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**REPORT OF THE CONTROLLER AND AUDITOR GENERAL  
ON THE FINANCIAL STATEMENTS OF  
TEA RESEARCH FOUNDATION OF KENYA  
FOR THE YEAR ENDED 30<sup>TH</sup> JUNE, 2002**





**REPORT OF THE CONTROLLER AND AUDITOR GENERAL ON THE  
FINANCIAL STATEMENTS OF TEA RESEARCH FOUNDATION OF KENYA  
FOR THE YEAR ENDED 30<sup>TH</sup> JUNE, 2002**

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# **THE TEA RESEARCH FOUNDATION OF KENYA** **(A COMPANY LIMITED BY GUARANTEE)**

**DIRECTOR'S REPORT AND ACCOUNTS FOR THE YEAR ENDED 30<sup>TH</sup> JUNE, 2002**

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# **THE TEA RESEARCH FOUNDATION OF KENYA**

## **(A COMPANY LIMITED BY GUARANTEE)**

### **REPORT OF THE DIRECTORS**

The Directors present their report together with the Accounts of the Foundation for the twelve months ended 30<sup>th</sup> June 2002.

### **PRINCIPAL ACTIVITIES**

The Foundation's main objective is *"to promote research and investigate problems related to tea and such other crops and systems of husbandry as are associated with tea throughout Kenya including the productivity (yield), quality and suitability of land in relation to tea planting; and matters ancillary thereto"*.

### **GENERAL**

The Tea Research Foundation of Kenya (TRFK), was established in 1980 to replace the former Tea Research Institute of East Africa (TRIEA). Research focuses therefore on development of improved clones, appropriate technologies for improvement of yield (quantity of green tea leaf/made tea per hectare) and quality. This is done through development of appropriate practices for tea production including breeding, clonal selection, correct plant nutrition, optimal crop husbandry methods, crop physiological studies, control of major pests and diseases, manufacture, marketing and utilization of finished product.

TRFK is incorporated as a Company limited by guarantee under the Companies Act (Cap 486) of the laws of Kenya. The Foundation is also categorised as a state corporation (parastatal) as per the State Corporations Act (Cap 446 section 2b(v)). The Foundation's activities are funded mainly (70%) by the Tea Board of Kenya through cess levied on the basis of tea growing area and amount of made tea produced annually. The difference (30%) of the expenditure is internally generated by the Foundation from its own tea estate, sale of planting material, advisory analytical services, sale of Publications and other services.

The Research Director is the Chief Executive as provided for by the Foundation's Memorandum and Articles of Association (1980) and the State Corporations Act (Cap 446). The Foundation has five technical departments (Botany/Breeding, Chemistry, Crop Environment, Plant Protection, Field Advisory Services) and Administration and Finance department. The Foundation operates from its headquarters at Timbilil Estate, Kericho and also has a sub-station at Kangaita in Kerugoya, Embu. At the headquarters, the Foundation has a total land area of 413.4 ha with a tea plantation of 210 ha of which 185 ha is mature and 25 ha is young tea. In addition, the Foundation has 8 ha of land in Kangaita Sub-Station, with 6 ha of land under immature experimental tea.

### **TRFK VISION FOR THE YEAR 2010**

*TRFK* will be the center of excellence undertaking innovative research on tea improvement and development aimed at the generation and dissemination of improved, appropriate, effective and efficient technologies.

### **MISSION STATEMENT**

The mission of *TRFK* is to generate and disseminate, through innovative research done with the participation of stakeholders, effective and efficient tea production, processing and value adding technologies for enhanced productivity and development of high quality tea products which can compete profitably and sustainably in the market. The Tea Research Foundation of Kenya will give due cognizance to important aspects of sustainability and conservation of environment, natural resource base and human health.

