to confirm that the cup quality of Ruiru 11 is as good as that of the traditional varieties such as SL 28 and SL 34.

The Agricultural Economics Section undertook research geared towards the evaluation of the effects of coffee prices and liberal marketing policies on coffee production profitability and farm income; economics of coffee production; adoption of performance of Ruiru 11 and a review of input marketing and distribution. The favourable world prices resulted into higher producer prices in the country and the implementation of the liberalization policies led to relatively high coffee sale realisation. The average cost of production in the smallholder sector was Kshs.52,092/= per metric tonne while the average cost in the Estate sector was Ksh.102,516/=, per tonne of clean coffee.

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Provision of routine services to coffee growers in the areas of soil and leaf analysis, production of planting materials in form of seeds and seedlings as well as advisory work and training continued. Education of farmers through Agricultural Society of Kenya (ASK) shows and Field Days continued.

#### **1.4 Staff Matters**

As indicated elsewhere in this report, seven Senior Staff members were recruited during the year under review while four Senior Staff members left the CRF. Staff training continued in form of formal training, tours conferences and scientific workshops participation. Those who benefited from local and overseas training are indicated in this report

#### **1.5 Finances**

Total income generated during 1994/95 financial year totalled Kshs 247,368,650 of which Kshs 199,501,238 was the Coffee Board of Kenya contribution. The rest - Ksh 46,815,412 was generated internally through coffee proceeds and dividends and a further Kshs 1,052,200 being Kenya Government's contribution

Total expenditure for 1994/95 rose from the previous year's expenditure of Kshs 189,664,886 to Kshs 215,415,818 an increase of 13.58%. After the previous year adjustments a surplus of Kshs 36,951,839 was realised which reduced the Research Reserve Fund deficit to Ksh 6,421,437

#### **1.6 Future Plans**

The CRF is still continuing to search for ways and means of producing coffee at minimum cost. Vegetative propagation of Ruiru 11 variety and other important varieties will be intensified in addition to seed production. The CRF approached external donors through the government for funding for the construction of a Tissue Culture facility at the Coffee Research Station (CRS). The government has indicated that funds have already been earmarked for this project under STABEX.

It is hoped that more funds will be availed for the planned activities mentioned in this report and for purchasing laboratory equipment for successful execution of the research programmes.

**A M MWANGI  
CHAIRMAN,  
COFFEE RESEARCH FOUNDATION BOARD**



# COFFEE RESEARCH FOUNDATION BOARD OF DIRECTORS



MR. A.M. MWANGI  
CHAIRMAN



DR. W.R. OPILE  
DIRECTOR OF RESEARCH



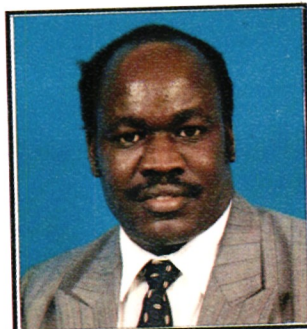
MR. J.E. MUHIA  
SECRETARY



MR. P. MWANGI



MR. S.C. MUCHIRI



MR. J.A. ODOYO



MRS. N.N. KAMINCHIA



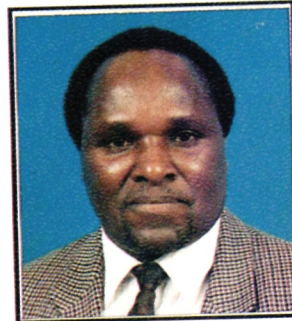
MISS B.W. KING'ORI



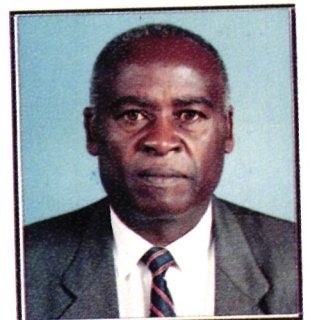
MR. R.M. MAKARA



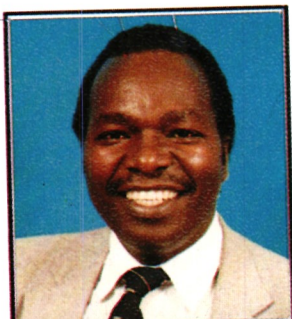
REV. E. KABII



DR. A.M. MAILU



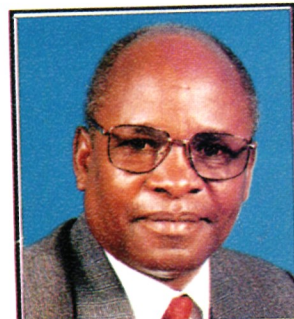
DR. M. ISIAHO



PRO. D.M. MUKUNYA



MR. J.M. NZIOKI



MR. J.M. MUGHO



MR. S.K. WARUINGE



# COFFEE RESEARCH FOUNDATION HEADS OF SECTIONS



**Dr. P.K. Michori**  
Deputy Director of Research



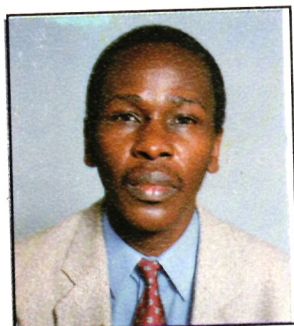
**Dr. D.M. Masaba**  
Plant Pathology



**Mr. J.E. Muhia**  
Chief Accountant Co. - Secretary



**Mr. M.P.H. Gathaara**  
Crop physiology



**Mr. C.O. Ogwanda**  
Plant Breeding



**Mr. J.N. Mburu**  
Chemistry



**Mr. C.B. Nyakeri**  
Internal Audit



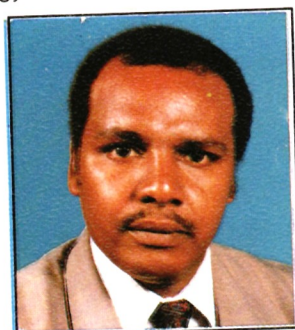
**Dr. J.M. Njoroge**  
Field Experimental Agronomy



**Mr. A.M. KARANJA**  
Agricultural Economics (Acting)



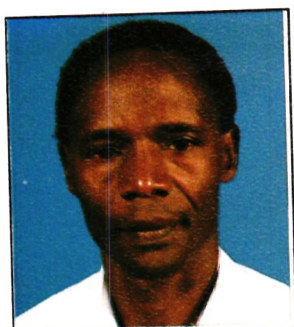
**Mr. H.M. Mugo**  
Entomology



**MR. E.K. MAINA**  
Administrative Manager



**Mr. M.K. Nyaga**  
Rersearch Liaison Training & Advisory



**Mr. J. M. MAINA**  
Chief Estates Officer

ANNUAL REPORT AND ACCOUNTS OF THE COFFEE RESEARCH FOUNDATION FOR THE YEAR  
ENDED 30TH SEPTEMBER 1995

Registered Office

Coffee Research Foundation  
P O Box 4, RUIRU, Kenya  
Telephone 54027/45048/54132 THIKA

