TOBACCO RESEARCH BOARD

ANNUAL REPORT

for the year ended
30 JUNE 2014

and

AUDITED ACCOUNTS

for the year ended
31 DECEMBER 2013

RH ISSN 0080-2875
TOBACCO RESEARCH BOARD

VISION

To be the recognised leader in the provision of agro-based research and analytical services and products.

MISSION

To maximise economic value from sustainable and responsible tobacco production through the development and provision of elite varieties and innovative agro-based technical services and products.

VALUES

Innovation
Integrity
Accountability
Actualisation

BOARD STRATEGIES

1. Proactive generation of information, knowledge and technology to enable Zimbabwe tobacco farmers to attain the best yields of the highest quality tobacco at the lowest possible cost;

2. Provision of advice and assistance to any person growing tobacco in Zimbabwe and;

3. Provision of value-adding quality technical services and products.
06 October 2014

Dr J. M. Made  
Minister of Agriculture, Mechanisation and Irrigation Development  
Zimbabwe Government  
Private Bag 7701  
Causeway  
Harare  
ZIMBABWE

Dear Sir,

I have the priviledge, on behalf of the Tobacco Research Board, to submit for your consideration, the Annual Report covering the year to 30 June 2014 and the audited Financial Statements for the year to 31 December 2013.

Yours sincerely,

Dr M S Mombeshora  
CHAIRPERSON

MSM/pr
TRB Board Members

Dr M.S. Mombeshora
Board Chairperson

Prof T. Hove
Deputy Chairperson

Mrs D. Hikwa
Member

Dr C. Mguni
Member

Prof F. Tagwira
Member

"Tobacco Research Board...Maximum Value"
TOBACCO RESEARCH BOARD

General Manager
DR D. GARWE

Assistant General Manager - Research & Extension
DR S. DIMBI

Assistant General Manager - Finance & Corporate Services
MRS T. MADZIVA

Assistant General Manager - Business Development & Marketing
MR O. MHarapara

Auditors
DELOITTE & TOUCHE

Head Office and Main Station
KUTSAGA RESEARCH STATION, AIRPORT RING ROAD, NEAR HARARE
(P.O. Box 1909, Harare)

Outstations
BANKET RESEARCH STATION NEAR BANKET
(P.O. Box 160, Banket)

ORIENTAL TOBACCO STATION, NEAR MASVINGO
(P.O. Box 482, Masvingo)
## CONTENTS

<table>
<thead>
<tr>
<th>INTRODUCTION</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>History</td>
<td>1</td>
</tr>
<tr>
<td>Functions of the Board</td>
<td>2</td>
</tr>
<tr>
<td>Policy</td>
<td>2</td>
</tr>
<tr>
<td>Organization</td>
<td>2</td>
</tr>
<tr>
<td>Strategy and Programme</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ORGANOGRAM</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>SENIOR STAFF</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>REVIEW OF WORK DONE</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHAIRPERSON’S STATEMENT</td>
<td>7</td>
</tr>
<tr>
<td>GENERAL MANAGER’S REVIEW</td>
<td>9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>STRATEGIC ISSUES</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLANT BREEDING</td>
<td>11</td>
</tr>
<tr>
<td>SEED PRODUCTION</td>
<td>14</td>
</tr>
<tr>
<td>CROP PRODUCTIVITY SERVICES</td>
<td>18</td>
</tr>
<tr>
<td>PLANT HEALTH SERVICES</td>
<td>22</td>
</tr>
<tr>
<td>FIELD SERVICES DIVISION</td>
<td>28</td>
</tr>
<tr>
<td>ANALYTICAL CHEMISTRY SERVICES</td>
<td>34</td>
</tr>
<tr>
<td>MOLECULAR BIOLOGY SERVICES</td>
<td>36</td>
</tr>
<tr>
<td>STATISTICAL SERVICES</td>
<td>39</td>
</tr>
<tr>
<td>TECHNOLOGY AND CLIMATE CHANGE</td>
<td>40</td>
</tr>
<tr>
<td>BUSINESS AND FINANCE</td>
<td>41</td>
</tr>
<tr>
<td>HUMAN RESOURCES</td>
<td>43</td>
</tr>
<tr>
<td>GOVERNANCE AND SOCIAL RESPONSIBILITY</td>
<td>46</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FINANCIAL STATEMENTS</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Statement of Accounting Policies</td>
<td>47</td>
</tr>
<tr>
<td>Revenue and Expenditure Account</td>
<td>49</td>
</tr>
<tr>
<td>Balance Sheet</td>
<td>50</td>
</tr>
<tr>
<td>Statement of Changes in Capital</td>
<td>51</td>
</tr>
<tr>
<td>Cash Flow Statement</td>
<td>52</td>
</tr>
<tr>
<td>Notes to Financial Statements</td>
<td>53</td>
</tr>
</tbody>
</table>

"Tobacco Research Board...Maximum Value"
INTRODUCTION

HISTORY

The Tobacco Research Board was reconstituted as a statutory body in 1950 on the initiative of the Zimbabwe Tobacco Association (ZTA), the organisation representing the flue-cured tobacco growers. The ZTA foresaw that research would need a more substantial financial backing than the Government could provide if the local tobacco industry was to expand in the world markets.

Commercial tobacco production was first undertaken in the 1894–95 season but formal experimental work by the Department of Agriculture on fertilizer applications and insect control did not start until 1910. The first general research station was opened in 1924 on which there were tobacco experiments along with those on other crops. The first tobacco research station was established in 1934 at Trelawney and subsequently others were opened at Karoi (1946) and Chipinge (1949).

The change to statutory research was preceded by the formation of the Tobacco Research Advisory Board in 1935, to advise the Minister of Agriculture on the industry's requirements, and the control of tobacco research was delegated to the Board under the Tobacco Research Acts of 1936 and 1938. The onset of World War II, however, seriously depleted the finance and staff available to achieve the research development envisaged and control of research reverted to Government. Post-war developments, notably the United Kingdom demand for a supply of flue-cured tobacco from the sterling area, encouraged the growers to make representations to Government for a return to statutory research, which was effected under the 1950 Act.

The Board resumed control of the Trelawney Station and, after the opening of Kutsaga, its new headquarters station, in 1954, it transferred the specialist departments to Kutsaga. It then closed the Chipinge and Karoi Stations. With the advent of Federation, the Board opened a new station in 1959 at Broken Hill, Northern Rhodesia (now Kabwe, Zambia), which was taken over by the Zambian Government in 1965 following the dissolution of the Federation of Rhodesia and Nyasaland.

Other research stations were opened in 1967, near Masvingo for oriental tobacco and near Banket for air-cured tobacco.

The original Kutsaga Station on the Prince Edward Dam Road (now Seke Road) was expropriated on 30 June 1978 to provide for extensions to the Harare Airport. On that date a new station, retaining the established name “Kutsaga”, was opened on the Airport Ring Road. The larger area (940 ha), available to the Board was used to consolidate the flue-cured research with development work previously done at the Trelawney station, which was then vacated.

In April 1998 the Zimbabwe Government agreed to the change in status of the Tobacco Research Board. The first stage was to be its commercialization into a 100% Government-owned company to be known as Kutsaga Research Company (Private) Limited, followed by privatization.
when equity was to be offered to interested parties. The Minister of Lands and Agriculture appointed new members of the Board in August 1998 with the mandate to steer the Tobacco Research Board to a commercial entity within a two-year period.

Developments during 1998–2008 in the agriculture sector have led to a shift in policy and reluctance to privatise research. However, commercialisation programmes and projects are being pursued vigorously to provide a more stable financial base for the Board.

FUNCTIONS OF THE BOARD

“The functions of the Board are to direct, control and carry out tobacco research within Zimbabwe and, subject to the approval of the Minister, any such tobacco research outside Zimbabwe as it considers expedient” (Tobacco Research Act: Chapter 18.21). The tobacco research for which the Board is responsible encompasses investigations of all aspects of growing the crop on small and large farms. It includes work of any kind in connection with production and preparation for marketing and may extend to technical problems encountered in storage before shipment. Advice and assistance is available free to any person growing tobacco for sale in Zimbabwe.

POLICY

Policy is determined by a Board whose members are appointed by the Minister of Agriculture Mechanisation and Irrigation Development to whom the Board is accountable for its activities.

ORGANIZATION

The day-to-day operations of the Board are the responsibility of the General Manager assisted by three Assistant General Managers (for Research and Extension; Business Development and Research Services and; Finance and Corporate Services). Divisions conduct their predetermined programmes in a semi-autonomous manner for input into the overall programmes of the Board.

STRATEGY AND PROGRAMME

The Board’s programme is reviewed annually and, in light of the accumulated information, projects are discontinued where sufficient information is available, revised where the advisability is indicated, or continued. New projects are initiated annually to provide information on other important problems facing the industry. Commercial projects are also reviewed annually. Strategic plans are crafted five-yearly for the research programme and for commercial activities. Continuous improvement and result - and impact - based planning are conducted.

The agreed programme is formally recorded in a “List of Projects” for the coming season, which serves as an authority to act and as an objective to be achieved.
Tobacco Research Board... Maximum Value
SENIOR STAFF 2013–14

GENERAL MANAGER - Dr D. Garwe: BSc (Hons) Biochem, MSc (Zim), PhD (UCT), FZim. Acad.Sci.

ASSISTANT GENERAL MANAGER – RESEARCH AND EXTENSION – Dr S. Dimbi: BSc, MSc (Zim), PhD (KU)

ASSISTANT GENERAL MANAGER - FINANCE AND CORPORATE SERVICES - Mrs T. Madziva: BComm (UNISA), ACIS, Dip Bus Comp. Prog

ASSISTANT GENERAL MANAGER - BUSINESS DEVELOPMENT AND RESEARCH SERVICES - O. Mharapara: MSc (Chem) (Czech), MBA (Zim)

Mrs P. Ruswa: General Manager’s Personal Assistant
Mrs M. Mpamhanga: Secretary - Business Development and Research Services
Ms D. Chagonda: Secretary - Research and Extension
Ms M. Shonge: Secretary - Finance and Corporate Services

RESEARCH AND EXTENSION

Crop Productivity Services
D. Rukuni: BSc Agric (Zim), MSc (Massey), PhD (Florida): Head of Crop Productivity Services
Ms D. Chinamo: MSc (Zim), BSc Agric (Zim) – Soil Chemistry
Mrs C. Chibudu: BSc Agric (Zim), MSc (UK): Senior Research Officer – Physiology
C. Koga: BSc Agric (Zim): Research Officer – Agronomy
Ms M. Matokwe: BSc Agric, MPhil (Zim): Research Officer – Soil Chemistry
Ms R. Nyabadza: Dip Ed, BSc Ed, BSc Agric, MSc (Zim): Research Officer – Agronomy

Field Services
R. Bolton: Farm Projects Manager
G. Mafukidze: BSc Agric, MSc (Zim): Station Manager – Banket
I. Mazarura: Dip. Agric. (Zim): Station Manager – Oriental
M. Shamudzarira: B.Sc Agronomy (Hons,) M.Phil Crop Production

Engineering
W. Munanga: B. Tech Agric. Eng: Agricultural Engineer
D. Maonga: Nat. Cert: Plumber – Kutsaga
J. Votadyo: Nat. Cert: Electrician – Kutsaga
I. Chitauro: Journeyman Class 1: Fitter and Turner Machinist
C. Ranganayi: Journeyman Class 2: Motor Mechanic
Training and Extension


Molecular Biology Services

N. Muzhinji: BSc, MSc (Zim): Research Officer
F. Mufunda: BSc (Zim), MSc Microbiology (Zim): Research Officer
T. Sagonda: B.Tech Biotechnology

Plant Breeding

E.T. Mudzengerere: Dip Tob Prod, BA (Rhod): Consultant: Acting Head of Plant Breeding
J. Shava: BSc Agric, MSc (Zim): Research Officer – Plant Breeding
C. Kashangura: BSc (Hons), DPhil (Zim): Research Officer – Plant Breeding
G. Makombe: BSc Agric (Zim): Research Officer – Plant Breeding

Plant Health Services

S. Dimbi: BSc, MSc (Zim), PhD (KU): Head of Plant Health Services
Ms R. Masukwedza: BSc Agric (Zim): Research Officer – Entomology
Mrs T.E. Sigobodhla: Biol Tech (Germ): Senior Research Officer – Pathology
P Makunde: BSc (Hons) (Zim), MSc (Belgium): Research Officer – Nematology
T Mahere: BSc (Zim), MSc (Zim): Research Officer – Nematology
M Marunda: BSc Agric (Zim): Research Officer – Pathology

Seed Production

Mrs C. Chisango: BSc Agric, MSc (Zim): Head of Seed Production
T. Chirambwe: BEd (Agric) Zim: MSc (Zim): Research Officer – Seed Production
Mrs T. Huni: BSc Agric (Zim): Research Officer – Seed Production
Mrs K. Mudarikwa: Cert Seed St: Research Officer – Seed Technology