### **RESEARCH ACTIVITIES – ACCOMPLISHED RESULTS**

#### *Botanical investigations*

Research projects within the department continued to focus on conventional breeding, clonal selection and development of tools for enhancing the efficacy and efficiency of tea crop improvement. The thrust in plant improvement was heavily weighed on enhancement of quality and yield, including tolerance/resistant to numerous abiotic and biotic stress factors and evaluation of germplasm for adaptation and adaptability in different environment. Some promising results continued to be noted in some progeny and clonal trials though most of these need to continue being evaluated to determine the consistency in performance of the test germplasm.

Genetic marker tools continued to be used to determine the diversity that is available for commercial and breeding use. This work is aimed at developing tools for effective and efficient management and utilisation of tea genetic resources in Kenya. The breeding behaviour of tea species continued to be elucidated through numerous studies. Results from these studies will provide breeders with vital information that will enable them develop alternative and more appropriate hybridization and breeding techniques to meet their plant improvement objectives.

The role of the environment in influencing the performance of clones was noted in numerous Genotype x Environment studies. This will deal to evolution of guidelines on which clones will perform best at different sites. The potential for using polyploid teas in composite plants continued to be evaluated. For the second year running, rooting depth and spread seemed to be the more important rootstock traits responsible for the enhancement of scion yields. Numerous diallele populations planted in year 2000 continued to be brought into bearing. These populations provide genetic stocks for determining the underlying basis of inheritance of traits in the tea species.

#### *Chemical investigations*

The work programme covering the areas of tea biochemistry, black tea processing, soil chemistry, plant nutrition and fertilizer use progressed. In the quality and biochemistry research, efforts continued to develop reliable black tea quality parameters. Theaflavin digallate equivalent was reaffirmed to reliably predict plain black tea quality potential. In collaboration with South African and Central African researchers, the parameter was shown to predict the quality potential of black teas from all sources. This is unlike the other parameter which only worked for few or regional teas. Further research was undertaken to determine the green leaf chemical components which relate to theaflavin digallate equivalent. This would be used as a reliable plain black tea quality criteria. The criteria would be used at single bush stage thus reducing expenses in clonal selection, time and other resources. Epigallocatechin gallate, sum of gallated catechins and gallated to non gallated catechins ratios were correlated with theaflavin digallate equivalent positively and significantly, while epicatechin, and simple catechins negatively but significantly related to theaflavin digallate equivalent.

Potential clones were assessed for their quality potential in collaboration with Botany Department. Also responses of different clones to environment were assessed in collaboration with Botany Department. Both trials are long-term and are still continuing, but differential responses of some clones to the environment were observed. This shows that clones may change their quality potential depending on where they are planted.

In a magnesium nutrition trial conducted in Kangaita on a tea field showing gross magnesium deficiency symptoms, results showed that application of NPKS fertilizer corrected the visual magnesium deficiency symptoms. Application of magnesium in the field did not give significant responses though there was an increasing trend. This implies that as long as the tea is well nourished, response to magnesium fertilizer is unlikely.

Studies on tea plant feeder root, which is supposed to supplement work on plant nutrient status, shows that high rates of nitrogen fertilizer especially with sulphate of ammonia as the source and high rates of lime (high calcium content) are some of the factors which reduce feeder root weight. The reduced feeder root weight may in turn reduce nutrients uptake and ultimately tea yields.

#### *Crop Environment/Physiology Investigations*

The annual work programme for the department continued as per schedule in providing training services, provision of meteorological data as well as soil physical analyses. Evaluation of genotype and environment interactions showed that there were site and clonal differences. Frequent plucking intervals indicated that the plucking table height can be maintained (increased slowly) and shoot extension rates were increased by high fertilizer rates. Frequent plucking also resulted in higher yields and a polynomial relationship was demonstrated between fertilizer rates and yields.

Grafting significantly affected the yields of scion clones. Both clones 11/26 and 6/8 had higher yields, improved by SC12/28 by a margin of 26% and 7% respectively. However both scion clones had their yield depressed by BB207. The mean shoot population densities were however not affected by rootstocks.