Fax : 54133

**2.0 BOARD OF DIRECTORS AS AT SEPTEMBER 1995**

Mr A M Mwangi	Chairman
Mr R M Makara	Chairman, Coffee Board of Kenya
Mr. P Mwangi	
Dr. M Isiaho	
Mr J M Nzioki	
Rev E M Kabii	
Mr S C Muchiri	
Mr. J P Nduati	Ministry of Agriculture
Dr. Cyrus C. Ndiritu	Director, Kenya Agricultural Research Institute (KARI)
Mr JPK Mbandi	Director of Agriculture, Ministry of Agriculture
Dr Wilson R. Opile	Director of Research, Coffee Research Foundation
Mr J A Odoyo	
Mr J E Muhia	Secretary

**Co-opted Members**

Prof D M. Mukunya	Dean, Faculty of Agriculture, University of Nairobi
Mr S K. Waruingi	
Mr. J M Mugho	
Mr A. M Mwangi	was due to retire by rotation and being illegible was re-elected
Mr J P. K Mbandi	was due to retire by rotation and being illegible was re-elected

The 29th Annual General meeting of Subscribers was held on 8 December 1994

Four meetings were held during the year as follows

- One hundred and twenty third meeting on 8 December 1994
- One hundred and twenty fourth meeting on 9 February 1995
- One hundred and twenty fifth meeting on 11 May 1995
- One hundred and twenty sixth meeting on 10 August 1995

**ANNUAL REPORT AND ACCOUNTS OF THE COFFEE RESEARCH FOUNDATION  
FOR THE YEAR ENDED 30 SEPTEMBER 1995**

**Coffee Research Advisory Committee as at 30 September 1995**

Prof. D. M. Mukunya	Chairman
A. M. Mwangi	Chairman, CRF Board
Dr. Wilson R. Opile'	Director of Research, CRF
Dr. A. M. Mailu	KARI
Mr. S. S. Cheruiyot	Kericho (Small Scale)
Mr. R. Omanyala	Busia (Small Scale)
Mr. Elisha Onyango	South Nyanza (Small Scale)
Mr. J. Kanyiri	Nyeri (Small Scale)
Mr. R. M. Makara	Kirinyanga (Small Scale)
Mr. William Kisaka	Trans Nzoia (Large Scale)
Mr. J. K. Kinoti	Coffee Board of Kenya
Mr. J. M. Mathenge	Solai/Subukia (Large Scale)
Mr. S. Mokua	Kisii (Small Scale)
Mr. Julius Karicho	Meru (Small Scale)
Mrs. Mary D. Ntipilit	Kajiado (Small Scale)
Mr. J. K. Mbatha	Pesticides Chemicals Association (K)
Mr. E. K. S. Mbogo	Embu (Small Scale)
Mr. Walter Wambu	Muranga (Small Scale)
Mr. J. G. Muasya	General Manager, SCIP
Mr. P. L. M. Musyimi	Ministry of Cooperative Development
Mr. A. M. Michaelides	Ruiru (Large Scale)
Mrs. Jane A. Otadoh	Ministry of Agriculture, Livestock Development and Marketing
Mr. J. P. Nduati	Ministry of Agriculture, Livestock Development and Marketing
Mr. J. M. King'angi	Kenya Planters' Cooperative Union
Dr. P. K. Michori	Deputy Director of Research, CRF/Secretary
Mr. J. E. Muhia	Chief Accountant/Company Secretary

Four Meetings were held during the year as follows:-

- One hundred and ninety fourth meeting on 18 October 1994
- One hundred and ninety fifth meeting on 19 January 1995
- One hundred and ninety sixth meeting on 20 April 1995
- One hundred and ninety seventh meeting on 20 July 1995

**ANNUAL REPORT AND ACCOUNTS  
(1 October 1994 to 30 September 1995)**

**3.0 STAFF**

**3.1 Promotions**

The Staff Committee of the Coffee Research Foundation (CRF) Board approved the following promotions according to respective schemes of service to take effect from 1 October 1994.

Mr J N Mburu, formerly Senior Research Officer II, promoted to Senior Research Officer I

Mr J K. Mburu, formerly Senior Research Officer II, promoted to Senior Research Officer I

Mr. P K Mason, formerly Research Officer I, promoted to Senior Research Officer 11

Dr G M Kairu, formerly Senior Research Officer I, promoted to Principal Research Officer

Mr M K Nyaga, formerly Senior Advisory Officer, Promoted to Principal Advisory Officer

Mr J K Kimemia, formerly Senior Research Officer II, promoted to Senior Research Officer I

Mr C O. Agwanda, formerly Senior Research Officer II, promoted to Senior Research Officer I

Mr J N Wamatu, formerly Research Officer I, promoted to Senior Research Officer II

Mrs L K Ndirangu, formerly Research Officer II, promoted to Research Officer I

Miss C W Gitimu, formerly Advisory Officer II, promoted to Advisory Officer I

Mr. B S Dooso, formerly Senior Laboratory Technician, promoted to Chief Laboratory Technician

Mr J. M. Gitau, formerly Senior Field Officer II, promoted to Senior Field Officer I

Mr M M Kariri, formerly Laboratory Technician II, promoted to Laboratory Technician I

Mrs S A Orwa, formerly Laboratory Technician III, promoted to Laboratory Technician II

Mr J. P. M. Maingi, formerly Senior Field Officer II, promoted to Senior Field Officer I.

Mr K M. Gitau, formerly Laboratory Technician II,

Mr G K Nganga, formerly Field Officer II, promoted to Senior Field Officer II.

Mr. S. K Kamau, formerly Field Officer II, promoted to Senior Field Officer II

Mr J S G. Mwema, formerly Field Officer II, promoted to Senior Field Officer II

Mr F M Manzi, formerly Field Officer III, promoted to Field Officer II

Mr M W. Kingoro, formerly Field Officer II, promoted to Senior Field Officer II

Mr A K Ngethe, formerly Field Officer II, promoted to Senior Field Officer II

Mr J M Kuria, formerly Estates Assistant, promoted to Assistant Estates Officer

Mr. J P Kuria, formerly Assistant Estates Officer, promoted to Estates Officer

Mr J N Mwai, formerly Accounts Assistant, promoted to Senior Accounts Assistant

Mr D N Muingi, formerly Administrative Officer, promoted to Senior Administrative Officer

Mr F. O Bolo, formerly Senior Administrative Assistant, promoted to Administrative Officer

Miss. J N Ndario, formerly Assistant Cateress, promoted to Cateress.

Mr C N A Ngwaye, formerly Supplies Assistant, promoted to Assistant Supplies Officer

Mrs A K. Kiara, formerly Senior Personal Secretary, promoted to Executive Secretary

Miss M W Rugano, formerly Senior Personal Secretary, promoted to Executive Secretary

Mrs. V. M Kiarie, formerly Technical Secretary I, promoted to Personal Secretary I

Miss Atieno Odeyo, formerly Personal Secretary II, promoted to Personal Secretary I

Mrs P N. Muriithi, formerly Technical Secretary II, promoted to Personal Secretary II.



Mrs. Sarah Waka, formerly Technical Secretary II, promoted to Technical Secretary I.

Miss. P N. Mbataru, formerly Technical Secretary II, promoted to Personal Secretary II

Miss B N. Muchiri, formerly Technical Secretary II, promoted to Technical Secretary I.

Mr P M Gathuka, formerly Field Assistant II, promoted to Field Officer III

Mr. J O. Wasambila, formerly Senior Field Assistant, promoted to Technician

Mr J P. T. Rotich, formerly Senior Laboratory Assistant, promoted to Laboratory Technician III.

Mr. P. K. Muiruri, formerly Laboratory Assistant I, promoted to Laboratory Technician III.