Statistical Services

Mrs F. Zinyandu: BSc Stats Hons (Nig): Head of Statistical Services
S. Banana: BSc Stats & Math: Research Officer – Biometrics and Bioinformatics
Ms B. Kachembere: BSc Stats & Compt Sci (Zim): Research Officer – Biometrics and Bioinformatics
Mrs I. Mazhawidza: Records Supervisor
Analytical Chemistry Services

Mrs C.C. Musuna-Garwe: Nat Dip Appl Chem, BSc (UNISA), MBA (Nott): Head of Analytical Services
B. Mudyawabikwa: BSc (Zim): Research Officer – Chemistry
C. Mureya: BSc (Zim): Research Officer – Chemistry
Ms N. Sibanda: BSc (MSU): Research Officer – Chemistry
T. Gwata: Dipl Appl Bio, HND Appl Bio: Senior Technical Officer - Microbial Analysis

BUSINESS DEVELOPMENT AND MARKETING

Business Development

O. Mharapara: MSc (Chem) (Czech), MBA (Zim): Head of Business Development
T.R. Dzingai: BSc (Zim): Business Development Officer
Mrs M. Nyakachiranje: HBS (Zim), MBA (Zim): Business Development Officer
P. Siwela: Business Development Officer

FINANCE AND CORPORATE SERVICES

Finance Division

Mrs T. Madziva: B Comm (UNISA), ACIS, Dip Bus Comp. Prog: Head of Finance
Z. Matapuri: HND: Buyer
F. Sengudzwa: HND: Systems Administrator

HUMAN RESOURCES

M.H. Nyakabau: BSc (Hons), MBChB, MMed: Consultant Physician – Kutsaga Clinic
P. Gwamanda: SRN: Nurse – Kutsaga Clinic

"Tobacco Research Board...Maximum Value"
The 2013/2014 growing season was a challenging one as heavy rains received in January affected both the early and late planted crops. At Kutsaga, 34% of the seasonal total of 755 mm of rain fell in January alone. To compound the problem, the rainy season then ended prematurely. This presented many growers with the challenge of severe leaching of nutrients leading to elevated fertilizer use, premature ripening of the leaf and a substantially higher labour requirement. The effect of this was a reduction in the quality of most of the crops, particularly in the case of small-scale tobacco growers. This culminated in growers receiving lower average prices on sale of their crops. As at September 2014, 216.2 million kg of tobacco had been sold on both the Auction and Contract floors at an average price of US$3.17 compared with 166.6 million kg and US$3.67 respectively in the previous season. Tobacco merchants cited lower quality and larger than expected volumes of tobacco as the main reasons for the reduced average purchase price for the national crop. All these factors put pressure on the cash flow of most growers, aggravated by the continued suppressed national economic environment. The Tobacco Research Board will have to strengthen capacity-building initiatives to assist as many growers as possible to raise the quality of their product.

The focus of the Board is to develop high-yielding varieties with increased resistance to tobacco diseases and to encourage the grower to adopt best management practices in tobacco culture in order to reap maximum profit from the tobacco business. In this regard, preparations to have the limited release varieties T71 and T72 placed on open release were at a very advanced stage with very positive comments and reviews having been received from the grower community. Further, five new varieties namely T70, T73, T74, T75 and T76 which are expected to address the style concerns of the tobacco merchant base and present a remedy for TMV susceptibility were placed on limited release under the industry variety release protocol. TMV incidence surged in the last two seasons due to non-adherence by some growers to basic hygiene practices that would normally arrest spread.

In 2014, the TRB embarked on a job evaluation exercise and introduced Integrated Results Based Management in order to inculcate a high performance culture. Processes for the Board to be in full compliance with the requirements of IRBM are in progress.

The Board continued to operate with five board members out of the statutory 7. This put strain on the two committees of the Board, namely the Finance, Administration and Human Resources committee.
which has 3 members and the Research, Extension, Business and Projects committee with only 2 members.

For the period under review, the financial performance for the Board was highly commendable with a surplus of US$5 309 879 against US$1 566 843 for the year ended December 2013. The main drivers of this growth were tobacco leaf and seed sales.

**APPRECIATION**

A sincere thank you to fellow directors, management and staff of the Tobacco Research Board for a sterling performance during the 2013/2014 season. I wish to express my gratitude to the government, the growers, the Tobacco Trade and other stakeholders in the tobacco industry for their continued support of the TRB.

Dr M S Mombeshora

**Chairperson**
GENERAL MANAGER’S EXECUTIVE SUMMARY

The “Maximum Value Strategy: 2011-2015” entered its third season. The strategy aims to maximize value from responsible tobacco production through the provision of elite varieties and novel services, technologies and products. The various divisions generally met their targets as is detailed in the various reports under the Review section.

One of the main challenges in the season was that of a Tobacco Mosaic Virus (TMV) outbreak that occurred early in the season when the crops were in the vegetative phase. Five new varieties namely T70, T73, T74, T75 and T76, with TMV resistance were advanced to limited release for the 2014/15 season under the accepted industry variety release protocol. The variety K RK26R, a TMV resistant version of the popular K RK26, was accepted for release by the Variety Release Committee in 2014. The varieties T71 and T72 are now set for open release after completion of the required field experimentation and documentation and checking for Distinctiveness, Uniformity and Stability (DUS) done by the seed certifying authority, Seed Services Insitute. Grower reviews of the varieties have been very encouraging. Development of molecular markers for screening tobacco germplasm for TMV, White Mould and Granville Wilt resistance genes was carried out.

In an effort to reduce Zimbabwe’s environmental footprint, the TRB's stance has been to countenance for use on tobacco only those agrochemicals that meet the most stringent international regulations. This season, a wide range of greener agrochemicals including nematicides, insecticides and fungicides were evaluated for efficacy and most of them have now been recommended for use as replacements for the red and purple label chemicals. On the weed side, it was determined that Sulfentrazone and Clomazone should be applied in combination, and Bentazon or Halosufuron could be combined with Fluazifop-p-butyl for good post-emergence weed control. This work will contribute to the effort to encourage Good Agricultural Practices by growers, ultimately facilitating a continued market acceptance of Zimbabwe tobacco.

Under the ISO17025 quality system, the Analytical Chemistry and Molecular Biology laboratories underwent two internal audits as well as an external audit done by the South Africa Accreditation System (SANAS) in June 2014. The overall certificate was retained and two methods, one for strobilurins and one for total nitrogen analyses in tobacco, were developed/validated against a target of four. The Seed laboratory took part in the International Seed Testing Association (ISTA) and Seed Services proficiency tests and performed very well with an accuracy level of 100 %. The Molecular Biology division participated in the US Department of Agricultural Grain Inspection Packers and Stockyards Administration (USDA/GIPSA) proficiency programme and the International Seed Testing Association (ISTA) programme. It is pleasing to note that 35S and NOS events used routinely in the laboratory achieved a 100 % score performance.

Various initiatives to boost seed storage, irrigation, and grading efficiency commenced with the construction of a 36 m x 18 m grading shed for the farm and an 8 tonne capacity cold room for seed storage at Kutsaga. A misting system was installed in the new and old grading sheds to improve cured leaf conditioning. Irrigation capacity increased with the drilling of a new borehole and installation of booster pumps.
With regards to grower services, approximately 5,700 farmers attended on and off-station training at Kutsaga and the country as a whole. The programme covered all the critical developmental stages of the crop and related management practices. Additionally, some 11,880 farmers were trained during the 2013-2014 Tobacco Improved Productivity Sites programme through either TRB facilitation and/or host farmer/Agritex Extension Workers on site.

The mission of the Business Development and Marketing sector is to generate revenue to sustain the operations of the Board. Sales of Gromix, floatfert, and float trays were below budget for the period under review. A total of 229.6 tonnes of leaf from the commercial crop was produced at an average yield of 4.175 t/ha. Most of the tobacco was sold at an average price of $3.64. Seed sales were firm, including regionally, with the most popular varieties being BRK4, BRK5, K RK66 and K RK26R although there was a shortage of K RK66. The TRB continued to supply tobacco seedlings to growers on a stop-order/cash basis. Recovery on loans was above 70% which is an improvement on the 59% achieved the previous season.

Total Income for the TRB went up by 34.4% from $10,427,250 in 2012 to $14,017,439 and total expenses remained relatively constant from $8,857,762 in 2012 to $8,737,360 in 2013, which was a marginal 1.4% decrease.

Dr D. Garwe

General Manager
1. PLANT BREEDING

Mission: To develop high yielding superior quality, multi-disease resistant varieties to maximize grower returns

1.1 EXPERIMENTAL BREEDING

The Plant Breeding Division conducted a total of 33 agronomic and breeding experiments during the 2013/14 season. Twenty of these were for flue-cured tobacco, four were burley tobacco, three for dark tobacco (dark air and dark fire cured) and a single trial for oriental tobacco agronomy. A trial to evaluate performance of Katambora Rhodes grass, GHR1, in tobacco rotations was also done. One collaborative regional trial was conducted with the Agricultural Research and Extension Trust (ARET) in Malawi. The following sections provide highlights of the season.

1.1.1 Flue-Cured Tobacco Trials

Out of the 35 lines entered for the agronomic and disease trials of multiple disease resistant (MDR) lines, 20 lines were selected on the basis of acceptability of type, multiple disease resistance and good curing styles. All the lines had high root-knot nematode resistance with mean galling rates of 0 and 1 (scale 0 - no galls to 8 – dead plant). For the 2013/14 season, yield for the MDR material ranged from 1731 to 3023 kg/ha (Figure 1.1) and 49 % of the lines surpassed the 2 500 kg/ha considered a benchmark for moderate yield. This is a good indication that when the MDR lines are used as parentals to make hybrids, there will be high yields. Cured leaf style was predominantly lemon and soft natured. Selections were largely based on morphological acceptability and cured styles. Such selections are then subjected to drought tolerance test in the laboratory as a way of identifying suitable recombinants for yield improvement before further agronomic evaluation can be done in the field.

![Figure 1.1](image)

Figure 1.1: Saleable Yield of Multiple Disease Resistant (MDR) lines. Only representative selections from the original breeding populations (TAYU, YUTQ and YUY) are shown.
1.1.2 Local and exotic variety trial

The objective of the cooperative trial of local and exotic lines was to compare Kutsaga varieties with those bred elsewhere with a view to assess local progress in variety developmental work. A total of 25 varieties were included; three from Zimbabwe, two from South Africa, six from Brazil and thirteen from China. For the 2013/14 season, the trial was planted late due to the late arrival of some entries. Cultivars were, therefore, only visually assessed and compared for growth habit and diseases and will be evaluated for agronomic performance during the 2014/15 season.

1.1.3 Dark fire Cured Tobacco

The project to incorporate root-knot nematode and TMV resistance into dark-fire cured tobacco is at an advanced stage. Five hybrids coded KDAC 008, KDAC 086, KDAC 010, KDAC 070 and KDAC 100 now incorporating high resistance to root-knot nematodes and TMV are undergoing male sterile conversion (Figure 1.2). The male sterile development of the parentals of these hybrids is necessary to facilitate commercial seed production when the varieties are eventually released.

![Figure 1.2](image)

**Figure 1.2:** The parental CDL28 (for hybrid KDAC 008) flowering for crossing into male-sterile form.

1.1.4 Breeding for Sources of *Pythium* root-rot resistance

*Pythium* root rot has become an economically important pathogen in the float seedling production system in tobacco. An integrated pest management system that involves the use of *Pythium* resistant varieties is currently being developed. Screening of plant material for possible *Pythium* resistance was completed in 2012 and four lines with varying levels of resistance were found. These lines were crossed to common hybrid parentals to confer *Pythium* resistance. A total of 193 selections from lines with some resistance to *Pythium* were evaluated during the 2013/14 season. Disease assessments were made based on survival and the severity of the infection. Selections showing low disease severity (root-rot) will be further assessed for resistance to *Pythium*.
1.2 VARIETY DEVELOPMENT AND RELEASE

Some newly developed varieties (flue-cured and Katambora Rhodes grass) are earmarked for limited and open release in 2014 and 2015 seasons. The following sections highlight the progress in their documentation and registration with the Variety Release Committee and the expected seasons when they will be released.

1.2.1 Limited release varieties

Five new varieties (T70, T73, T74, T75 and T76), which are essentially a remedy to TMV susceptibility of current varieties on open release were placed on limited release for the 2014/15 season under the accepted industry variety release protocol.

1.2.2 Open release varieties

The variety, K RK26R, a TMV resistant version of the popular K RK26 was accepted for release by the variety release committee in 2014. The varieties T71 and T72 that were placed on limited release in the 2012/13 season are now set for open release after all field work was completed and DUS (Distinctiveness, Uniformity and Stability) tests were done by the Seed Services Institute. The appropriate variety release documents will be submitted to the Variety Release Committee at the Seed Services Institute in 2014. It is expected that these varieties will be on open release in the 2015/2016 tobacco. Other programmes for development of elite varieties to meet current disease and production challenges were initiated and are expected to be on open release from 2019 onwards (Figure 3). The greenhouse, microplots and field work experimentation and documentation on Katambora Rhodes grass variety GHR1 continued in 2014. Documentation for the release of the variety was prepared and the variety is expected to be released by the end of 2014.