Use of plant growth regulator Bountee (containing brassinolides) maintained yields of clone 31/8 during the drought period. However, the response was not significant during periods of no water stress. Other shoot parameters measured also indicated the influence of the brassinolides were favourable during adverse weather. Use of Ergostim, also a plant growth regulator showed that the only effects were on frequency of application. Photosynthetic studies on tea of different ploidy levels showed that stomatal resistance increased with ploidy level while photosynthetic rates decreased with ploidy level.

A new unit on Environment Management Systems was started during the year, in line with the Environment Management and Co-ordination act, 1999. This was a busy year in this unit as the first target was tree planting and soil erosion control, plus being incorporated in the Kericho District Environment Committee.

### *Plant Protection Investigations*

The department in the year under review adopted an integrated pest management approach where pest and disease surveillance was used to monitor these pests and diseases and advice given accordingly. The approach has been necessitated by the problems caused by pesticide residues and pest resurgence. Farms west of Rift Valley reported higher pest and disease incidences compared to those of east of Rift Valley. The most common problems reported west of Rift Valley included tea root weevil, mole rats, scale insects and semi-loopers, while those of east of the Rift Valley included mole rats, aphids, thrips, fried egg scales, and red crevice mites. The most common diseases included stem canker, brown and grey blights and hypoxylon wood rot.

Armillaria root rot is still a problem in most smallholder farms. Besides tea, the disease affects several other plant species of economic importance. The species of *Armillaria* that occur in tropical Africa show variations in several attributes but have not been adequately studied and their nomenclature is still unclear. The inoculum of *Armillaria* spp. that causes primary infection in tea plantations originates in soil borne plant materials, hence any disease control approach should target the pathogen in these. Research on biological control of the disease has shown some promise in several trials. Inoculum of *Armillaria* using *Trichodenna* done on various hosts and agro-ecosystems indicate that soil infestation with certain strains of *T. harzianum* has the potential to control the disease through suppression of the infested plant materials. This approach, together with physical soil disinfestation, may form an effective method for controlling the disease. Data from studies conducted during the year showed that the isolates of *Armillaria* from tea consist mainly of two groups presumed to be different species. Neither of these corresponds to *Armillaria mellea*, the species to which the disease has been attributed in the past. Studies on *Armillaria* root rot during the years 1998-2001 focusing integrated management of the disease by use of *T. harzianum* and disinfestations of soil by solarization showed that these two approaches, singly or in combination are potentially utilizable to manage the disease. This has been supported further by data from the on-farm trials.

### *Field Advisory Services*

A total of 23 visits were made during the year in the course of which, which number of observations were made and the way forward recommended. Visits to the Foundation directly handled by Field Advisory Services were 52% more than last year. This significant increase in visits was made by the smallholder sector (59% of the total). The increase demonstrates the keenness of the tea growers to get technical information on growing the crop.

Like last year, the Foundation attended and participated only in Nairobi International Show under Tea Board of Kenya Stand. The Foundation participated in many field/open days including the KTDA Factory/ Zonal Field Days on diverse dates during the year; George Williamson Open Day held at the Foundation in Kericho Timbilil estate, attended by 10 management staff on General Tea Management, Karirana Estates Ltd, out-growers Annual Field Day and TRFK Open Day in Kangaita farm, Kirinyaga.

Fertilizer demonstrations in Olenguruone continued and some results received and analyzed. Analysis of variance of concluded plucking demonstrations results done in various districts west of Rift indicated that there was no statistical significance among the different treatments used. This was attributed to a large CV. An attempt will be made to understand the cause of this problem.