Mrs. J. S. Agwanda, formerly Technical Typist II, promoted to Technical Secretary II

### **3.2 Recruitments**

Mr R M. Nuthu, joined CRF service as Security Officer w.e.f 16 June 1994.

Mr. D. K. Gitau, joined CRF service as Clinical Officer w.e.f. 29 July 1994.

Mr. G. O. Omondi, BSc Agric., joined CRF service as Research Officer in Entomology Section w.e.f. 1 November 1994.

Mr. E. K. Gichuru, BSc, MSc, joined CRF service as Research Officer in Plant Pathology Section w.e.f. 13 December 1994.

Mr. J. Mwangi, Dip. Agric., joined CRF service as Field Officer in Entomology Section W.E.F 28 November 1994

Mr. S. M. Njeru, Dip.. Farm Management, joined CRF Service as Field Officer in plant Pathology Section w.e.f 1 December 1994

Miss. S. N. Nyaga, Dip. Horticulture joined CRF service as Field Officer in plant Pathology Section w.ef 3 January 1995

### **3.3 Appointments**

Dr D M Masaba, Head Plant, pathology section was appointed acting head of Breeding Section w ef. 19 November 1994

Mr. S. W. Mureithi, Farm Manager of Jacaranda and Rukera Farms was appointed Farm Manager of Azania Farm w.e.f 8 September 1994

### **3.4 Departures**

Mr C M Mburugu, Senior Field Officer in Breeding Section left CRF service on 31 December 1994

Mr J T Thuo, Bsc, Msc, Research Officer (Analytical Chemist) left CRF service on 13 January 1995

Mr N K Ojijo, Bsc, Msc, Research Officer (Quality Chemist) left CRF service on 28 February 1995

Mr A S K. Maithia. Dip Farm Management (Egerton), Dip (CIMMYT) formerly Farm Manager, Azania, left CRF Service on 12 January

### **3.5 Conferences/Workshops**

Dr Wilson R. Opile, Director of Research, attended a meeting on Conservation of Coffee Genetic Resources in Africa, held in Nairobi between 23 - 26 May 1994. The meeting was organised by International Board of Plant Genetic Resources

Dr. Opile also attended a meeting held in Dschang, Cameroun between 20 - 23 June 1994. The meeting was organised by the Coffee Anthracnose Network in Africa (CARNA)

Dr Opile attended the 2nd meeting of the African Coffee research Network (ACRN) held in Lome, Togo between 17 and 18 November 1994 in his capacity as Chairman of the ACRN. Dr. Opile took the opportunity to attend the Inter African Coffee Organisation (IACO) General Assembly held in the same place between 21 - 25 November 1994.

Dr P K Michori, Deputy Director of Research attended the Fifth International Congress for Computer Technology in Agriculture organised by the Royal Agriculture Society of England (RASE) at Churchill College, Cambridge, UK between 29 June and 15 July 1994

Dr (Mrs) D M Masaba, Head of Plant Pathology Section, attended a meeting of the Coffee Anthracnose Network in Africa (CARNA) held in Dschang, Cameroun between 20 -23 June 1994 in her capacity as the Chairperson of the Network

Dr Masaba also attended the 1994 Brighton Crop Protection Conference held in the United Kingdom between 21-25 November 1994

Dr Masaba attended the Regional Integrated Pest Management Workshop organised by the International Institute of Biological Control (IIBC) in Masinga Lodge between 13 - 17 February 1995

Dr. Masaba attended the Project Co-ordination meeting for STD 111-Creation of Coffee Varieties Resistant to Coffee Berry Disease in Africa held in Nairobi between 20 - 24 March 1995.

Dr J. M. Njoroge, Head of Experimental Agronomy section attended the International Symposium

Plantation Crops which was held in Calicut, India, between 30 November and 12 December 1994. He thereafter visited the International Crops Research

Institute on Semi-arid and Tropics (ICRISAT) in Hyderabad and the All India Research Centre in New Delhi.

### 3.6 TRAINING / COURSES

Mr. C. O. Omondi, BSc Agric Msc, Research Officer in Breeding Section proceeded to Germany on 5 April 1994 to undertake a PhD degree course on a split programme for a period of one-and-a half years on DAAD sponsorship

Mr. C O Agwanda, Bsc, MSc, Head of Coffee Breeding Unit was sponsored by the Coffee Research Foundation to undertake a PhD degree study at the Ecole Nationale Superieure Agroconomique (ENSAM) in Montpellier, France on a split programme w.e.f November 1994.

Mr. J N Wamatu, BSc, MSc, Research Officer in Coffee Breeding Unit was awarded a scholarship by the German Academic Exchange Programme (DAAD) to undertake a PhD degree course on a split programme at Humboldt University w.e.f. September 1994

Mr. E K. Maina, BA (Hons), Administrative Manager, attended a four weeks course on "personnel Management: An African Perspective" conducted by the Eastern and Southern Management Institute in Harare, Zimbabwe from 14 November to 9 December 1994

Mrs L W Njeru, BSc, MSc, Advisory Officer in Research Liaison, Training and Advisory Section attended the "International Course on Basic Principles of Planning Integrated Plant Protection Measures" held in Munich, Germany, from 13 May to June 1994. She was sponsored by the German Foundation for International Development (DSE)

### 3.7 Leave of Absence

Mr. J. K. Nyoro's, BSc., Msc., (Agric. Economist) Senior Research Officer and head Economics Section period of leave of absence was extended by a further period of one year w.e.f. 1 November 1994

Mrs. L. W. Njeru, BSc., Msc., Advisory Officer in Research Liaison, Training and Advisory Section proceeded on a two-year leave of absence w.e.f. 1 November 1994

## 4.0 RESEARCH ACTIVITIES

### 4.1 Plant Pathology

The Pathology Section continued with the work on evaluation of pesticides for the control of three major coffee diseases. Disease control by cultural methods and use of resistant varieties was also carried out. The Section also offered advisory services involving diagnosis and monitoring of minor and/or a new coffee disease situation as well as checking the quality of recommended fungicides on the market.

Eight new fungicides were screened in the laboratory during the year under review for the effects on coffee berry disease (CBD) and coffee leaf rust (CLR). Among these, two (ASCE 6328 and BAS 490) were selected for field evaluation against CBD alone, and three (Worprocop, Orioncop and Opus) were selected for evaluation against both CBD and leaf rust.

Field evaluation of four new fungicides for control of CBD was carried out at Kiamumbi Estate during 1993/94. Two of these products, namely Copper Nordox Super and Chlorothalonil (Ex ISK Biotech) were recommended for CBD control in Kenya.

Another trial involving tank mixtures of Fluazinam and Copper and Fluazinam and Daconil was sited at Jacaranda Estate. All treatments reduced CBD but the highest cost: benefit ratio was given by Fluazinam (0.1%) on its own followed by

the Fluazinam / Copper tank mixture. The evaluation continued into the third year.

New coppers were evaluated for their performance against CLR at Murera and Azania Estates. The three coppers, namely Kocide DF, Copper Nordox Super and Demildex have been recommended for the control of coffee leaf rust in Kenya.