Figure 1.4: Variety release roadmap to the year 2021. Line developments are breeding projects that are initiated to develop various parental lines. Where: MDR – multiple disease resistance lines with drought tolerance, GW – Granville Wilt resistance, PVY – Potato Virus Y resistance, and PY – Pythium resistance.
2. **SEED PRODUCTION**

**Mission**: To produce adequate seed to satisfy the quantity and quality requirements of tobacco growers and merchants.

2.1 **TOBACCO SEED**

Tobacco seed of ten varieties (seven flue-cured and three burley varieties) was produced in the season. The seed plots were established at Banket, Oriental and Kutsaga stations and at five off-station sites in Chiredzi, Trelawney and Tengwe. The plot at one of the two Trelawney sites was grown under rain-fed conditions while the rest were irrigated, although some were established late in the season. All lands were fumigated with EDB or Metham sodium and supplementary nematicides applied twice to control root-knot nematodes.

Throughout the season the seed crops were inspected by the TRB gazetted inspector and also by Seed Services Institute as per tobacco seed production regulations.

**Figure 2.1**: Seed bed inspection by Seed Services Institute staff at the Oriental Station

**Figure 2.2**: Pre-harvest inspection by Seed Services Institute Staff at Tengwe
A total of 3,597.071 kg tobacco seed was produced against a target of 5,380 kg. This comprised 317.504 kg standard seed and 3,279.496 kg certified seed.

Low yields for B RK4 were obtained at Banket station due to late and poor land preparation exacerbated by irrigation challenges caused by competition for water between the seed plots and the commercial seedling production. Additionally, staff were unfamiliar with the drip irrigation system installed at the station in the period under review although this has now since been rectified.

One of the main challenges in the season was that of a TMV outbreak (Figure 2.3 and 2.4) that occurred early in the season when the crops were in the vegetative phase. This resulted in most targets for the flue-cured varieties not being met and the total failure of 17 plots from which 910 kg was expected.

Figure 2.3: TMV infected plant at Trelawney

Figure 2.4: Destruction of TMV infected crop
The K RK26R crop at the Oriental station performed very well (Figure 2.5) despite the season experiencing uneven rainfall distribution. The first three months of the season were relatively dry followed by a prolonged wet spell from mid-November to mid-January. Prolonged wet spells result in leaching of nutrients and also hampers the pollination operation.

![Image of tobacco field]

**Figure 2.5:** A K RK26R seed crop at the Oriental station

### 2.2 QUALITY ASSURANCE

Generally, the seed testing laboratory was very busy carrying out seed quality tests in addition to pelleting and film-coating tobacco seed.

The laboratory took part in the International Seed Testing Association (ISTA) and Seed Services Institute proficiency tests and performed very well with an accuracy level of 100 % (Table 1).

**Table 1:** Number of ISTA and Seed Services proficiency test samples for the 2013/14 season

<table>
<thead>
<tr>
<th>Test</th>
<th>ISTA</th>
<th>ISTA</th>
<th>% change</th>
<th>Seed Services</th>
<th>Seed Services</th>
<th>% change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2014</td>
<td>2013</td>
<td>% change</td>
<td>2014</td>
<td>2013</td>
<td>% change</td>
</tr>
<tr>
<td>Purity</td>
<td>6</td>
<td>6</td>
<td>0</td>
<td>6</td>
<td>10</td>
<td>– 40</td>
</tr>
<tr>
<td>Germination</td>
<td>9</td>
<td>6</td>
<td>50</td>
<td>6</td>
<td>10</td>
<td>– 40</td>
</tr>
<tr>
<td>Weed identification</td>
<td>6</td>
<td>6</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>– 100</td>
</tr>
</tbody>
</table>
All the seed that was subsequently packed was checked for quality (purity and germination) in the seed testing laboratory and Table 2 summarizes the figures for 2014 and compares them with the 2013 season. More seed lots were tested in 2014 than in 2013.

**Table 2**: Seed tests, pelleting and film-coating for the 2013/14 season.

<table>
<thead>
<tr>
<th>Activity</th>
<th>2014</th>
<th>2013</th>
<th>% change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sampling</td>
<td>1 042</td>
<td>778</td>
<td>33.9</td>
</tr>
<tr>
<td>Purity analysis</td>
<td>527</td>
<td>275</td>
<td>91.6</td>
</tr>
<tr>
<td>Germination tests</td>
<td>1 528</td>
<td>503</td>
<td>203.8</td>
</tr>
<tr>
<td>Weed identification</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Pelleted seed (Ha equivalent)</td>
<td>2 359</td>
<td>2 125</td>
<td>10.1</td>
</tr>
<tr>
<td>Film-coated seed (kg)</td>
<td>1 406</td>
<td>1 058</td>
<td>32.9</td>
</tr>
</tbody>
</table>

*(C. Chisango, T. Chirambwe, K. Mudarikwa, T. Huni)*
3. CROP PRODUCTIVITY SERVICES

Mission: To develop and disseminate effective, efficient and environmentally sustainable tobacco best management practices.

3.1 OUTPUTS

3.1.1 Using recommended lime and fertilizer rates is a best management option, and to ensure that the tobacco grower attains maximum yields, the Division’s target was to provide 2 250 recommendations. However, only 52% of the target was achieved. There is need for more advertising for this service at the auction floors, field days and in the press to raise awareness on the importance of this service.

3.1.2 To ensure high quality seedling production, Gromix® quality control tests were carried out to guarantee the product was inert, well decomposed, composed of the correct particle size distribution and had low electrical conductivity, and a pH of 5.5 to 6.5. The objective of this work was to minimize batch to batch variation in Gromix® quality, which could translate to inconsistencies in seedling quality. The target for the year 2014 was to conduct 900 Gromix® quality assurance tests, however, only 510 tests (57%) were conducted and this was mainly due to increased batch size.

3.1.3 In training and advisory, the aim was to interact with 20 000 growers and advise on best management practices for tobacco production. As Research Officers from the division were involved in the calendar-based training program, field days, farm visits and advisory, and publicity and marketing events.

3.2 AGRONOMY - FUNDAMENTAL AND APPLIED RESEARCH

Sixty five laboratory and field experiments were planned and 51 experiments were conducted thus; Agronomy 22, Soil Chemistry 18 and Physiology 11. The deficit was due to a reduced number of contract trials for agrochemical companies. Thirty one products were tested in contract trials.

3.2.1 Seedbed experiments

Several seedbed experiments were conducted with an objective to evaluate methods for the attainment of maximum transplantable seedlings in the conventional and float system. In a trial to establish the optimum fertilizer program for raw tobacco seeds, results showed that there was no merit in applying additional basal fertilizer after plug and transfer. In another seedbed trial evaluating the appropriate media compaction level, results revealed that compacting trays by dropping them once from a height of 10-15 cm was sufficient for optimal seedling growth. In a trial done to evaluate the effect of a nutrient charge in Gromix®, the results deviated from the previous season’s where an increase in nutrient charge resulted in increased stem height. The trial will be repeated in a third season to obtain conclusive results. Another trial evaluated salt injury (Figure 3.1) mitigation techniques in float beds by delaying basal fertilizer application. The trend was that delaying Floatfert application to 14 and 35 days after sowing (DAS) caused the least salt injury compared to the standard treatment of applying at 7, 21 and 35 days after sowing. Therefore, split application of Floatfert can be used as a tactic in combating this potentially devastating phenomenon.
3.2.2 Field experiments

Farmer practices on priming leaf removal were assessed. There were no significant yield and quality differences among the leaf priming treatments. A modified trial will be initiated this season and this will take into consideration the effect of different planting dates (September, October and November) and extra basal fertilizer dressing at leaf removal. In an experiment to establish potential yield losses due to premature flowering, it was found that removing the apical bud and allowing one lateral bud to produce harvestable leaves can be recommended as a mitigation measure since normally, less than 10% of plants in a crop have the potential to flower early before attainment of 18 leaves (Figure 3.2).

![Saleable yield of normal (standard), cut-off and old seedlings planted on the same day.](image)

In a trial conducted to evaluate different plant spacings in the new higher yielding tobacco varieties such as K RK66, results revealed that in-row spacing of 46 cm and 56 cm had significantly lower leaf yield of 1 630 kg and 1 787 kg/ha respectively compared to 66 cm and 76 cm which had yields of 2 014 kg/ha.
and 2,684 kg/ha respectively (Figure 3.3). The trial was planted on the 24th of October, and experienced a shorter season hence yields were lower than expected. However, these results indicate that a wider plant spacing may be necessary in late plantings in order to achieve higher yields.

Figure 3.3 Mass of cured leaf at untying for four different plant spacings.

A study was also conducted to establish effective pre- and post-emergence herbicide combinations for optimal weed control. When used alone or in combination with Clomazone (1.5 L/ha), Sulfentrazone (0.475 L/ha) was effective in controlling broad leaf, grass and sedge weeds. However, Clomazone alone did not control sedges as expected. Bentazon (3 L/ha) and Halosulfuron (50 g/ha) were effective post-emergence herbicides for the control of broad leaf, grass and sedge weeds, while Fluazifop-p-butyl (3 L/ha) applied alone only controlled grasses. Indications from the trial are that, the pre-emergence herbicides Sulfentrazone and Clomazone should be applied in combination, and Bentazone or Halosulfuron should be combined with Fluazifop-p-butyl for good post-emergence weed control.

3.3 SOIL CHEMISTRY - FUNDAMENTAL AND APPLIED RESEARCH

A rotation trial is on-going to address the issue of using shorter rotations in intensive agricultural systems. Initial tobacco yields ranged from 1,411.76 to 2,396.97 kg/ha for K RK66, 1,140.80 to 2,534.92 kg/ha for T72 and 1,112.23 to 1,841.51 kg/ha for K M10. Relay crops in use are sunnhemp (Crotolaria juncea), sugar beans (Phaseolus vulgaris) and Katambora (Chloris gayana). The trial was planted on 23 October and hence the season was shorter for K RK66 and T72 which normally produce higher yields than attained in this trial, however, the yield for K M10 was lower than expected. This was due to the poor soil fertility in these sandy soils compounded by the low pH (4.55-4.71) in the plots. This was a first season crop in this continuous rotation trial, and soil fertility and organic matter content is expected to stabilize over the next seasons.

In a trial evaluating various nitrogen application rates on new cultivars, it was found that there were no differences in leaf expansion between applications of 35 and 50 kg N/ha. A further increase in nitrogen rate from 50 to 60 kg N/ha further improved leaf expansion. For saleable yield, there were no differences between 0 N and 25 kg N/ha, however, there was an increase in yield on addition of 35 kg N/ha and no difference thereafter. Nitrogen application rate had no effect on the grade index of cured
leaf in the second and third reaping, while application of 60 kg N/ha reduced the grade index of cured leaf in the first reaping. Results indicated that the current standard (35 kg N/ha) is the optimum nitrogen side dressing for all the cultivars.

Farmer practices of adding gypsum (CaSO₄) at 500 kg/ha in the planting hole and applying either Ca(NO₃)₂ (65 kg/ha) or KNO₃ (77 kg/ha) as foliar sprays at topping were evaluated. The gypsum and KNO₃ treatments produced lower grade indices compared to the Ca(NO₃)₂ treatment. However, all treatments gave comparable grade indices to the standard practice. It is recommended that an extra side dressing at topping be done by foliar application of Ca(NO₃)₂ especially when soil moisture is limiting for soil application.

3.4 PHYSIOLOGY

In one experiment on methods of enhancing flowering in KM10 and MG for seed production, splitting AN by applying ¾ recommended AN at 3 weeks after planting and the rest at budding stage reduced days to 50% flowering by 12 days. It is, therefore, recommended to split AN application to improve flowering in KM10 and MG. Another trial evaluated the effects of photoperiod and temperatures on flowering, and results revealed that artificially varying day-length and low temperatures did not improve flowering in KM10 and MG.

When topping height was investigated as a management tool to enhance flowering, days to 50 % flowering were reduced by an average of 20 days when MG plants were topped to 18, 20, 22 and 26 leaves (Figure 3.4). Similarly, days to 50 % flowering were reduced by an average of 15 days when plants were topped from 35 leaves to 18, 20, 22 and 26 leaves for KM10 plants. The 18 and 20 leaf topping height consistently performed better than other topping heights and is recommended for enhancing flowering in tobacco seed production programs.

Figure 3.4 Effect of topping height on flowering in MG.

[D. Rukuni, C. Chibudu, M. Matokwe, C. Koga, R. Nyabadza, D. Chinamo]
4. PLANT HEALTH SERVICES

Mission: To provide timely, cost-effective, environmentally benign and sustainable integrated plant protection solutions.