The preparation, printing and distribution of the above magazine were done. Data analysis, interpretation, and report writing were finalised during the year. Dissemination of results through various publications and seminars were done. Within and outside the Foundation

## SUMMARY OF FINANCIAL RESULTS

Operating deficit for the period, **Ksh.15,770,554.00**

The Directors have transferred the deficit for the year to the Accumulated Fund in accordance with the powers conferred on them by the Memorandum and Articles of Association

### DIRECTORATE

In accordance with Article 30, the Board of Directors consisted of:-

(a) **Chairman, Tea Board of Kenya**

Mr. N. Ng'ang'a,

**Chief Executive/Managing Director (TBK)**

Mr. S. Nkanata

**Chairman of the Kenya Tea Development Agency (KTDA)**

Mr. S.M. M'Imanyara

**Managing Director, Nyayo Tea Zones Development Corporation**

Mr. J. Sang

**Managing Director, Kenya Tea Development Authority (KTDA)**

Mr. G. M. Kimani

alternate

Mr. R. D. Cheruiyot

**The Permanent Secretary, Ministry of Agriculture and Rural Development**

Prof. Shem E. Migot-Adholla

alternate

Mr. M. Wanasakaami

**The Director of Agriculture, Ministry of Agriculture**

DR J. K. Wanyama

alternate

Mr. J. Ng'eno

**The Director of Research, Tea Research Foundation of Kenya (TRFK)**

Mr. J.K. Rutto

**Secretary to the Board, Administration & Finance Manager (TRFK)**

Mr. A.U. Mohammed

(b) **Three persons nominated by the Ministry of Agriculture and Rural Development**

Ambassador E. C. Lang'at (Chairman of the Board)

Mr. Henry Chakava

Mr. J. P. Lagat

**One person nominated by the Kenya Tea Development Agency**

Mr. J.D. Kimura

**One person nominated by the Kenya Tea Growers' Association (KTGA)**

Mr. P.J. Stanning (Upto September 2001

alternate

Mr. R. Yegon

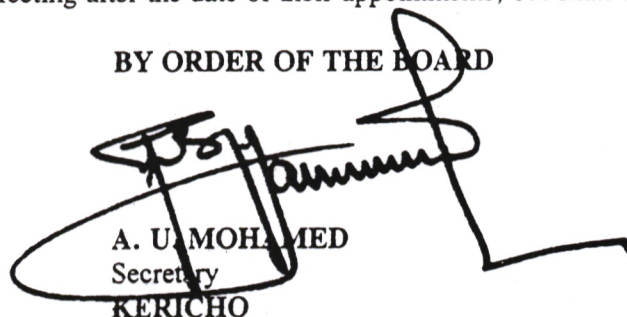
Mr. S. C. Koech (From October 2001)

**Representative of the Attorney General Chambers**

Ms. J. Nkoroi

The Directors listed under (a) are liable to retire by rotation but those listed under (b) shall retire at the next but one Annual General Meeting after the date of their appointments, but shall be eligible for re-nomination.

BY ORDER OF THE BOARD

  
A. U. MOHAMMED  
Secretary  
KERICHO

**REPORT OF THE CONTROLLER AND AUDITOR GENERAL ON THE  
FINANCIAL STATEMENTS OF TEA RESEARCH FOUNDATION OF KENYA  
FOR THE YEAR ENDED 30 JUNE 2002**

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I have examined the financial statements of Tea Research Foundation of Kenya for the year ended 30 June 2002 in accordance with the provisions of Section 29 of the Exchequer and Audit Act (Cap.412). I have obtained all the information and explanations considered necessary for the purpose of the audit. Proper books of account have been kept and the financial statements, which have been prepared under the historical cost convention, are in agreement therewith and comply with the Companies Act (Cap.486).

Except for the reservations set out herebelow, in my opinion; the financial statements when read together with the notes thereon, present a true and fair view of the state of affairs of the Foundation as at 30 June 2002 and of its deficit and cash flows for the year then ended.

**1. FINANCIAL POSITION**

During the year 2001/2002, the Tea Research Foundation of Kenya posted a deficit of Kshs.16,565,665.00 in its operational results compared to a deficit of Kshs.784,013.00 in the previous year thereby reducing the accumulated fund from Kshs.37,972,734 in 2000/2001 to Kshs.21,444,415 as at 30 June 2002. Further, the Balance Sheet reflects a negative working capital of Kshs.1,346,085.00 as at 30 June 2002. Unless this downward trend is checked the financial position of the Foundation may be in jeopardy.