Field observations of persistence of a ground applied systemic fungicide (Amour-G) against CLR were conducted at Azania Estate. The results obtained indicate that Amour-G applied at 38 g/tree once or twice per year, or applied at 19 g/tree once or twice per year continued to give control of CLR one year after application had ceased. Amour-G has been recommended for CLR control at 19 g/tree and applied on the ground only once in two years. A trial to evaluate the effects of irrigation on the incidence and control of CBD was in its second year at Jacaranda Estate. Control of disease was not affected by the application of irrigation water.

Two new coppers, Kocide DF and Funguran-OH, were evaluated for Bacterial Blight of Coffee (BBC) control at Ceres and Meruai Estates. The two coppers were comparable in performance to Kocide 101 and have been recommended for control of BBC in Kenya.

A trial on integrated control of BBC using cultural and chemical methods confirmed that the practice of pruning infected shoots followed by application of copper sprays, was a beneficial recommendation for the control of BBC.

Long term effects of copper sprays to control BBC and CBD on cropping and tree growth has been monitored for the last ten years. All treatments controlled both CBD and BBC. However, no symptoms of copper phytotoxicity on shoot emergence and growth extension were recorded during the year.

Screening for resistance to CBD was carried out on 798,000 coffee seedlings from the Coffee Breeding Programme.



and the results were used by the Coffee Breeding section.

A total of 101 samples of fungicides from Estate and Co-operative Societies were analyzed in order to determine if the percentage of the active ingredients in them conformed to the recommended products. The results indicated that one sample was substandard.

#### 4.2 Coffee Breeding

The Breeding Section continued with breeding and selection work aimed at improving commercial coffee varieties for disease resistance, yield and quality. The idea is to obtain better yield targets compared to the existing varieties. The coffee germ plasm preserved in the museum plots 5 and 13 at the coffee Research Station's Jacaranda Farm and the Ethiopian Collections (Ex-FAO, 1964 and Ex-ORSTOM, 1970) planted in fields B1 and B14 at Oaklands Breeding Station continued to be maintained on routine basis.

Hybridization and selection work were continued by making relevant crosses, selfings and test-crosses as well as by evaluating progenies of similar crosses made in the past. The objective of these programmes is to improve the commercial cultivars (such as SL28, SL 34, and K7) for CBD resistance, yield and quality. Up to 7238 crosses of individual trees selected from advanced breeding lines with SL 28 and K7 were made in order to identify genotypes homozygous for CBD resistance genes at a minimum of two resistance loci.

A trial on test crosses planted out in field B19A showed significant variation for yield and bean quality traits, which can be further selected.

The adaptation trials with cultivar Ruiru 11 were observed during their fourth year of production in Kisii, Koru and Jacaranda sites while Taita and Meru sites were in their third and Machakos in its first year. Variations were observed for cumulative yield depending on location and genotypes.

Similar observations were made for liquor quality where performance of genotypes varied from class 1 (excellent liquor) to class 5; depending on genotype and location.

Hybrid seed output was 3 million seeds. Over 6 million flowers were emasculated and pollinated for the purpose of hybrid seed production during the same year.

Vegetative propagation of Ruiru 11 continued as a supplementary source of Ruiru 11 planting materials. This involved rooting stem cuttings and grafting on SL 28 rootstocks. A total of 109,508 rooted cuttings and 59,834 seedlings were raised and distributed to farmers.

#### 4.3 Agronomy

During the year under review, research work was conducted on fertilizers, spacing, pruning, intercropping coffee with annual crops as well as perennial fruit trees, and methods of replacing established coffee with the hybrid coffee Ruiru 11 and weed control in coffee.

The trial initiated at Ruiru, Kisii Koru and Meru in 1986 to determine the effects of NPK fertilizer rates on yields of Ruiru 11 at various densities (2400, 3200 and 4000 trees/ha) continued. The fertilizer rates used were 80, 260 and 320 kg N/ha. Results obtained so far indicate that yields increased with increasing densities at Koru and Ruiru. Trees fertilized with 320 kg N and 100 kg P gave the highest coffee yields. The trial is in the second coffee cycle.

A trial was started in 1989 at Kiamworia to find out the coffee yield of Ruiru 11 in response to planting hole size and rates of cattle manure applied. The hole size of 60 cm x 60 cm and application of farm yard manure at a rate of 25% gave the highest yields.

Various annual crops were planted amongst young Ruiru 11 trees in 1987 at Mariene, Kisii and Koru. Except for the coffee trees intercropped with maize at Ruiru, and finger millet, sweet potatoes, tomatoes and pineapples at Mariene, all other food crops did not affect coffee yields.

Other studies of intercropping involved evaluating perennial fruit trees such as macadamia, guavas, bananas, custard apples, Pawpaws and avocados planted amongst Ruiru 11 and SL 28 at Kitale and Ruiru in 1989 as suitable economic intercrops and for their shade effect. Coffee intercropped with guavas, bananas and custard apples produced the lowest yields. The study is still in progress.

The processing Unit of Agronomy Section continued to process seed from the traditional varieties for sale. During the year under review, 253 kg of seed was distributed to the farmers.

Meteorological records continued to be compiled routinely. These included records done at Ruiru, Mariene (Meru), Koru and Kisii Substations.

#### **4.4 Chemistry (Soil Fertility, Plant nutrition, Coffee Quality, Processing and Residue Analysis)**

During the year under review, the Chemistry Section continued to analyze soil and leaf samples from coffee farmers at a nominal charge and also from Research Sections. A total of 3541 soil samples, 1786 leaf samples and 56 fertilizer and 72 manure samples were analyzed. The advisory soil samples were received from 145 Estates and 371 Smallholders while leaf samples came from 156 Estates and 306 Smallholders. An overall increase was recorded over last year's figures of soil and leaf analysis.

A trial to study manurial effects of coffee pulp and cofuna on mature Arabica coffee conventionally and hedgerow spaced continued at Azania and Mariene respectively. Initial soil and leaf analysis results showed that the soil was moderately acid at Azania and strongly acid at Mariene. The two waste manures when enriched with a slow-releasing magnesium fertilizer (Kieserite) outyielded the standard cattle manure treatment. A similar trial has been sited at Koru and Kisii.

A trial was started at Mariene (Meru) in 1989 in order to determine the effects and interactions of Magmax, Nitrogen,

Phosphate and Potash in coffee yields and quality on acid soils of Meru. The coffee was spaced at 2m x 1.25 m but this spacing was altered in 1991 by removing three middle trees in a north-south direction. An effective spacing of 2.0 m x 1.5 m was generated. The trial was subjected to a change of cycle in December 1993 to renew the bearing heads and improve the bearing potential.

The pesticides Laboratory received 109 samples from farmers for checking their active ingredients. Only 3 out of the 109 samples were found to be substandard in formulation quality.

A study of distribution, dissipation and accumulation of copper-based biocides applied on coffee has been going on since 1984. The objective of the study was to determine if the copper levels has increased in the coffee tissues and soils as a result of frequent use of biocides to control coffee berry disease, bacterial blight of coffee and leaf rust diseases which are of economic importance in Kenya's coffee industry. The results so far showed gradual build up in total and available copper in both the top-soil and sub-soil with control plots showing lower copper levels than the copper-treated plots. For instance, Copper Kocide 101 gave higher total copper while Nordox yielded higher available copper. Thus the copper residue build-up may depend on treatment.

The Quality Laboratory received 8 clean coffee samples from coffee farmers for quality appraisal. Some coffee farms affected by the "off-flavours" were accorded advisory services by the Quality Staff.