4.1 RESEARCH

A total of 70 research trials, 26 Nematology, 21 Pathology and 23 Entomology were conducted in the Division. Pest and disease management research in the Division is sorely focused at ensuring that growers are enabled to use sustainable and socially responsible pest management practices in an integrated approach. This involves the evaluation of a variety of non-chemical control tools (biological, cultural and legislative) with emphasis on tactics that promote the long-term prevention of pests and a reduction in pesticide use. Thus, pesticides are recommended for use as a last resort, thereby reducing grower costs and protecting the environment. Furthermore, a continuous effort is put towards the screening of agrochemicals to ensure that greener products which leave the minimum residues are used on tobacco.

4.1.1 Contract Research

One hundred and sixteen (116) products were evaluated in contract research trials conducted in the season, to evaluate new agrochemicals, those from new sources and new formulations for effectiveness against, insects, root knot nematodes and other pathogens. Of these, 31 products were evaluated in Plant Pathology, 63 in Entomology and 22 in Nematology. Fifty four products (54) were recommended for registration, 58 moved into the second season while 4 were found to be ineffective and were not recommended for use. Products tested were from 22 agrochemical companies: Refiloe, CP Chemicals, Chemplex, Arysta, Du Pont, Agricura, Crop Serve, Pivotal, Agroshape, Bayer, Citchem, Curechem, Nova Agro, Sumitomo (Nissel Trading), Polachem, Sineria, Tapex Trading, TSA, Windmill, Syngenta, Almond, and ZFC.

4.1.2 Fundamental and Applied Research

4.1.2.1 Entomology

The increasing concerns over the use of toxic pesticides has resulted in this skills group conducting more research on greener options, such as the use of biocontrol agents. In preparation for the screening trials, some work on the search for a suitable host for the mass production of the aphid parasitoid, *Aphidius* spp, was undertaken. A number of suitable hosts including Chinese cabbage and tobacco were identified as suitable hosts and mass rearing of the parasitoids will thus be conducted using these. Additionally, the entomopathogenic fungus, *Beauveria bassiana*, was evaluated in combination with imidacloprid for the management of the tobacco aphid and the results show that its use in combination with half the recommended rate of imidacloprid was comparable to the standard imidacloprid field rate.

Some work was also undertaken to find greener alternatives to the purple label insecticide, Acephate which was widely used for the management of aphids, leaf miner and leaf eater control. New active ingredients such as cyromazine, imidacloprid, lufenuron and HGW were found effective but still have to
be evaluated for another two seasons to confirm their effectiveness. The yellow sticky-traps (Fig 4.1) for the detection and management of fungus gnat were recommended for use in combination with other control methods and this approach was adopted in the greenhouses and seedbeds.

![Figure 4.1: Yellow sticky traps used to trap fungus gnat](image)

A number of products were evaluated for budworm and leafminer control and these included, indoxacarb, prevathon, chloranthraniliprole + lambdacyhalothrin, emammectin benzoate and matrine. Already, Indoxacarb and prevathon have been approved for budworm control while thiacloprid, imidacloprid + β-cyfluthrin, acetamiprid and flubendiamide have already been registered for use for the management of a wide range of insect pests.

The work on the daily monitoring of the seasonal fluctuations in winged tobacco aphid populations continued. Generally, the catches for 2013-14 seasons at TRB were very low in comparison with previous seasons (Fig 4.2). This could potentially be attributed to the predominant use of environmentally friendly aphicides such as imidacloprid and thiamethoxam which have minimal adverse effects on the natural enemies of aphids. For two seasons, populations of *Aphidius* spp and ladybird beetles were observed to have been soaring and decimating aphid populations on the station.

![Figure 4.2: Mean monthly aphid catches in water traps](image)
Tobacco moth monitoring that is conducted for advisory purposes, showed that because of the improved and timely hygienic practices at the storage and grading sheds, populations were generally significantly lower than in the previous season (Figure 3).

![Graph showing moth catches in grading sheds]

**Figure 4.3:** Total moth catches in grading sheds

### 4.1.2.2 Plant Pathology

A number of trials were conducted in the Plant Pathology Skills group. Among these was the CORESTA collaborative virus trial, in which tobacco varieties from CORESTA were evaluated for their susceptibility to Zimbabwean strains of PVY. Results showed that all test lines are susceptible to PVY strains although the 'resistant' controls were less susceptible to the more damaging, necrotic strains of the virus. The relevant data has been sent to CORESTA for the analysis. This trial initiated in 1996 and conducted in 27 tobacco growing countries, has now been terminated. However, Zimbabwe will continue with these PVY evaluations in view of the importance of the virus and lack of local resistant tobacco varieties.

![Graph showing PVY strains and incidence]

**Figure 4.4.a:** PVY strains (%) at 12 WAP  
**Figure 4.4.b:** PVY incidence (%) at 12 WAP
Another CORESTA coordinated trial with the objective of establishing guidance residue levels (GRLs) for some Crop Protection Agents (CPAs) used in tobacco was conducted. This trial which is being coordinated by the Agrochemical Residue Field Trial Task Force (ARFT-TF) is being conducted in all tobacco growing regions of the world and TRB is one of the 25 participants from around the world. Six products (azoxystrobin, propamocarb, difenoconazole, tebuconazole, flubendiamide and thiacloprid) and an untreated control were included in the trial. Cured-leaf samples were sent to Japan Tobacco International (JTI) for analysis. Results are periodically presented at CORESTA meetings by the coordinator.

A trial to evaluate a minimum-input strategy for tobacco production was initiated. This trial was necessitated by the fact that over the years TRB has developed a number of multi-disease resistant cultivars and some of the recommended routine agrochemical applications may no longer be necessary. In the minimum input treatment, no nematicides are applied as most of the cultivars are root knot nematode resistant. Additionally, aphicides are only applied as required based on scouting data. This will most likely work for the early-planted crops (September and October), but for the December crop, planting hole aphicide will be retained. If found usable, this strategy will greatly assist in an environment where 80% of the growers are small scale and generally do not use agrochemicals. Three tobacco cultivars, K RK66, K RK26 and T72, will be evaluated in this trial.

The planting date trials with the main objective of quantifying yield losses to aphid-transmitted virus diseases in five flue-cured cultivars, K RK26, K RK66, T 71, T 72 and T 29 were conducted. In addition to the trial, a demonstration plot to showcase the varieties will also be set up in the 2014/2015 season.

4.1.2.3 Nematology

One of the major challenges in this skills group is the need to provide growers with alternatives to the fumigant nematicides, namely EDB, 1,3-D and Methyl-bromide for use in the lands and seedbed. As a result, research continued on the search for promising pre-plant chemical alternatives to fumigant nematicides through conducting appropriate seedbed and field trials using registered nematicides that are available in Zimbabwe. In the 2013/2014 season, Metham sodium and Oxamyl proved to be effective nematicides providing a comparable cost-benefit with EDB and 1,3-D. However, variable efficacy was noted in the performance of Metham sodium, associated with application time. Other promising alternatives that were evaluated included Velum (Fluopyram), Sesamin and Metham potassium. Supplementary nematicides such as Fenamiphos, Ethoprophos and Solvigo did not provide season-long control, thus in the 2014/2015 season they will be tested using 2 applications.

The screening of Kutsaga’s popular resistant cultivars also continued with greenhouse trials being initiated to understand the mechanisms of resistance and nematode behavior in the roots displayed by Kutsaga varieties. However, more effort was placed on biological control. The diet of wax moths (Galleria mellonella) was changed from dog food to a rich medium according to Wiesner, 1983 (honey, glycerol, wheat bran, yeast, skimmed milk) and the cultures are flourishing. Entomopathogenic nematodes (EPNs) from different sites at Kutsaga were baited and isolated for morphological identification. A total of six strains were isolated and determined to belong to the species Steinernema feltiae. These isolated strains will be evaluated as bio-control agents of root-knot nematodes and insect pests.
Greenhouse trials were also conducted to evaluate the efficacy of natural products, neem and garlic pellets for the control of root-knot nematode (*Meloidogyne javanica*) in tobacco. The use of natural products such as Neem (*Azadrachitca indica* A. Juss) and garlic pellets for root-knot nematode control is widely documented. Both products showed comparable control of nematodes in the greenhouse with Velum and Fenamiphos standards, and testing will continue in the seedbed during the next season.

Furthermore, trials on the Katambora cultivar (G HR1) with high root-knot nematode suppression potential continued. The GHR1 cultivar, grows prostrate on the ground and is more likely to proliferate in the field faster than the old Katambora cultivar. Trials are continuing to evaluate the nematode population dynamics in both the greenhouse and field.

### 4.2 PLANT CLINIC

![Image of tobacco samples in the Plant Clinic](image-url-a) ![Image of lightning damage on tobacco](image-url-b)

**Figure 4.5:** Tobacco samples in the Plant Clinic (a) lightning damage on tobacco (b)

A total of 474 samples (399 for pest and disease diagnosis and 75 for root-knot nematode diagnosis) were received and processed in the Division. Of the samples received, 58% were of non-tobacco crops. Of the 75 samples received in Nematology, 93% were soil while the rest were root and water.

Indications from the array of samples received are that the major plant health challenges on tobacco in the season under review were cold and salt injury and phytotoxicity problems during seedling production (Fig 4.5). This can be attributed to improper sprayer calibrations, failure to time sprays correctly and over-application of products. In the field crop, aphid-transmitted virus diseases, such as PVY and the mechanically transmitted Tobacco Mosaic Virus (TMV), on K RK26 were also prevalent. Other incidental problems in tobacco included physiological disorders such as potassium firing, water soaking, lightning damage (Fig. 4.5.b)

The non-tobacco samples were predominantly composed of potato, tomato and other horticultural crops. These were mostly diagnosed with wilts caused by bacteria and fungi such as *Fusarium* spp and root and stem rots caused by *Rhizoctonia* and *Pythium* spp.
Generally, advice given to growers was to adopt an IPM approach for pest and disease management and where possible to prevent infections and infestations through the use of cultural, legislative and biological control measures in addition to agrochemicals. This approach will not only ensure that the grower’s costs are minimized but will enable the sustainable and responsible production of tobacco.

Training

Staff from the Division were involved in training of both internal and external clients on various aspects of crop protection including the proper sprayer calibration and correct pesticide application.

Publications

- Seven abstracts were accepted from the Division for presentation at the CORESTA 2014 Congress in Quebec, Canada.
- Staff from the Division produced several articles on various aspects of tobacco crop protection which were published in various Zimbabwe Farmer magazines including Zimbabwe Tobacco Today, The Zimbabwe Farmer and The Farming Magazine.

Conferences and workshops attended

- Dr S Dimbi attended, from 13-17 October 2013 the joint CORESTA meeting of the Agronomy & Leaf Integrity and Phytopathology & Genetics Meeting in Brufa di Torgiano, Italy.
- Mrs T Sigobodhla, in the company of Mr C. Koga from Agronomy Skills Group, visited Yunnan, China from 07-15 April 2013 on invitation by the Yuxi Zhongyan Tobacco Seed Co. Ltd. The two joined a group of other 11 tobacco experts and assisted in evaluating some 500 ha of the Kutsaga variety K RK26 grown in the field at Zhefang in Mangshi Dehong, Yunnan. They also had opportunities to give oral presentations on their areas of expertise to 60 tobacco field technicians.

![Figure 4.6: C Koga and T Sigobodhla in Yunnan](image)

5.0 FIELD SERVICES

**Mission:** To maximize value from Board Stations and to provide practical advice and assistance to growers to improve management of the crop and increase grower returns.

5.1 KUTSAGA FARM

5.1.1 Rainfall

The total rainfall received during the season was 754.7mm with the highest rainfall received in January (258.1 mm) (Table 5.1). The high rainfall received in January and February increased the ripening rate of the tobacco crop putting pressure on the curing facilities. The average annual rainfall for the station is 850 mm.

![Figure 5.1: Kutsaga Annual Rainfall Figures for the 2012-13 and 2013-14 Seasons](image)

5.1.2 Commercial Tobacco Production

A total of 229.6 tonnes of leaf from the commercial crop was produced at an average yield of 4.175 t/ha (Table 5.2). Of this, 173 tonnes were sold at an average price of $3.64 and 55.9 tonnes were sold at an average price of $1.24.

**Table 5.1:** A comparison of the 2013/14 season and the 2012/13 season

<table>
<thead>
<tr>
<th>Year</th>
<th>Area (ha)</th>
<th>Sold (kg)</th>
<th>Gross (kg)</th>
<th>Percentage of Sold Mass/Gross</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013-2014</td>
<td>108</td>
<td>230855</td>
<td>258655</td>
<td>89.1</td>
</tr>
<tr>
<td>2012-2013</td>
<td>137</td>
<td>219507</td>
<td>290534</td>
<td>75.6</td>
</tr>
</tbody>
</table>
5.1.3 Management of Experiments and Seed Production

The aim of this project was to establish and manage experimental and seed crops. A total of 108 ha of crop area, was established. Of this 31 ha was for the seed crop and 22 ha experimental.