**2. FIXED ASSETS**

The fixed assets figure of Kshs.293,448,257.00 as at June 2002 excludes an undetermined value of land at Kangaita Research Station which measures twenty (20) acres and for which the Foundation does not hold a title deed. Consequently, therefore, the ownership of the Research Station land could not be confirmed.



**E.N. MWAI**  
**CONTROLLER AND AUDITOR GENERAL**

**Nairobi**

**21 May 2004**

**THE TEA RESEARCH FOUNDATION OF KENYA**  
**( A COMPANY LIMITED BY GUARANTEE )**

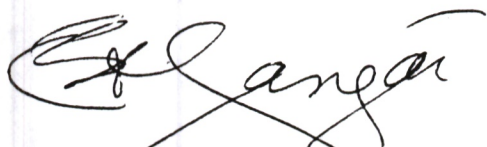
**REVENUE ACCOUNT FOR THE YEAR ENDED 30TH JUNE 2002.**

<b>INCOME</b>	<b>Notes</b>	<b>2001/2002</b>	<b>2000/2001</b>
Contribution from TBK		83,506,027	71,947,928
Sale of Greenleaf		29,752,699	47,751,036
Sale of Planting Materials		9,838,174	7,687,347
Sale of Publication		112,585	216,530
Laboratory Tests		593,740	676,068
Interest receivable		277,652	463,819
Miscellaneous Income		745,454	612,362
Kangaita revenue		2,078,633	1,011,114
	<b>TOTAL</b>	<b>126,904,964</b>	<b>130,366,204</b>
 <b>EXPENDITURE</b>			
Administration		10,388,745	9,051,277
Emoluments-Senior Staff		15,728,000	14,093,825
Emoluments-Junior Staff		12,605,864	10,683,680
Retirement Benefits (SS)		4,485,411	4,323,713
Retirement Benefits (JS)		1,070,293	1,670,820
House Allowance		29,612	24,132
Travelling (Duty)		6,794,204	5,716,175
Travelling-Acc/Subsistence		4,891,786	3,983,023
Passages paid-Local Leave		658,876	451,653
Medical		3,657,532	2,499,147
Board Expenses		1,965,914	1,604,892
Property upkeep		7,869,485	7,646,733
Elect, Water & Conservancy		4,544,316	5,182,836
Training and conference		3,191,470	3,060,892
Library		771,683	909,166
Experiments		12,088,468	13,030,518
Kangaita Sub-Station		3,054,211	-
Publication		253,946	230,430
Estate Expenditure		33,031,500	30,717,725
Primary School		488,570	446,321
Insurance		1,314,270	916,894
	<b>TOTAL</b>	<b>128,884,156</b>	<b>116,243,852</b>
Depreciation of Fixed Assets	<b>1A</b>	14,586,473	14,906,365
	<b>Grand Total</b>	143,470,629	131,150,217
<b>SURPLUS (DEFICIT)</b>	<b>3</b>	<b>(16,565,665)</b>	<b>(784,013)</b>
 <b>TRANSFERRED TO ACCUMULATED FUND</b>		<b>16,565,665</b>	<b>784,013</b>