A project was initiated in 1991 in order to determine the factors which influenced the composting process of coffee pulp. Well composted coffee pulp is useful as manure and soil conditioner. However, the most suitable composting method to improve on its handling, transportation and distribution on the farm has to be innovated. Changes in pH, temperature and volume of composting piles were used as the parameters to follow composting process.

Complete composting was achieved when the temperature started to fall, pH reached 9.0 and volume fell to a minimum - one third of the initial volume. Turning frequency of the piles was another added parameter in following the compost formation. Turning frequencies of daily, twice and one a week yield mature compost after 23, 43 and 72 days respectively. The constraining factors were mainly lack of measuring instruments.

A trial was laid down at several factory sites to determine the effect of prolonged soaking of parchment with daily washing and daily or weekly sampling. The samples were dried and hulled. The liquoring results showed that soaking duration of 7 days caused a drop in quality by one class. The quality declined with soaking time and location of the trial did not affect quality trend.

#### 4.5 Crop Physiology

The research programme of the Crop Physiology Section was directed towards water use studies and tissue culture of hybrid variety of Arabica coffee (Ruiru 11).

Studies were conducted on physiological, growth and yield parameters of Ruiru 11 as influenced by drip and overhead irrigation. The results so far obtained using overhead system of irrigation indicate that there were no significant differences between irrigation rates used namely 38, 51 and 76 mm of water applied at intervals of 21, 28 and 35 days in respect to clean coffee yields. However there were significant differences between irrigated and unirrigated trees. Studies using under tree system of irrigation showed that there were significant yield differences amongst the rates of application with the 50 mm rate giving the best clean coffee yields. There were no significant differences due to irrigation intervals.

A study of micropropagation of Ruiru 11 and other improved varieties continued. The aim of the project is to work out a

viable alternative method for propagation of Ruiru 11 through nodal culture and somatic embryogenesis. Orthotropic nodes were cultured in a medium containing 10 mg/l Benzyladenine (BA). These were maintained under one thousand lux illumination in a 16-hour photo period. Shoots started developing within four weeks. The shoots were then excised and rooted after developing two nodes. The highest rooting frequency of 80% was obtained when Naphthalene Acetic Acid (NAA) was used at 200 mg/l. Over one thousand plants have been weaned from this procedure. Two hundred and sixty one are being weaned and 489 microshoots are being rooted. Thirty seedlings have been planted out in the field.

Embryogenesis was achieved with each embryo passing through the sequential stages of embryo formation (i.e. globular, heart-shaped and torpedo-shaped). Each leaf explant (1cm) gave 70-100 embryos. During the year over 1,000 embryos were obtained. The torpedo-shaped embryos were given an auxin dip and transferred into a MS medium without growth regulators for further development into plantlets.

#### 4.6 Entomology Section

Biocontrol was the sectional priority activity while evaluation of various insecticides and ecological studies on both major and minor coffee insect pests still continued.

The systemic insecticides, NTN 33893 5 GR and NTN 33893 200 SL were evaluated against fried egg scale (*Aspidiotus* sp) at Jokimu and Rukera coffee estates. Termik 15 GR and Furadan 10 GR were used as the standards. The two formulations of NTN 33893 were found to be effective in controlling the *Aspidiotus* and have been recommended for its control.

Evaluation of three insecticides, Dursban 4, Dursban 48H and Selector 72% EC against Leaf miner were conducted at Del Monte. Fenitrothion 50% EC was applied as the standard. The results obtained indicated no significant difference between the rates of Dursban



48H, Dursban 4 and Selector 72% EC. The insecticides have been recommended for the control of Leafminer

Three insecticides Reldan 50% EC, Dursban 24 ULV and Fenitrothion 3% Dust were evaluated against Coffee Berry Borer (CBB) at Kisii, Kirinyaga and Embu. Dursban 48% EC was used as the standard. The results obtained indicated that Reldan 50% EC, Dursban 24 ULV and Fenitrothion 3% dust at 15 ml and 50 ml per 20 litres of water and 15 g/tree respectively were effective in controlling the CBB. The trial is still in progress.

The intensive biocontrol work of major coffee insect pests initiated in 1990 progressed. The targeted insect pests were Antestia bugs (Antestiopsis spp), Giant Looper (Ascotis selenaria reciprocata), coffee scales, (Coccus alpinus and Aspidiotus sp), Leafminer (Leucoptera sp) and Berry moth (Prophantis smaragdina). Mass rearing of indigenous natural enemies (NE) predators and parasitoids under the laboratory conditions was successfully attained. The bulked NE were released back to coffee farmers' fields. A total of 129,389 NEs were released during the year. The efficacy of Antestia egg parasitoids and predators of coffee scales (Ladybird beetles) were investigated in the field and laboratory respectively. The project is still in progress.

#### 4.7 Agricultural Economics

During the year under review, the Agricultural Economics Section undertook research on both the Estate and Smallholder Sectors covering three main areas, (1) The evaluation of the coffee production costs and returns in both small and large scale farms (2) Distribution of coffee planting materials, adoption and performance of Ruiru 11 (3) Evaluation of resource constraints in the small holder sector.

The average cost of coffee production in the smallholder sector increased by a margin of 40% in 1993/94 to stand at Ksh 52,092 (Fifty two thousand, and ninety two) per tonne of clean coffee.

In the Estate Sector, the average production cost in 1993/94 was estimated at Ksh 102,516 (One hundred and two thousand, five hundred and sixteen) per tonne of clean coffee. During this period most of the irrigated estates made profits while the non-irrigated estates made losses. This is due to differences in productivity which in most cases is below One tonne of clean coffee per hectare.

A nurseries' survey was conducted in 1994 to generate data on the status of the coffee nurseries in both the estates and the smallholder sectors, their production orientation and prevalent management practices. A total of 51 nurseries were visited, out of which only 36 (70%) were still operational. In most of these nurseries, there was evidence of dilapidation of infrastructure, diversification into other crop seedling enterprises and reduction of area devoted to coffee. On average, the nursery areas under coffee in 1994 had declined to 5% and 9% for the smallholder and estate Sectors respectively, compared to 40% and 25% in 1992. Despite this low area allocation, wastage by way of overgrown coffee seedlings (10% for smallholder and 30% for estates) was also reported. Also evident was a shift of emphasis by the nurseries from traditional varieties to Ruiru 11.

A survey covering 127 smallholder farms in 11 major coffee growing districts was carried out during the first half of 1994. The survey results indicated that 88% of the farmers who received Ruiru 11 Planting materials established the variety. At the peak for the adoption, the rate was 22%. This adoption rate was compared to that of the Estates which had achieved a rate of 39% at the time. The higher adoption rate in the latter is expected as they are endowed with more resources, are more financially stable and thus, have higher risk bearing ability.

Among the various modes used to establish Ruiru 11, the new land planting was the most dominant mode of establishment having been used by 75% of the farmers interviewed. Interplanting and uprooting were both reported by 12%.