5.1.4 Commercial Tobacco Seedling Production

The aim in the 2013/2014 season was to produce 3000 ha equivalent of seedlings for revenue generation. Kutsaga Station established a gross 2706 ha, and a total of 1550 ha worth of seedlings were collected, effectively a 57% pullable rate. Supply and demand trends did not tally; there was over production of seedlings between September and October when collections were low and overwhelming demand in December towards the onset of the rains. There was stunted growth in seedlings sown in the second half of August due to salt injury culminating in a reduction of standard transplantable seedlings. Going forward it has been resolved to sow no later than the 10th of August.

5.1.5 Commercial Pea Production

Some 10 ha of a pea crop made up of 5.5 ha mange tout and 4.5 ha sugar snap was established on contract. A total of 27.4 tons with a pack out rate of 82% were delivered to the client (Figure 5.6). The target yield was not accomplished due to a variety of reasons that included poor sugar snap seed, variable electricity supply and water pump breakdowns which extended irrigation turnaround times culminating in a relatively shorter harvest period, reduced outputs and quality. It was also noted that peas cannot be continuously grown in the same land without facing disease problems. However, despite these setbacks the project passed the international Global Good Agricultural Practices (Global G.A.P) audit and Kutsaga farm gained accreditation to the National Sanitation Foundation (NSF Certification).

5.2 MASVINGO STATION

5.2.1 Rainfall

Some 871 mm of rainfall was received in the season. This is against a 5 year annual average of 495 mm.

5.2.2 Station Activities

The main activity at the station was seed production and approximately 616 kg of K RK26R was produced from the 3 ha that had been established. Additionally, some 0.24 ha of Plant Breeding Cooperative Cultivar Trials (CCT) and Oriental trials were established and maintained at the station.

5.2.3 Station Assets

Some assets including a brand new tractor, a single cab truck, a motor bike and a two-disk plough were purchased for the station. Also noteworthy was the construction of 12 staff housing units (Fig 5.1).
5.3 BANKET STATION

5.3.1 Rainfall

The total rainfall for 2013/14 season was 879.3 mm compared to 656 mm of the previous season.

5.3.2 Station Activities

The main activity was seed production. A total of six seed plots (8.5 ha) were established and some 730 kg of burley seed was obtained. Two hectares of sunnhemp were established from which 734 kg of seed was obtained. A 1 ha plot of flue-cured commercial crop yielded 2.9 t.

A number of trials, namely the Dark fire, Dark air, flue-cured CCT and Burley CCT were established and maintained at the station.

Approximately 930 ha worth of commercial seedbeds were established (Figure 5.2). Only 535.9 ha were sold while well over 300 ha that had overgrown were destroyed resulting in a 57.6% pullable rate.
5.3.3 Station Assets

New machinery and equipment which include a tractor, two motorbikes and a truck were purchased for the station.

5.3.4 Social Responsibility Activity

Twelve inmates graduated from Tobacco Research Board-Zimbabwe Prison and Correctional Services (TRB-ZPCS) Training Linkage. They were issued with TRB certificates in Tobacco Production.

5.4 ENGINEERING, MAINTENANCE AND TRANSPORT SERVICES

The main objective of this unit is to provide timely engineering, repair and maintenance services. Several construction projects were undertaken. These included twelve staff houses at the Oriental station, a 36 m x 18 m grading shed for the Kutsaga farm and an 8 tonne capacity cold room for seed storage at Kutsaga. A misting system was installed in the new and old grading sheds to improve cured leaf conditioning. A guard room was also constructed in land 9 at Kutsaga. A seed capsule drying facility was installed at Banket station. Several air conditioners were installed at Kutsaga.

Irrigation was extended to land 7 at Kutsaga. Irrigation capacity increased at Kutsaga with the drilling of a new borehole. A 30 Hp booster pump was installed at Kutsaga to improve raw water supply to the seedbeds, farm boilers and the EPS factory. The Analytical Chemistry Services borehole was automated to ensure an uninterrupted water supply to the division.

A new 250 kVA generator for Kutsaga station was purchased and mounted on a movable trailer for use at the lower dam, land 4 reserve tank, upper dam pumps or any other point depending on operations. The Farm and Analytical Chemistry Services steam boilers were repaired as required by National Social Security Association (NSSA).

Two new twenty-three seater civilian buses and two 80 hp tractors were received. Several board vehicles were repaired and serviced. Tractors and equipment were maintained including the re-building of the Banket MF 390 tractor.

5.4.1 Staff Activities

- The Engineering team attended an Operation Maintenance for the EPS Factory training course
- Engineer Wisdom Munanga attained a Post graduate Diploma in Project Management and also attended the following development Courses during the period under review:
  - Workshop on Thermal use of solar energy conducted by The Zimbabwe Institute of Engineers.
  - Irrigation and intensive crop Management Training Programme in Israel.
  - Enrolled for an MPhil in Agricultural Engineering with Chinhoyi University of Technology.
5.5 BUSINESS PROCESSES

5.5.1 Calendar-based training

Approximately 5 700 farmers attended on and off-station training at Kutsaga Station and in major tobacco growing areas. The programme covered all the critical developmental stages of the crop and related management practices. The training is participatory and learner-centred, mostly relying on an experiential learning approach and involving regular field observations and group analysis of standard practices.

5.5.2 Kutsaga Tobacco Improved Productivity Sites

Some 11 880 farmers were trained during the 2013-2014 Tobacco Improved Productivity Sites (TIPS) programme through either TRB facilitation and/or host farmer/AGRITEX on site. Aspects covered in the season-long tobacco training included land preparation, seedbed management, field management, fertiliser management, diseases and pest management, reaping curing, grading and marketing. For the smooth implementation of the programme, assistance, in terms of support and materials, was provided through collaboration with AGRITEX, Windmill and ZFC, respectively. In order to motivate growers, the programme incorporated certification of participants and awards to outstanding TIPS performers as the climax and conclusion of the training programme. A total of 71 TIPS were established nation-wide as indicated in Figure 5.4.

![Figure 5.4: Kutsaga Tobacco Improved Productivity Sites (Kutsaga TIPS) in Zimbabwe](image-url)
5.5.3 Outreach activities

Various outreach activities were undertaken within the course of the year with interactions through agricultural shows and field days, help desks at tobacco sales floors, television talk shows, workshops and symposia, farm visits as well as inquiries through the various means of communication.

Figure 5.6: Off-station tobacco workshop in Jerera, Masvingo

6. **ANALYTICAL CHEMISTRY SERVICES**

**Mission:** To provide world class value - adding chemical and pesticide analysis.

6.1 **ACCREDITATION**

The Division carried out two internal audits and an external audit was done by the South Africa Accreditation System (SANAS) in June 2014. The overall certificate was retained, although the Microbial method was suspended from the scope.

One Technical Signatory for the methods ACS 001, ACS W004, ACS W005, W008 and ACS W009 and another one for ACS R001 were approved.

6.2 **SAMPLE ANALYSIS**

A total of 6253 samples were analysed by the Division against a target of 5490 samples. These are soil (1698), foliar and plant (2929), water (518), pesticide residue (894) and product samples (350) (Figure 6.1).

The bulk of these samples were plant and foliar samples from Research Divisions. Water samples and product samples continue to be on the increase.

![Figure 6.1](image-url): Samples analysed by Analytical Chemistry Services Division in 2013/14 season versus the target.
6.3 METHODS DEVELOPED/VALIDATED

Two analytical chemistry methods, one for strobilurins and the other for total nitrogen in tobacco were developed/validated against a target of four. These are now in routine use for analysis of both research and commercial samples.

6.4 PROFICIENCY TESTING

The laboratory participated in two inter-laboratory and one intra-laboratory testing exercises and four Proficiency testing schemes as listed below:

6.4.1 Food Agriculture Proficiency testing Scheme (FAPAS) for pesticide residues.
6.4.2 SADCmet-NAMwater Proficiency testing scheme for water chemical analysis.
6.4.3 AGRILASA Proficiency Testing Scheme for soil, plant material, water, fertiliser and feed for chemical analysis.
6.4.4 Thistle QA Scheme for microbial tests.

The laboratory performed well in the detection of some of the pesticide residues such as DDT and Iprodione which were highlighted at the CORESTA agrochemical subgroup meeting as problematic pesticides to test.

The majority of test methods for water chemical testing gave results that were within acceptable ranges. However, a few of the test methods need re-validation because the expected ranges by AGRILASA PT Scheme are outside the initial validation data.

6.5 INSTRUMENTS

6.5.1 The Division greatly appreciates the purchase by the Board of an Atomic Absorption Spectroscopy instrument and Electrical Conductivity meter.
6.5.2 The HPLC instrument used for major analyses such as nicotine/nornicotine for breeder seed and other products was not working for 8 months greatly affecting Divisional output.

6.6 TRAINING AND CONFERENCES

- Cabinet Musuna-Garwe attended the CORESTA Agrochemical subgroup meeting in Germany from 24 June to 28 June 2014. This is a forum where results of FAPAS Proficiency Testing scheme and methodologies are discussed as well as other emerging issues to do with pesticide residue testing in tobacco.
- Mrs Cabinet Musuna-Garwe represented management at an Insurance and Pensions Commission (IPEC) - organised Pension Trustees Workshop in Victoria Falls. Participants were trained on aspects of how to manage Pension Funds.

[C. C. Musuna-Garwe, C. Mureya, B. Mudyawabikwa, N. P. Sibanda, M. Mutanhaurwa]
7. **MOLECULAR BIOLOGY SERVICES**

**Mission:** To provide accurate and rapid molecular diagnostics and characterization services for pests, disease agents and plant genotypes

### 7.1  GMO TESTING SERVICE

The total number of samples screened for genetic modification (GM) was 215 compared to 225 received in the same period last year, 2012-2013. Three maize samples and one soya sample tested positive for genetic modification and the rest of the samples tested negative for genetic modification. Sample distribution was as indicated in Figure 7.0 and 7.1.

![Figure 7.0](image1.png)

**Figure 7.0:** Percentage distribution of samples screened for genetic modification.

![Figure 7.1](image2.png)

**Figure 7.1:** Comparison of GM samples received in 2012-2013 and 2013-2014
The GMO screening method is accredited to ISO 17025:2005 standard through South African National Accreditation System (SANAS). Annual assessments are done for conformity and maintenance of set standards. The external audit of quality management system ISO 17025:2005 was done on the 12\textsuperscript{th} and 13\textsuperscript{th} of June 2014 resulting in continued accreditation being recommended.

7.2 DNA FINGERPRINTING

A total of 51 samples were processed for variety determination and tobacco ownership dispute resolution, a 250 \% increase over samples processed the previous season.

7.3 VIRAL INDEXING

A total of 20 samples were analyzed for viral infection which is higher than the nine samples analyzed the previous year. Overall, 286 samples were processed for GMO screening, hybrid proving and viruses against an expected output of 450 samples.

Failure to achieve target was attributed to a decrease in tobacco merchant derived samples as the Tobacco Industry and Marketing Board sampling strategy has been changed from one sample per tonne to one sample per load.

7.4 PROFICIENCY SAMPLES

The division participated in the US Department of Agricultural Grain Inspection Packers and Stockyards Administration (USDA/GIPSA) proficiency programme and the International Seed Testing Association (ISTA) programme. Proficiency testing is used as quality assurance for the lab performance capability. ISTA maize samples and USDA/GIPSA maize and soya samples were received on 28 November 2013 and 16 May 2014 respectively. It is pleasing to note that 35S and NOS events used routinely in the laboratory achieved a 100 \% score performance.

7.5 VARIETY IDENTIFICATION AND INTELLECTUAL PROPERTY RIGHTS

The Tobacco Marketing and Levy Act (18:21) governs the tobacco seed and varieties offered for sale in Zimbabwe on the recommendation of TRB. To ascertain that the legislation is adhered to, and to ensure protection of the plant breeders rights on tobacco varieties, DNA fingerprinting protocols for identification of TRB tobacco varieties are being developed. In the year under review, 30 primers (UBC and SSR markers) were analyzed and among them potentially discriminating markers were identified for use in tobacco DNA fingerprinting.

7.6 DIAGNOSTICS AND CHARACTERIZATION

7.6.1 A real time PCR protocol for GMO Quantitation in tobacco

The protocol was successfully validated and completed for GMO Quantitation in maize and tobacco.
7.6.2 Marker-assisted selection of tobacco germplasm for resistance genes.

Development of molecular markers for screening tobacco germplasm for TMV, White Mould and Granville Wilt resistance genes was carried out. Parentals were screened for marker polymorphism using SSR markers and two markers, PT30021 and PT51635, showed potential polymorphism in TMV and WM. These are long term projects and will be carried over into the next season.