**THE TEA RESEARCH FOUNDATION OF KENYA**  
**( A COMPANY LIMITED BY GUARANTEE )**


**BALANCE SHEET AS AT 30TH JUNE 2002**

	Notes	2001/2002	2000/2001
<b>FIXED ASSETS</b>	<b>4</b>	293,448,257	295,581,044
<b>INVESTMENT PENSION FUND</b>		9,496,103	9,496,103
		<u><b>302,944,360</b></u>	<u><b>305,077,147</b></u>
<b>CURRENT ASSETS</b>			
Stocks	1C	3,431,273	3,365,725
Debtors & Prepayments		9,144,867	13,925,761
Deposits, Bank & Cash balance- Kericho		3,305,830	9,543,673
Deposits, Bank & Cash balance- Kerugoya		694,023	344,216
		<u><b>16,575,993</b></u>	<u><b>27,179,375</b></u>
<b>CURRENT LIABILITIES</b>			
Creditors & Accruals		17,922,078	14,129,933
		<u><b>17,922,078</b></u>	<u><b>14,129,933</b></u>
<b>NET CURRENT ASSETS</b>		(1,346,085)	13,049,442
<b>TOTAL NET ASSETS</b>		<u><u><b>301,598,275</b></u></u>	<u><u><b>318,126,589</b></u></u>
<b>FINANCED BY;</b>			
Accumulated Fund	5	21,444,415	37,972,734
Revaluation Reserve		270,657,757	270,657,752
Pension Fund	6	9,496,103	9,496,103
		<u><b>301,598,275</b></u>	<u><b>318,126,589</b></u>


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**AMBASSADOR E.C LANG'AT**  
**CHAIRMAN TRFK**


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**MR J.K RUTO**  
**DIRECTOR -TRFK**

**THE TEA RESEARCH FOUNDATION OF KENYA**  
**(A COMPANY LIMITED BY GUARANTEE)**

**CASH FLOW STATEMENT FOR THE YEAR ENDED 30TH JUNE 2002**

<b>CASH FLOW FROM OPERATING ACTIVITIES:</b>	<b>2001/2002</b>
	<b>KSHS</b>
<b>SURPLUS (DEFICT)</b>	<b>(16,565,665)</b>
Adjustments for;	
Depreciation	14,586,474
Prior year adjustment	37,346
Investment income	(277,652)
interest expense	13,435
<b>Operating surplus before working capital changes.</b>	<b>(2,206,062)</b>
(Increase)decrease in stocks	(65,545)
(Increase)decrease in debtors	4,780,894
Increase(decrease) in creditors	3,792,146
<b>Cash generated from operations.</b>	<b>8,507,495</b>
<b>RETURN ON INVESTMENT AND SERVICING OF FINANCE:</b>	
Interest received	277,653
Interest on bank overdraft	(13,435)
<b>Cash flow from investing activities</b>	<b>264,218</b>
	<b>6,565,651</b>
Purchase of fixed assets	(12,453,687)
Proceeds from sale of F/assets	-
<b>Net cash from operating activities</b>	<b>(5,888,036)</b>
 Net increase(Decrease) in cash and cash equivalents	 <b>(5,888,036)</b>
 Cash and cash equivalents at the begining of the period	 9,887,889
Cash and cash equivalents at the end of the period	3,999,853
	<b>(5,888,036)</b>

**THE TEA RESEARCH FOUNDATION OF KENYA**  
**(A COMPANY LIMITED BY GUARANTEE)**

**NOTES TO THE ACCOUNTS ENDED 30TH JUNE 2002**

**1 ACCOUNTING POLICIES**

**A) BASIS OF ACCOUNTING**

The foundation prepares its accounts under the historical cost convention.

**B) FIXED ASSETS**

Fixed Assets are stated at the cost/valuation less accumulated depreciation. Depreciation is calculated to write-off the cost in equal instalments over the anticipated useful life of the assets. The depreciation rates currently in use are as follows;

Buildings	<b>2.5%</b>
Furniture & Equipment	<b>10%</b>
Motor Vehicles	<b>25%</b>

**C) STOCKS**

Stocks are valued at actual cost or net realisable value whichever is lower.

**2 TAXATION**

The Foundation is only liable to income Tax on dividends and interest receivable. These items are usually taxed at source.

**3 OPERATING SURPLUS BEFORE TAXATION**

The operating Surplus is arrived at after charging;

	<b>Kshs</b>
Audit Fees	<b>450,000</b>
Director's Fees	<b>120,000</b>
Depreciation of Fixed Assets	<b>14,586,474</b>

And after crediting;	
Interest receivable	<b>277,652</b>