Various spacing are in use in the smallscale sector. The most prevalent are 2.74 x 2.74m, 2.74 x 1.83 m, 2.74 x 1.37 m and 1.83 x 1.83 m which was the most common (55%). Farmers seem to prefer

close spacing and this can be explained by the diminishing farm holdings and the farmers' desire for higher returns per unit area

The major constraints hindering adoption of Ruiru 11 were identified as inadequate farm inputs, lack of technical information and poor access to sources of planting materials

A survey to identify the resource constraints on coffee production and covering coffee growing areas in the districts of Kiambu, Murang'a and Kirinyaga was carried out in mid-1995. The farm units covered in the survey were mainly mixed farms engaged in production of a variety of food crops, tea, and livestock in addition to coffee. In addition to the above farm activities, 28% of the respondents reported engaging in out-of-farm activities such as operation of small retail shops (24%) and vocational crafts (12%). Overall, land and labour were identified as the major resource constraints

#### **4.8 Research Liaison Training and Advisory Section (RLTAS)**

The role of the RLTAS is to provide, encourage and maintain a continuous contact between coffee farmers, researchers, coffee agencies and other people interested either individually or in groups in the research production and processing aspects within the coffee industry

To effectively reach the farmers, the Section liaises with coffee extension staff in the ministry of Agriculture, Livestock Development, the Co-operative Movement Managing Agencies and Coffee Board of Kenya (CBK) field services personnel in disseminating research information and receiving feedback from the field. Farmers, particularly estate owners do have a direct contact with the Section

Information flow is effected through training provision of publications participation in Agricultural shows and coffee farmers' field days, making advisory visits to farms, visit by farmers to the station and demonstration sites located in all major coffee growing areas and through audio visual media

Within the year, the section was internally able to conduct ten courses with more emphasis on factory management and field practices to rehabilitate neglected coffee farms

CRF participated in six seminars organised by the Project Co-ordination

and Management Unit (PCMU) for Coffee Extension Officers and Credit Co-ordinators in all coffee districts

There were five local and three foreign students on attachment to the CRF

There was a sharp increase in the number of the various publications sold from 906 to 3,000 during the year under review. There was also an increase in the number of leaflets and circulars distributed to growers particularly those on Ruiru Eleven (11), technical circulars, handouts and Coffee Research Activities

The number of advisory visits increased from 281 to 546 in 1994/95. These were either requested or planned visits by the farmers, coffee managing agencies and the extension staff. Like in the previous year, there was a noticeable demand for farm visits. This could be attributed to recent changes in liberalization of the economy where farmers are getting better payment for their produce

Thirty seven coffee farmers' field days were conducted in thirty two coffee districts across the country where about 26,530 farmers participated. CRF held field days at Kisii and Mariene Substations where a total of 6,750 people attended. Common observations and notes during the field days and visits are improved coffee husbandry practices as compared to previous years

The RLTAS staff of CRF attended eleven (11) Agricultural Society of Kenya Shows and seven (7) District Harambee Shows. The CRF and CBK staff were able to interact with farmers and other interested participants in all aspects of coffee husbandry, processing, marketing and the future of coffee farming as a business

CRF was able to receive 2,201 visitors at CRS, its Substations and demonstration sites who paid visits individually and as groups. These visitors were either farmers, students/pupils and foreigners with various interests on coffee

The sale of traditional coffee seeds namely K7, SL28 and SL34 was 303 kg

CRF continued its co-operation with other local institutions in inter-library loaning of books particularly with the Kenya Agricultural Research Institute (KARI), The Universities, Kenya National Library Services (KNLS) and Kilimo Library

The current CRF Library requires expansion to accommodate the many publications we have and modern equipment for collecting, organizing, storage and dissemination of information

**Income and Expenditure Summary**

The Income/Expenditure and the Balance Sheet as at 30 September 1995 are attached hereto. The Foundation's Income for the year to 30 September 1995 was K £12,368,432 compared to K£ 8,225,037 for the previous year. Expenditure of K £10,770,790 was incurred against K£ 9,483,244 in the previous year.

Special Expenditure in respect of the Coffee Berry Disease unit and Bacterial Blight of Coffee Project was as follows

	K£
Staff Remuneration Labour Wages, Travelling and General Unkeep	391,278
New Equipment	<u>21,353</u>
	412,631 =====
Foundation's Bacterial Blight of Coffee Project	
Staff Remuneration, Labour Wages, Travelling and General Upkeep	180,643
New Equipment	<u>3,875</u>
	184,518 =====

The above Expenditure for the two units was reimbursable by the Coffee Board of Kenya over and above the Main Subvention. The Budget for the year 1995/96 in respect of these projects stand at K£ 412,297 and K £237,085 respectively. The Bank Balance was K £ 141,172 at 30 September 1995.

**6.0 Acknowledgement**

This opportunity is taken to thank the Coffee Board of Kenya, the Ministry of Agriculture, Livestock Development & Marketing, the Ministry of Research Technical Training and Technology, the Ministry of Cooperative Development, the Kenya Planters' Cooperative Union, the Agrochemical companies dealing with coffee pesticides in Kenya and the entire coffee farming community and their agents for supporting research during the year. The co-operation received from them and the Government of Kenya is very much appreciated by the CRF Board.



**REPORT OF THE AUDITOR - GENERAL (CORPORATIONS) ON THE ACCOUNTS OF  
COFFEE RESEARCH FOUNDATION  
FOR THE YEAR ENDED 30TH SEPTEMBER, 1995**

I have examined the accounts of Coffee Research Foundation for the year ended 30th September, 1995 in accordance with Section 29 (2) of the Exchequer and Audit Act (Cap 41?) I have obtained all the information and explanations that I have required for the purpose of the audit. Proper books of account have been kept by the Foundation and the accounts are in agreement therewith and comply with Companies Act, (Cap 486).

In my opinion, the Balance Sheet and the Income and Expenditure Account, when read together with notes there on, present a true and fair view of the financial affairs of the Foundation as at 30th September, 1995 and of its surplus and source and application of funds for the year ended on that date.

**W. K. KEMEI**  
**AUDITOR - GENERAL (CORPORATIONS)**  
**19th September, 1997**

**COFFEE RESEARCH FOUNDATION  
(A COMPANY LIMITED BY GUARANTEE)  
Balance Sheet as at 30th September 1995)**

	Note	1995	1994
<b>ASSETS EMPLOYED</b>			
Fixed Assets	2	43,323,344	46,209,788
<b>INVESTMENTS</b>			
Quoted Investments at cost Schedule 11		1,315,402	2,671,967
<b>CURRENT ASSETS</b>			
Coffee Board of Kenya Stocks		11,979,039 9,744,807	1,139,876 7,586,163
Debtors, Deposits & Provisions	6	7,629,488	614,381
Cash & Bank Balances	4	<u>2,823,457</u>	<u>27,629,679</u>
		<u>32,176,791</u>	<u>52,758,428</u>
<b>CURRENT LIABILITIES</b>			
Creditors, Accruals and Provisions	7	21,809,043	74,577,994
Withholding and Corporation Tax		2,927	2,625
		<u>21,811,970</u>	<u>74,580,619</u>
<b>NET CURRENT ASSETS</b>		<u>10,364,821</u>	<u>21,822,191</u>
Total Net Assets		<u>55,003,567</u>	<u>47,059,564</u>
<b>FINANCED BY:</b>			
Coffee Research Reserve Fund		1,400,000	1,400,000
Capital Research Reserve Fund		47,182,130	47,726,475
Research Reserve Fund		<u>6,421,437</u>	<u>(22,066,911)</u>
		<u>55,003,567</u>	<u>27,059,564</u>

Accounts were approved by Board of Directors

Mr A.M Mwangi .. ... Chairman

Dr P.K. Michori .. ... Director

**COFFEE RESEARCH FOUNDATION  
(A COMPANY LIMITED BY GUARANTEE)  
Income and Expenditure Account/Research Reserve  
for the year ended 30th September 1995**