![Image](image.png)

**Figure 7.2:** PT 51635 SSR marker polymorphism in K51, SNTCB and KRK29 by the absence of the 250bp band.

### 7.7 TISSUE CULTURE AND MICROPROPAGATION

This was resuscitated in August 2013 to satisfy customer requests. A total of 80 635 plantlets were dispatched against a set target of 100 000 which was achieved. The division is currently producing 10 000 minitubers for a single customer and is also currently producing sweet potato, strawberry and cassava plantlets in tissue culture.

[N. Muzhinji, F. Mufunda, T. Sagonda]
8. **STATISTICAL SERVICES**

**Mission:** To provide efficient and innovative experimental designs, data analysis and interpretation services from gene to ecosystem level as a basis for recommending new crop management practices.

8.1 **EXPERIMENTAL DESIGN AND ANALYSIS**

During the 2013/2014 season 155 projects from Plant Health, Crop Productivity, Plant Breeding and Field Services were designed and 118 were analysed representing a 2% decrease over last season. Compared to last season a 15% increase was achieved for the number of projects graded and analysed.

8.2 **RESEARCHER ADVISORY SESSIONS**

Some 28 consultations were conducted mostly on interpretations of results, mean separation, probit analysis and designing of questionnaires, indicating a decrease of 12% compared to last season’s figures. A training session on Designs was conducted for all new students and research officers. This helped in decreasing the number of advisory sessions held. It also indicates that researcher have improved in their understanding of Biometry.

8.3 **FIELD VISITS/INSPECTIONS**

To enable objective data collection, analysis and management, 88 projects were inspected in the field, which is 26% less than the visits conducted last season. This was so because trials were visited only once.

8.4 **PROJECT TRACKING UPDATES**

Some 11 project tracking updates were sent out, representing a 100% achievement of the target.

8.5 **PROJECTS ARCHIVED**

A total of 75 projects were edited, circulated and archived for future reference. This was a 2% increase from last season. In addition 17 abstracts were edited and sent for the CORESTA conference and 29 contract research projects were also edited and sent to the respective companies.

[F. Zinyandu, S. Banana, B. Kachembere]
9. TECHNOLOGY AND CLIMATE CHANGE

Mission: To integrate new innovations to improve efficiency of tobacco operations while ensuring sustainable and responsible production.

9.1 Evaluation of the curing efficiency of coal briquettes as a source of fuel in tobacco curing

Figure 9.0: Coal briquettes before combustion

Figure 9.1: Coal briquettes during combustion

The objective of this trial was to assess the curing efficiency of coal briquettes as an alternative source of fuel in tobacco curing. As in the past season, the coal briquettes fed-barn took 9 – 11 days to complete a curing cycle. The Specific Fuel Consumption was 6 kg and 4 kg to cure a kg of tobacco for the coal briquettes and coal cobbles (control) respectively. There were no significant differences in the grade index and combustion efficiency in the coal briquette- fired barn and the coal cobble-fired barn (p>0.05). The experiment will be repeated in the next season.

[W. Munanga]
10. BUSINESS AND FINANCE

Mission: To generate revenue to sustain Board operations through building life-time relationships with growers and other stakeholders and heightening the perception value from sustainable and responsible tobacco production (VSEPs).

10.1 PRODUCT SALES INFORMATION

Sales figures for seed, Gromix, float trays and float fert were presented to management on a regular basis. This information assisted management to craft strategies to improve sales efficiencies, achieve competitive advantage and maximize revenue generation for the Board.

10.2 REGIONAL SEED SALES

A total of 1,844 kg of tobacco seed was exported to Mozambique, Malawi, South Africa and Tanzania. The most popular varieties were BRK4, BRK5 and KRK26R. Traditional tobacco seed buyers in Zambia did not purchase seed from the Board during the period under review partly as a result of changes in the contract system in that country. The Board will review its regional strategy with the aim of regaining the lost Zambian tobacco seed market.

10.3 STAFF TRAINING

A total of 35 staff members, including students, were trained on customer and market-related matters. To ensure involvement of all participants during the training process, a roundtable discussion approach was adopted. Different scenarios encountered with customers during sales were presented and strategies to create life-time relationship with growers were discussed by the group.

10.4 MARKETING

As a way of marketing the Board’s products and services, Business Processes and Business Development participated at 24 agricultural shows around the country. The team scooped prizes at the Bindura and Chinhoyi Provincial Agricultural Shows for the best displays under the agri-business sector. The Board also exhibited at the 2013 Harare Agricultural Show.

10.5 PRODUCTION AND SALE OF PRODUCTS

10.5.1 Production

The following products were produced: 26,000 bags of Gromix; 123,000 float trays and; 38,000 litres of floatfert. The Board faced a number of challenges with the production of float trays that included power cuts and the machine breakdowns caused mostly by fluctuations in electricity supply.
10.5.2 Sales

The following products were sold: 22,000 bags of Gromix; 109,000 float trays and; 26,000 litres of floatfert. The Board failed to meet its Gromix sales target of 38,000 bags partly due to competition from new products on the market. In order to improve and standardize the product quality, the Board embarked on a project to artificially compost pine bark. Currently, milling and composting of bark is in progress in the Chimanimani area.

10.6 TOBACCO SEEDLING SALES

Seedlings worth 2,100 ha of field tobacco, a 20% increase from the figure achieved last season, were sold on cash and stop order basis. Loan recovery on stop orders was above 70%. The Board engaged a debt collector to recover all the outstanding seedling loans.

10.7 WORKSHOPS ATTENDED

Mr Tafadzwa Dzingai attended a Pension Trustees Workshop in Victoria Falls.

[P. Siwela, T. Dzingai, M. Nyakachiranje, O. Mharapara]
11. HUMAN RESOURCES

Mission: To attract, train and retain competent staff to drive and sustain innovations.

11.1 TRAINING

Fulfillment of the mandate for Tobacco Research Board is largely dependent on the attitudes, knowledge, skills and abilities of its employees. Thus the contribution that members of staff make to the attainment of the organisation’s high expectations and those of clients is highly valued. Development of members of staff is, therefore, a top priority.

Various staff development initiatives were done during the period under review. A number of staff members enrolled with different universities and colleges for diplomas and higher degrees for the purposes of self development.

11.2 INTEGRATED RESULTS BASED MANAGEMENT

In line with the TRB’s vision of a high performance culture and lifelong learning, Integrated Results Based Management was introduced and processes for the Board to be in full compliance are in progress.

11.3 JOB EVALUATION

To buttress the high performance culture a job evaluation exercise was carried out and the organization is now moving towards the full implementation of the Integrated Results Based Management.

11.4 COURSES ATTENDED

Mr C Mushore attended an Integrated Results Based Management development course on Evaluation of the Implementation of the HIV and Aids Agricultural Sector Strategy Workshop.

11.5 STAFF ESTABLISHMENT

The Staff establishment as at 30 June 2014

<table>
<thead>
<tr>
<th>Category</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional</td>
<td>37</td>
<td>47</td>
</tr>
<tr>
<td>Senior Technical Staff</td>
<td>44</td>
<td>35</td>
</tr>
<tr>
<td>Farm/Stores/Workshop/Messenger/Security</td>
<td>147</td>
<td>151</td>
</tr>
<tr>
<td>Admin/Accounts/Clerical</td>
<td>12</td>
<td>14</td>
</tr>
<tr>
<td>University Students</td>
<td>47</td>
<td>47</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>287</strong></td>
<td><strong>294</strong></td>
</tr>
</tbody>
</table>

During the 2013-2014 season, 691 contract workers were engaged against 976 employed the previous year.
11.6 STAFF APPOINTMENTS AND DEVELOPMENT

11.6.1 Plant Breeding

- Dr Frank Magama joined the Board as Senior Plant Breeder
- Roy Tofa joined the Board as Field Assistant
- Justify Shava enrolled for a D Phil in Plant Breeding with the University of Zimbabwe.

11.6.2 Seed Production

- Ms Margaret Muchatibaya enrolled for a Diploma in Agriculture and is in 2nd year.
- Kudzanai Chinzara left the Board on disciplinary grounds.
- Wilson Musuna, Luke Nyangu, Paul Andrea, and Ms Emencilda Muyengi, joined the Board on fixed term contracts as Field Assistants

11.6.3 Crop Productivity Services

- Ms Rebecca Tome enrolled for a Diploma in Agriculture and is in 2nd year.

11.6.4 Plant Health Services

- Cleopas Chinheya is currently working towards Ph. D in Plant Pathology at the School of Agricultural, Earth and Environmental Sciences at University of Kwazulu Natal, South Africa.
- Luckson Kanyuka was appointed as Lab Field Assistant on a permanent basis.

11.6.5 Field Services Division

- Ezekia Svotwa resigned from Board in February 2014.
- Richard Bolton joined the Board April 2014.
- Irvin Kagoro was transferred from FSD to PHS.
- Kosta Chigawu retired in August 2014 after having served the Board for 34 years.
- Josphat Mahachi retired in August 2014 after having served the Board for 28 years.

11.6.6 Analytical Chemistry Services

- Musekiwa Mutanhaurwa joined the Board as a Chemist.
- Farai Paruwani and Ms Memory Chikuhuhu joined the Board as Lab Assistants on a one year fixed term contract.
- Mrs Catherine Majoni retired in April after having served the Board for 15 years
- Bonwell Hunvi retired in January 2014 after having served the Board for 40 years

11.6.7 Molecular Biology Services

- Norman Muzhinji was granted study leave to pursue a PhD in Molecular Biology at the University of Pretoria.
- Mrs Fortunate Mufunda and Tichaona Sagonda joined the Board as Molecular Biologists.
11.6.8 Statistical Services

- Mrs Betty Mawire attained a BSc Special Honours in Statistics and Operation Research.

11.6.9 Finance and Corporate Services

- Felix Sengudzwa attained a Bachelor of Technology Hons in Information Technology degree.
- Farai Nyahasha joined the Board as Security Officer on a one year fixed term contract.
- Terence Simbi was appointed as Accounts Clerk on a one year fixed term contract.
- Methew Murinda was appointed Accounts clerk on a permanent basis.
- Parerinyatwa Chizinga retired from the Board effective 30 June 2014 after serving the Board for 19 years.

11.6.10 Business Development and Marketing.

- Shephard Manatsa joined the Board as a Boiler Operator
- Kenard Chivingwa left the Board on disciplinary grounds.
12. FINANCE

12.1 FINANCE

The financial performance of the TRB was commendable. Total income went up by 34.4% from $10,427,250 in 2012 to $14,017,439 in 2013. Tobacco levy receipts increased by 18.5% from $3,511,750 in 2012 to $4,160,000 in 2013. Other income grew by 42.2% from $6,521,745 in prior year to $9,274,421 in 2013. Other income consist of Seed sales (77, 3%), Tobacco Sales (8.9%), Laboratory analysis income (2.5%) among others (11.3%). No Government grant was received in both the year 2013 and year 2012. Total expenses remained relatively constant from $8,857,762 in 2012 to $8,737,360 in 2013, which was a marginal 1.4% decrease.

In 2013, the asset base of the entity increased by 28.8% from $19,616,537 to $25,272,980 mainly due to an increase of 106.3% in investments.

12.2 INFORMATION TECHNOLOGY

12.2.1 Network

Fibre cable for internet connection was installed by Telone, with 4mbps bandwidth. CAT (Category) 5 cables in the Administration block local area network were replaced by CAT6 cables. Four wireless access points were installed as were three cisco switches and a cisco router.

12.2.2 Hardware

Twenty nine IP cameras (CCTV) were fitted and a physical firewall was installed. To increase capacity, five servers were purchased including the rack cabinet.

12.2.3 Software

The lotus notes and domino software was upgraded from version 6 to version 9 (Mailing system) and point of sale software was introduced for the tobacco auction floors seed sales (Kutsaga, Boka and TSF)
REPORT OF THE INDEPENDENT AUDITORS

Report on the financial statements

We have audited the accompanying financial statements of the Tobacco Research Board as set out on pages 5 to 26, which comprise the statement of financial position as at 31 December 2013, the revenue and expenditure statement, the statement of changes in equity, the statement of cash flows for the year then ended, and the notes to the financial statements, which include a summary of significant accounting policies and other explanatory notes.

Directors’ Responsibility for the financial statements

The Directors are responsible for the preparation and fair presentation of these financial statements in accordance with International Financial Reporting Standards (IFRS) and in the manner required by the Tobacco Research Act (Chapter 28:21). This responsibility includes: designing, implementing and maintaining internal controls relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error; selecting and applying appropriate accounting policies; and making accounting estimates that are reasonable in the circumstances.

Auditor’s Responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with International Standards on Auditing. These standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgement, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion the financial statements give a true and fair view of the financial position of Tobacco Research Board as at 31 December 2013 and its financial performance and its cash flows for the year then ended in accordance with International Financial Reporting Standards.
REPORT OF THE INDEPENDENT AUDITORS (continued)
TO THE MINISTER OF AGRICULTURE, MECHANISATION AND IRRIGATION DEVELOPMENT AND TO
THE CHAIRMAN AND THE MEMBERS OF THE BOARD OF THE TOBACCO RESEARCH BOARD IN
TERMS OF SECTION 11 OF THE TOBACCO RESEARCH ACT (CHAPTER 28:21)

Report on other legal and regulatory requirements

In our opinion, the current period financial statements have, in all material respects, been properly prepared in compliance with the disclosure requirements of the Tobacco Research Act (Chapter 28.21).

DELOITTE & TOUCHE
HARARE, ZIMBABWE
31 December 2013
## TOBACCO RESEARCH BOARD
### REVENUE AND EXPENDITURE STATEMENT
for the year ended 31 December 2013

<table>
<thead>
<tr>
<th>Note</th>
<th>2013 US$</th>
<th>2012 US$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tobacco levy</td>
<td>4 160 000</td>
<td>3 511 750</td>
</tr>
<tr>
<td>Government grant</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>4 160 000</td>
<td>3 511 750</td>
</tr>
<tr>
<td>Other income</td>
<td>9 274 421</td>
<td>6 521 745</td>
</tr>
<tr>
<td>Administrative expenses</td>
<td>(7 071 243)</td>
<td>(5 869 864)</td>
</tr>
<tr>
<td>Other operating costs</td>
<td>(2 326 186)</td>
<td>(2 987 898)</td>
</tr>
<tr>
<td>Surplus for the year before finance income and finance cost</td>
<td>4 733 894</td>
<td>1 175 733</td>
</tr>
<tr>
<td>Finance income</td>
<td>583 018</td>
<td>393 755</td>
</tr>
<tr>
<td>Finance costs</td>
<td>(32 834)</td>
<td>(2 645)</td>
</tr>
<tr>
<td><strong>Surplus for the year</strong></td>
<td><strong>5 309 879</strong></td>
<td><strong>1 566 843</strong></td>
</tr>
</tbody>
</table>
## TOBACCO RESEARCH BOARD

### STATEMENT OF FINANCIAL POSITION

as at 31 December 2013

<table>
<thead>
<tr>
<th>Notes</th>
<th>2013 US$</th>
<th>2012 US$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Assets</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Non-current assets</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Property, plant and equipment</td>
<td>7</td>
<td>12,529,708</td>
</tr>
<tr>
<td>Long-term receivable</td>
<td>8</td>
<td>59,612</td>
</tr>
<tr>
<td>Investments</td>
<td>12</td>
<td>180,274</td>
</tr>
<tr>
<td><strong>Total non-current assets</strong></td>
<td></td>
<td>12,769,594</td>
</tr>
<tr>
<td><strong>Current assets</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biological assets</td>
<td>9</td>
<td>961,979</td>
</tr>
<tr>
<td>Inventories</td>
<td>10</td>
<td>3,253,188</td>
</tr>
<tr>
<td>Trade and other receivables</td>
<td>11</td>
<td>7,006,853</td>
</tr>
<tr>
<td>Investments</td>
<td>12</td>
<td>50,935</td>
</tr>
<tr>
<td>Cash and cash equivalents</td>
<td>13</td>
<td>189,888</td>
</tr>
<tr>
<td><strong>Total current assets</strong></td>
<td></td>
<td>12,533,186</td>
</tr>
<tr>
<td><strong>Total assets</strong></td>
<td></td>
<td>25,302,780</td>
</tr>
</tbody>
</table>

**Reserves and liabilities**

<table>
<thead>
<tr>
<th>Notes</th>
<th>2013 US$</th>
<th>2012 US$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reserves</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capital reserve</td>
<td></td>
<td>13,688,256</td>
</tr>
<tr>
<td>Accumulated surplus</td>
<td></td>
<td>10,375,723</td>
</tr>
<tr>
<td><strong>Total reserves</strong></td>
<td></td>
<td>24,063,979</td>
</tr>
<tr>
<td><strong>Liabilities</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Current liabilities</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trade and other payables</td>
<td>14</td>
<td>929,236</td>
</tr>
<tr>
<td>Short-term loan</td>
<td>15</td>
<td>309,565</td>
</tr>
<tr>
<td><strong>Total liabilities</strong></td>
<td></td>
<td>1,238,801</td>
</tr>
<tr>
<td><strong>Total reserves and liabilities</strong></td>
<td></td>
<td>25,302,780</td>
</tr>
</tbody>
</table>

---------------------------------------------
Chairman

---------------------------------------------
General Manager

31 December 2013
### TOBACCO RESEARCH BOARD
#### STATEMENT OF CHANGES IN EQUITY

as at 31 December 2013

<table>
<thead>
<tr>
<th></th>
<th>Capital reserve US$</th>
<th>Accumulated surplus US$</th>
<th>Total US$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Balance at 1 January 2012</strong></td>
<td>13 688 256</td>
<td>3 499 001</td>
<td>17 187 257</td>
</tr>
<tr>
<td><strong>Surplus for the year</strong></td>
<td>-</td>
<td>1 566 843</td>
<td>1 566 843</td>
</tr>
<tr>
<td><strong>Balance at 31 December 2012</strong></td>
<td>13 688 256</td>
<td>5 065 844</td>
<td>18 754 100</td>
</tr>
<tr>
<td><strong>Surplus for the year</strong></td>
<td>-</td>
<td>5 309 879</td>
<td>5 309 879</td>
</tr>
<tr>
<td><strong>Balance at 31 December 2013</strong></td>
<td>13 688 256</td>
<td>10 375 723</td>
<td>24 063 979</td>
</tr>
</tbody>
</table>
## TOBACCO RESEARCH BOARD

**STATEMENT OF CASH FLOWS**

for the year ended 31 December 2013

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>US$</td>
<td>US$</td>
</tr>
<tr>
<td><strong>Cash flows from operating activities</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surplus for the year</td>
<td>5 309 879</td>
<td>1 566 843</td>
</tr>
<tr>
<td>Adjusted for:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Depreciation</td>
<td>711 381</td>
<td>637 296</td>
</tr>
<tr>
<td>- Loss on disposal of property, plant and equipment</td>
<td>(16 000)</td>
<td>25 739</td>
</tr>
<tr>
<td>- Interest received</td>
<td>(608 819)</td>
<td>(393 755)</td>
</tr>
<tr>
<td>- Interest expense</td>
<td>0</td>
<td>2 645</td>
</tr>
<tr>
<td>****</td>
<td><strong>5 396 441</strong></td>
<td><strong>1 838 768</strong></td>
</tr>
<tr>
<td><strong>Movements in working capital:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Decrease/ (Increase) in trade and other receivables</td>
<td>(187 642)</td>
<td>154 116</td>
</tr>
<tr>
<td>Decrease/ (Increase) in inventories</td>
<td>(1 672 867)</td>
<td>282 256</td>
</tr>
<tr>
<td>Increase in biological assets</td>
<td>(98 989)</td>
<td>(311 188)</td>
</tr>
<tr>
<td>Decrease in trade and other payables</td>
<td>249 806</td>
<td>(82 055)</td>
</tr>
<tr>
<td><strong>Net cash generated from/ (utilized in) operating activities</strong></td>
<td><strong>3 686 749</strong></td>
<td><strong>1 881 897</strong></td>
</tr>
<tr>
<td>Interest received</td>
<td>608 819</td>
<td>393 755</td>
</tr>
<tr>
<td>Interest paid</td>
<td>0</td>
<td>(2 645)</td>
</tr>
<tr>
<td><strong>Net cash generated from operating activities</strong></td>
<td><strong>4 295 568</strong></td>
<td><strong>2 273 007</strong></td>
</tr>
<tr>
<td><strong>Cash flows from investing activities</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acquisition of property, plant and equipment</td>
<td>(881 808)</td>
<td>(540 917)</td>
</tr>
<tr>
<td>Proceeds from disposal of property, plant and equipment</td>
<td>24 250</td>
<td>33 223</td>
</tr>
<tr>
<td>Decrease/ (Increase) in long-term receivables</td>
<td>0</td>
<td>2 621</td>
</tr>
<tr>
<td>(Acquisition) /liquidation of investments</td>
<td>(3 703 521)</td>
<td>(1 593 785)</td>
</tr>
<tr>
<td><strong>Net cash utilised in investing activities</strong></td>
<td><strong>4 560 329</strong></td>
<td><strong>(1 707 748)</strong></td>
</tr>
<tr>
<td><strong>Cash generated from financing activities</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Decrease) / Increase in short-term loans</td>
<td>126 558</td>
<td>(52 867)</td>
</tr>
<tr>
<td><strong>Net increase in cash and cash equivalents</strong></td>
<td><strong>(138 954)</strong></td>
<td><strong>121 282</strong></td>
</tr>
<tr>
<td>Cash and cash equivalents at the beginning of the year</td>
<td>189 889</td>
<td>68 606</td>
</tr>
<tr>
<td><strong>Cash and cash equivalents at the end of the year</strong></td>
<td><strong>50 935</strong></td>
<td><strong>189 888</strong></td>
</tr>
</tbody>
</table>
1. **General information**
   The Tobacco Research Board (the “Board”) was established in 1950 under the Tobacco Research Act (Chapter 28:21), with a mandate of directing, controlling and carrying out tobacco research in Zimbabwe.

2. **Basis of preparation**
   The financial statements have been prepared in accordance with the International Financial Reporting Standards (IFRS). The financial statements are prepared from statutory records that are maintained under the historical cost convention.

3. **Application of new and revised International Financial Reporting Standards (IFRS).**
   3.1 **New and revised IFRSs mandatorily effective at the end of the reporting period with no material effect on the reported amounts and disclosures in the current period or prior period**
      
   There were no new or revised IFRSs that became mandatorily effective at the end of the reporting period that were applied by the Board.

   3.2 **Amendments to IFRSs mandatorily effective at the end of the reporting period with no material effect on the reported amounts and disclosures in the current period or prior period**
      
   The following amendments to IFRSs were mandatorily effective and adopted by the Board as at the end of the reporting period, but did not have a material effect on the current or previously reported financial performance or financial position.

   **IAS 12 Income Taxes (amended 2010)**
   Amends IAS 12 Income Taxes to provide a presumption that recovery of the carrying amount of an asset measured using the fair value model in IAS 40 Investment Property will, normally, be through sale.

   **IFRS 7 Financial Instruments: Disclosures (amended 2010)**
   The amendments introduce additional disclosures, designed to allow users of financial statements to improve their understanding of transfer transactions of financial assets (for example, securitisations), including understanding the possible effects of any risks that may remain with the entity that transferred the assets. The amendments also require additional disclosures if a disproportionate amount of transfer transactions are undertaken around the end of a reporting period.

   **IFRS 1 First-time Adoption of International Financial Reporting Standards (amended 2010)**
   The amendments replace references to a fixed date of '1 January 2004' with 'the date of transition to IFRSs', thus eliminating the need for companies adopting IFRSs for the first time to restate derecognition transactions that occurred before the date of transition to IFRSs. They provide guidance on how an entity should resume presenting financial statements in accordance with IFRSs after a period when the entity was unable to comply with IFRSs because its functional currency was subject to severe hyperinflation. The Board early adopted the amendments to IFRS 1, and produced its first IFRS financial statements for the year ended 31 December 2010.
3 Application of new and revised International Financial Reporting Standards (IFRS period (continued))

3.3 New, revised and amended IFRSs mandatorily effective at the end of the reporting period with a material effect on the reported amounts and disclosures in the current and prior period

There were no new, revised or amended IFRSs mandatorily effective at the end of the reporting period that had a material effect on the reported amounts and disclosures in the financial statements.

3.4 New, revised and amended IFRSs in issue, but not yet mandatorily effective at the end of the reporting period and not yet adopted

As at the end of the reporting period, the following IFRS were in issue, optionally effective, but not early adopted by the Board;

IFRS 9 Financial Instruments (issued November 2009, effective January 2013)

IFRS 9 introduces new requirements for classifying and measuring financial assets, as follows:

- debt instruments meeting both a 'business model' test and a 'cash flow characteristics' test are measured at amortised cost (the use of fair value is optional in some limited circumstances);
- investments in equity instruments can be designated as 'fair value through other comprehensive income' with only dividends being recognised in profit or loss;
- all other instruments (including all derivatives) are measured at fair value with changes recognised in the profit or loss; and
- the concept of 'embedded derivatives' does not apply to financial assets within the scope of the standard and the entire instrument must be classified and measured in accordance with the above guidelines.

The future application of this IFRS will not have a material impact on the Board’s financial statements, as the Board currently measures its borrowings at amortised cost, does not have any investments in equity instruments and does not have any financial instruments with embedded derivatives.

IFRS 9 Financial Instruments (issued October 2010, effective January 2015)

This is a revised version of IFRS 9 incorporating revised requirements for the classification and measurement of financial liabilities, and carrying over the existing derecognition requirements from IAS 39 Financial Instruments: Recognition and Measurement.