	<b>1995 Kshs</b>	<b>1994 Kshs</b>
Surplus for the year	36,951,839	(24,891,145)
Provision for withholding and Corporation Tax	(4,716)	29,515
Capital Expenditure incurred on land owned by Coffee Board of Kenya	<u>(8,458,775)</u> 28,488,348	<u>(18,130,553)</u> (43,051,213)
Research Reserve brought forward	<u>(22,066,911)</u> <u>6,421,437</u>	<u>20,984,302</u> <u>(22,066,911)</u>

**COFFEE RESEARCH FOUNDATION**  
**(A COMPANY LIMITED BY GUARANTEE)**  
**Detailed Income and Expenditure Account for the year**  
**ended 30th September 1995**

<b>INCOME</b>	<b>1995</b>	<b>1994</b>
Coffee Board of Kenya		
Main Subvention payments	160,748,758	74,300,300
Reimbursement of plant		
Breeding Expenses	15,672,960	15,696,200
Reimbursements of SCIP		
Expenses	9,512,880	7,675,100
	<u>185,934,598</u>	<u>97,671,600</u>
Reimbursement of FCBDRU		
Expenses	8,522,640	7,020,700
Reimbursement of FBBCRU		
Expenses	5,044,000	5,307,700
	<u>13,566,640</u>	<u>12,328,400</u>
Government of Kenya		
Contribution Towards Coffee		
Rehabilitation/Programme	1,052,000	1,061,258
Coffee Proceeds	44,568,031	48,786,790
Dividends and Interests on		
Investments	26,248	275,869
Sundry Income	2,221,133	4,376,841
	<u>47,867,412</u>	<u>54,500,758</u>
Total Income	<u>247,368,650</u>	<u>164,500,758</u>
<b>EXPENDITURE</b>		
Recurrent Expenditure	184,616,192	170,535,187
Special Services	19,120,166	10,282,047
Provision for Salary		
Arrears (S/S)	3,469,260	8,667,652
Depreciation	8,030,200	8,667,652
Audit Fees	180,000	180,000
Total Expenditure	<u>215,415,818</u>	<u>189,664,886</u>
Surplus/(Deficit) from		
the operation	31,952,832	(25,164,128)
Profit on sale of investment	4,150,500	272,983
Prior year adjustments	848,507	-
Surplus/(Deficity) for the year	<u>36,951,839</u>	<u>24,891,145</u>

**SOURCE AND APPLICATION OF FUNDS**

	<b>94/95</b>	<b>93/94</b>
<b>Surplus/(Deficity) for the year</b>		
<b>before taxation</b>	36,951,839	(24,891,145)
Adjustments for items not involving the movements of funds:-		
Depreciation	8,030,200	8,667,652
Profit on sale of fixed assets	<u>(4,150,500)</u>	<u>(272,983)</u>
Funds generated from operations	<u>40,831,539</u>	<u>16,496,475</u>
Other sources		
Proceeds on sale of fixed assets	<u>4,959,793</u>	<u>286,000</u>
<b>Total funds available for application</b>	<u><b>45,791,332</b></u>	<u><b>16,210,476</b></u>
 <b>Application of Funds</b>		
Purchase of Fixed Assets	5,143,756	6,786,636
Development Expenditure	8,458,775	16,254,921
Payment of tax	<u>1,789</u>	<u>26,890</u>
	<u>13,604,320</u>	<u>23,068,447</u>
	<u>32,187,012</u>	<u>(39,278,923)</u>
 <b>Movement in working capital</b>		
(Decrease)/Increase in stock	2,158,644	1,099,938
(Decrease)/Increase in creditors	52,768,649	(50,006,378)
Increase/(Decrease) in debtors & Deposits	<u>2,065,941</u>	<u>7,863,578</u>
(Decrease)/Increase in cash balance	<u>(24,806,222)</u>	<u>17,491,095</u>
	<u>32,187,012</u>	<u>39,278,923</u>



**COFFEE RESEARCH FOUNDATION  
(A COMPANY LIMITED BY GUARANTEE)**

**Notes to the Accounts for the year ended 30th September. 1995**

**ACCOUNTING POLICIES**

**(a) Accounting convention**

The Accounts are prepared under historical cost convention

**(b) Stocks**

Stocks of consumable stores are valued on a "first-in, first-out" basis at the lower of cost or net realisable value

**(c) Depreciation**

Depreciation is calculated to write off the cost of Fixed Assets on a diminishing balance basis over estimated useful lives at the following annual rates

Farm Machinery	20%
Vehicles & Tractors	20%
Farm Equipment	15%
Furniture Office Equipments	12 5%
Laboratory Equipment	12 5%
Misc Equipment	7 5%

**(d) Investments**

Investments are stated at cost

**(e) Research Reserve**

Where the foundation Finances and develop assets, of a permanent nature on the land owned by the Government or the Coffee Board of Kenya, the gross cost of these assets is debited to this reserve fund.

COFFEE RESEARCH FOUNDATION  
(A COMPANY LIMITED BY GUARANTEE)

Notes to the Accounts for the year ended 30th September 1995

ALL AMOUNTS IN KSHS

	Furniture and Office Equipment		Laboratory Equipment		Farm Equipment		Vehicles and Tractors		Farm Machinery		Miscellaneous Equipment		TOTAL
	12 1/2 %	12 1/2 %	15 %	20 %	20 %	7 1/2 %							
Written Down Value as at 1 October 1994	6,391,338	11,682,280	5,050,224	19,217,880	452,241	3,415,825	46,209,788						
Additions during the year	1,690,806	956,884	106,810	1,517,504	859,134	12,618	5,143,756						
Valuation of vehicles	-	-	-	-	-	-	-						
As at September 1995	8,082,144	12,639,164	5,157,034	20,735,384	1,311,375	3,428,443	51,353,544						
Disposals	-	-	-	-	-	-	-						
Depreciation for the Year	1,010,267	1,579,895	773,555	4,147,076	262,275	257,132	8,030,200						
As at 30 Sept. 1995	7,071,877	11,059,269	4,383,479	16,588,308	1,049,100	3,171,311	43,323,344						
As at 30 Sept 1994	6,391,338	11,682,280	5,050,224	19,217,880	452,241	3,415,825	46,209,788						

3. TAXATION

Taxation has been provided on Income Investments at the Corporation rate.

**COFFEE RESEARCH FOUNDATION  
(A COMPANY LIMITED BY GUARANTEE)  
Notes to the Accounts for the year ended  
30th September 1995**

		KSHS.
<b>4.</b>	<b>CASH AND BANK BALANCES</b>	
	Cash in hand and at the bank	<u>2,823,457</u>
		<u>2,823,457</u>
<b>5.</b>	<b>CAPITAL RESERVE</b>	<b>KSHS.</b>
	Capital Reserve as at	
	1st October 1994	46,310,609
	Additional values on Revaluation	
	of Vehicles	-
	Share Adjustments	-
	Capital Addition in	
	Special Funded Programmes -	
	<b>(a) Equipment</b>	
	-BBCRU	77,500
	-FCBDRU	427,071
	-Coffee	
	Rehabilitation	
	Programme	331,950
	- Plant Breeding	35,000
	<b>(d) Development</b>	
	- Plant Breeding	<u>—</u>
		<u>871,521</u>
		<u>47,182,130</u>

**COFFEE RESEARCH FOUNDATION  
(A COMPANY LIMITED BY GUARANTEE)  
Notes to the Accounts for the year ended  
30th September 1995**

<b>SUNDRY DEBTORS</b>	<b>KSHS.</b>
Coffee Board of Kenya	1,400,000
Coffee Proceeds receivables	10,579,039
	<u>11,979,039</u>
Deposits	40,180
I C I P E	43,901
Unpaid Cheques	63,875
Staff Debtors and Petrol	32,415
Staff Loans and Advances	1,153,147
Safari Imprests	1,794,714
Bungoma Union Bank	218,390
House Rent	4,335
Namwela Coffee Proceeds Receivables	1 51,765
Ngenye Kariuki & Co	1,001,609
Continental Bank	2,814,252
Ministry of Labour	142,060
Coffee Seedlings	168,845
	<u>7,629,488</u>

The foundation felt that the amount of Kshs 3,014,252 with Continental Bank of Kenya might not be recovered, hence a provision of 100% was made in 1985/86 Accounts. However, in 1992/93 the liquidators paid CRF Kshs. 200,000 leaving a balance of Kshs 2,814,252

<b><u>CREDITORS AND PROVISIONS</u></b>	<b>KSHS.</b>
Accrued Expenditure	12,806,509
Audit Fees	360,000
Provision for salary arrears	3,469,260
Payment advance by European Union	2,048,117
Continental Bank	2,814,252
Ministry of Labour	142,060
Coffee Seedlings	168,845
	<u>21,809,043</u>

**COFFEE RESEARCH FOUNDATION**  
**(A COMPANY LIMITED BY GUARANTEE)**  
Schedule of Recurrent Expenditure Schedule 1

FINANCED BY SPECIAL FUNDING						FINANCED BY CRF			
CBD	SOIL ANALYSIS	PLANT BREEDING	BB CRU	SCIP	CRF	TOTAL			
YEAR ENDED 30.9.94	YEAR ENDED 30.9.94	YEAR ENDED 30.9.94	YEAR ENDED 30.9.94	YEAR ENDED 30.9.94	YEAR ENDED 30.9.94	YEAR ENDED 30.9.94	YEAR ENDED 30.9.94	YEAR ENDED 30.9.95	YEAR ENDED 30.9.95
Maintenance and General Upkeep 968,587	5,804	9,311,379	456,933	2,019,617	41,475,115	54,237,426	1,206,799	198,266	58,300,226
Travelling and Touring Expenses 1,816,211	--	2,032,619	1,595,040	2,421,289	32,758,399	40,623,558	1,625,577	--	35,389,080
Staff Remuneration and Labour Wages 4,235,911	--	7,619,688	3,248,247	6,054,988	51,381,450	72,540,284	4,993,183	--	90,055,364
Equipment Purchased --	--	1,079,941	7,500	30,596	--	1,118,037	427,072	--	871,522
Capital Development --	--	2,015,882	--	--	--	2,015,882	--	--	--
	--	--	--	--	--	--	--	--	--
7,020,700	5,804	22,059,509	5,307,720	10,526,490	125,614,964	170,535,187	8,252,631	198,266	184,616,192
8,252,631	198,266	24,209,125	3,690,367	13,020,799	135,245,004	184,616,192			



**COFFEE RESEARCH FOUNDATION  
(A COMPANY LIMITED BY GUARANTEE)  
Schedule 11  
Schedule of Investments**

No. of Shares	Nominal Value of		At Cost Kshs	Middle Market Kshs
-	5.00	Consolidated Holdings Ltd	-	-
-	10.00	E A Breweries Ltd	-	-
-	20.00	E A Power & Lighting Co. Ltd	-	-
-	5.00	A Baumann & Company Ltd	-	-
-	5.00	Car & General (K) Ltd	-	-
9254	10.00	B.A T (Kenya) Ltd	12,540	610,764
-	20.00	Kenstock Ltd 12.5%		
		Defered Loan Stock	-	-
5810	-	Kenya Government 6%		
		Stock 1997 at 86%	99,932	-
	10.00	K P C U Unsecured Loan		
		Stock	39,830	-
-		Ordinary Shares	1,131,010	-
-		K P C U 10% Second		
		Class Unsecured		
		Redeemable Loan Stock	<u>32,090</u>	-
			<u>1,315,402</u>	



**COFFEE RESEARCH FOUNDATION**  
**(A COMPANY LIMITED BY GUARANTEE)**  
**SCHEDULE 111**

**B. ATTRIBUTE TO THE GOVERNMENT OF KENYA**

1. LAND	COFFEE	LAND DEVELOPMENT Kshs.	TOTAL Kshs.
Jacaranda Estates 312 acres LR 116/1 & 116/3	80,680	314,300	394,980
Rukera Estates 251 acres LR 116/2	77,100	258,500	335,600
Meru Sub-station 57 acres (Lr & 780) and 806 Kisii Sub-station 45 6	14,420	61,540	75,960
	13,780	53,200	66,980
	<u>185,980</u>	<u>687,540</u>	<u>873,520</u>

2. BUILDINGS	W D V 30.9.94	Depreciation 12.5%	30.9.95
Main Office Lecture Hall and Garage	8,082	1,010	7,072
Laboratories	28,840	3,605	25,235
Farm Office Stores and Workshop	13,632	1,704	11,928
Coffee Factories	7,962	995	6,967
Water Installation and Pump Houses	5,269	659	4,610
Dairy Cattle Sheds and dips	2,773	347	2,426
Domestic Houses and Staff Amenities	125,181	5,648	109,533
Museum and Library	1,703	213	1,490
	<u>193,442</u>	<u>24,181</u>	<u>169,261</u>

**3. FURNITURE EQUIPMENT**

Furniture and Office Equipment	505	63	442
Laboratory Equipment	1,083	135	948
Farm Equipment	1,011	126	885
Vehicles and Tractors	192	24	168
Miscellaneous Equipment	482	60	422
Farm Machinery	861	108	753
Expenditure Stores	584	73	511
Consumable Stores	66	8	58
	<u>4,784</u>	<u>597</u>	<u>4,187</u>

**COFFEE RESEARCH FOUNDATION  
(A COMPANY LIMITED BY GUARANTEE)  
SCHEDULE 111-NOTES**

- (i) Meru Sub-Station LR 780 and 806-That pieces of land situated seven miles south of township on the main Meru/Chongoria Road containing the buildings commonly known as Meru Coffee Research Sub-station together with the necessary curtilage.
- (ii) Kisii Sub-Station Block 2.136- That piece of land situated within Kisii township containing buildings commonly known as Kisii Research Sub-Station together with the necessary curtilage.
- (iii) The building included in Schedule 111A have been valued by the Ministry of Works and additions have been shown at cost.
- (iv) Appropriate Amendments to the Coffee rules have been prepared and submitted to the Attorney General's Department pending enactment of the necessary legislation. The following (V) applies.
- (v) In accordance with Sessional Paper No. 3 of 1963. Land and buildings in Schedule 111b were to be leased to the Coffee Board of Kenya for a period of 21 years from 1st October 1963 at a peppercorn rental, subject to the condition that the use be restricted to the condition that the use be restricted to the research and related activities only, ownership reverting to the Government in the event in that assets are not required for such purposes.

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