The revised financial liability provisions maintain the existing amortised cost measurement basis for most liabilities. New requirements apply where an entity chooses to measure a liability at fair value through profit or loss – in these cases, the portion of the change in fair value related to changes in the entity's own credit risk is presented in other comprehensive income rather than within profit or loss.

The future application of this IFRS will not have a material impact on the Board’s financial statements, as the Board currently measures its borrowings at amortised cost and has no future intention to measure them at fair value.
Application of new and revised International Financial Reporting Standards (IFRS period (continued))

3.5 New, revised and amended IFRSs in issue, but not yet mandatorily effective at the end of the reporting period and not yet adopted.

IFRS 12 Disclosure of Interests in Other Entities (issued May 2011, effective January 2013)
Requires the extensive disclosure of information that enables users of financial statements to evaluate the nature of, and risks associated with, interests in other entities and the effects of those interests on its financial position, financial performance and cash flows.
In high-level terms, the required disclosures are grouped into the following broad categories:

- Significant judgments and assumptions - such as how control, joint control, significant influence has been determined;
- Interests in subsidiaries - including details of the structure of the group, risks associated with structured entities, changes in control, and so on;
- Interests in joint arrangements and associates - the nature, extent and financial effects of interests in joint arrangements and associates (including names, details and summarised financial information); and
- Interests in unconsolidated structured entities - information to allow an understanding of the nature and extent of interests in unconsolidated structured entities and to evaluate the nature of, and changes in, the risks associated with its interests in unconsolidated structured entities.

IFRS 12 lists specific examples and additional disclosures which further expand upon each of these disclosure objectives, and includes other guidance on the extensive disclosures required.

The future application of this IFRS is expected to result in the Board’s financial statements including additional qualitative and quantitative disclosures regarding its interests in certain unconsolidated structured entities, such as its major suppliers, customers and lenders.

IFRS 13 Fair Value Measurement (issued 12 May 2011, effective January 2013)
Replaces the guidance on fair value measurement in existing IFRS accounting literature with a single standard.

The IFRS defines fair value, provides guidance on how to determine fair value and requires disclosures about fair value measurements. It does not change the requirements regarding which items should be measured or disclosed at fair value.

IFRS 13 applies when another IFRS requires or permits fair value measurements or disclosures about fair value measurements (and measurements, such as fair value less costs to sell, based on fair value or disclosures about those measurements). With some exceptions, the standard requires entities to classify these measurements into a ‘fair value hierarchy’ based on the nature of the inputs:

- Level 1 - quoted prices in active markets for identical assets or liabilities that the entity can access at the measurement date;
- Level 2 - inputs other than quoted market prices included within Level 1 that are observable for the asset or liability, either directly or indirectly; and
- Level 3 - unobservable inputs for the asset or liability.
3 Application of new and revised International Financial Reporting Standards (IFRS period (continued))

3.6 New, revised and amended IFRSs in issue, but not yet mandatorily effective at the end of the reporting period and not yet adopted.

Entities are required to make various disclosures depending upon the nature of the fair value measurement (e.g. whether it is recognised in the financial statements or merely disclosed) and the level in which it is classified. The future application of this IFRS will not have a material impact on the Board's financial statements, as the Board's financial instruments are currently all measured at amortised cost, and there is no intention to change their classification or measurement basis.

IAS 19 Employee Benefits (amended June 2011, effective January 2013)

Amends IAS 19 Employee Benefits with revised requirements for pensions and other post-retirement benefits, termination benefits and other changes. The key amendments include:

- Requiring the recognition of changes in the net defined benefit liability (asset) including immediate recognition of defined benefit cost, disaggregation of defined benefit cost into components, recognition of remeasurements in other comprehensive income, plan amendments, curtailments and settlements (eliminating the 'corridor approach' permitted by the existing IAS 19)
- Introducing enhanced disclosures about defined benefit plans
- Modifying accounting for termination benefits, including distinguishing benefits provided in exchange for service and benefits provided in exchange for the termination of employment and affect the recognition and measurement of termination benefits
- Clarifying various miscellaneous issues, including the classification of employee benefits, current estimates of mortality rates, tax and administration costs and risk-sharing and conditional indexation features
- Incorporating other matters submitted to the IFRS Interpretations Committee.

The future application of this IFRS is not expected to have a material effect on the Board's financial statements, with respect to accounting for defined benefit plans, as it does not operate or participate in defined benefit pension schemes; but will have an impact on accounting of termination benefits for employee retrenchments and resignations that occur in the future.

IAS 1 Presentation of Financial Statements (amended June 2011, effective on annual reporting periods beginning on or after July 2012)

Amends IAS 1 Presentation of Financial Statements to revise the way other comprehensive income is presented.

The amendments:

- Preserve the amendments made to IAS 1 in 2007 to require profit or loss and other comprehensive income, (“OCI”) to be presented together, i.e. either as a single 'statement of profit or loss and comprehensive income', or a separate 'statement of profit or loss' and a 'statement of comprehensive income' – rather than requiring a single continuous statement as was proposed in the exposure draft
- Require entities to group items presented in OCI based on whether they are potentially reclassifiable to profit or loss subsequently. i.e. those that might be reclassified and those that will not be reclassified
3 Application of new and revised International Financial Reporting Standards (IFRS period (continued))

3.6 New, revised and amended IFRSs in issue, but not yet mandatorily effective at the end of the reporting period and not yet adopted (continued)

IAS 1 Presentation of Financial Statements (amended June 2011, effective on annual reporting periods beginning on or after July 2012 (continued).

- Require tax associated with items presented before tax to be shown separately for each of the two groups of OCI items (without changing the option to present items of OCI either before tax or net of tax).

The future application of this IFRS will have an impact on the Board’s financial statements, in the event that any transaction or events that result in items of OCI items arise, and are therefore required to be presented as described above.

IFRS 7 Financial Instruments: Disclosures (amended December 2011, effective January 2013)
Amends the disclosure requirements in IFRS 7 Financial Instruments: Disclosures to require information about all recognised financial instruments that are set off in accordance with paragraph 42 of IAS 32 Financial Instruments: Presentation. The amendments also require disclosure of information about recognised financial instruments subject to enforceable master netting arrangements and similar agreements even if they are not set off under IAS 32. The future application of this IFRS is not expected to have a material effect on the Board’s financial statements, as it does not offset any of its financial instruments.

IAS 32 Financial Instruments: Presentation (amended December 2011, effective January 2014)
Amends IAS 32 Financial Instruments: Presentation to clarify certain aspects because of diversity in application of the requirements on offsetting focused on four main areas:
- the meaning of 'currently has a legally enforceable right of set-off'
- the application of simultaneous realisation and settlement
- the offsetting of collateral amounts
- the unit of account for applying the offsetting requirements.

The future application of this IFRS is not expected to have a material effect on the Board’s financial statements, as it does not offset any of its financial instruments.

IFRS 1 First-time Adoption of International Financial Reporting Standards (amended March 2012, effective January 2013)
Amends IFRS 1 First-time Adoption of International Financial Reporting Standards to address how a first-time adopter would account for a government loan with a below-market rate of interest when transitioning to IFRSs. The amendments mirror the requirements for existing IFRS preparers in relation to the application of amendments made to IAS 20 Accounting for Government Grants and Disclosure of Government Assistance in relation to accounting for government loans. The future application of this IFRS is not expected to have any effect on the Board’s financial statements, as is not a first-time adopter of IFRSs, and neither does it have any government loans.
3 Application of new and revised International Financial Reporting Standards (IFRS period (continued))

3.7 New, revised and amended IFRSs in issue, but not yet mandatorily effective at the end of the reporting period and not yet adopted (continued)

Annual Improvements 2009-2011 Cycle (issued May 2012, effective January 2013)

Makes amendments to the following standards:

- IFRS 1 — Permits the repeated application of IFRS 1, borrowing costs on certain qualifying assets
- IAS 1 — Clarification of the requirements for comparative information
- IAS 16 — Classification of servicing equipment
- IAS 32 — Clarification that the tax effect of a distribution to holders of equity instruments should be accounted for in accordance with IAS 12 Income Taxes
- IAS 34 — Clarification of interim reporting of segment information for total assets in order to enhance consistency with the requirements in IFRS 8 Operating Segments

Consolidated Financial Statements, Joint Arrangements and Disclosure of Interests in Other Entities: Transition Guidance (Issued June 2012, effective January 2013)

Amends IFRS 10 Consolidated Financial Statements, IFRS 11 Joint Arrangements and IFRS 12 Disclosure of Interests in Other Entities, to provide additional transition relief by limiting the requirement to provide adjusted comparative information to only the preceding comparative period. Also, amendments to IFRS 11 and IFRS 12 eliminate the requirement to provide comparative information for periods prior to the immediately preceding period.
4. Summary of significant accounting policies

4.1 Property, plant and equipment

Property, plant and equipment are stated at cost less accumulated depreciation and accumulated impairment losses.

Assets are depreciated on a straight line basis over their anticipated useful lives as follows:

- Buildings and improvements: 60 years
- Farm plant and machinery: 10 years
- Laboratory equipment: 10 years
- Motor vehicles: 5 years
- Computer equipment: 5 years
- Office furniture and equipment: 10 years

The residual values of assets are reassessed each year. Where the residual value exceeds the carrying amount of the asset no depreciation is charged. At the end of each period management assesses whether there are any indications that an asset is impaired. If any such indication exists, management assesses the recoverable amount of the asset. Where the carrying amount of the asset is greater than the recoverable amount, the asset is written down to its recoverable amount with the adjustment being recognised in the revenue and expenditure statement.

The gain or loss arising on the disposal or retirement of an asset is determined as the difference between the sales proceeds and the carrying amount of the asset and is recognized in the revenue and expenditure statement.

4.2 Impairment of tangible and intangible assets

At the end of each reporting period, the Board reviews the carrying amounts of its assets to determine whether there is any indication that those assets have suffered impairment. If any such indication exists the recoverable amount of the asset is estimated in order to determine the extent of the impairment (if any). Where it is not possible to estimate the recoverable amount of an individual asset, the Board estimates the recoverable amount of the cash-generating unit to which the asset belongs. Where a reasonable and consistent basis of allocation can be identified, corporate assets are also allocated to individual cash-generating units, or otherwise they are allocated to the smallest group of cash-generating units for which a reasonable and consistent allocation basis can be identified.

Recoverable amount is the higher of fair value less costs to sell and value in use. In assessing value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset for which the estimates of future cash flows have not been adjusted. If the recoverable amount of an asset (or cash-generating unit) is estimated to be less than its carrying amount, the carrying amount of the asset (or cash-generating unit) is reduced to its recoverable amount. Impairment is recognised immediately in the revenue and expenditure statement, unless the relevant asset is carried at a revalued amount, in which case the impairment is treated as a revaluation decrease.

Where an impairment subsequently reverses, the carrying amount of the asset (or cash-generating unit) is increased to the revised estimate of its recoverable amount, but so that the increased carrying amount does not exceed the carrying amount that would have been determined had no impairment been recognised for the asset (or cash-generating unit) in prior years. A reversal of impairment is recognised immediately in the revenue and expenditure statement, unless the relevant asset is carried at a revalued amount, in which case the reversal of the impairment is treated as a revaluation increase.
4. Summary of significant accounting policies (continued)

4.3 Financial instruments

Financial assets
The Board’s principal financial assets are trade and other receivables and cash and cash equivalents. Listed shares are regarded as available for sale financial assets, for which fair value can be reliably determined with reference to an active market, are initially recognized at fair value and subsequently stated at a fair value with the change in value being credited or debited to distributable reserves.

Trade and other receivables are stated at their nominal value as reduced by allowances for estimated irrecoverable amounts. Cash and cash equivalents comprise cash on hand and demand deposits and other short-term highly liquid investments that are readily convertible to a known amount of cash and are subject to an insignificant risk of change in value.

Financial liabilities
Financial liabilities are classified according to the substance of the contractual agreement entered into. Significant financial liabilities of the Board are accounts payables, and other payables and these are measured at fair value net of transaction costs. Where the Board has financial instruments which have a legally enforceable right of offset and the Board intends to settle them on a net basis or to realise the asset and liability simultaneously, the financial asset and liability and related revenues are offset and the net amount reported in the statement of financial position and statement of comprehensive income, respectively.

Derecognition of financial liabilities
The Board derecognises financial liabilities when, and only when, the Board’s obligations are discharged, cancelled or they expire. The difference between the carrying amount of the financial liability derecognised and the consideration paid and payable is recognised in the revenue and expenditure statement.

4.4 Taxation

The Board’s receipts and payments are exempt from income tax in terms of the third schedule to the Income Tax Act (Chapter 23:04).

4.5 Government grants

Government grants are not recognised until there is reasonable assurance that the Board will comply with the conditions attaching to them and that the grants will be received. Government grants are recognised in the revenue and expenditure statement on a systematic basis over the periods in which the Board recognises as expenses the related costs for which the grants are intended to compensate.

Specifically, government grants whose primary condition is that the Board should purchase, construct or otherwise acquire non-current assets are recognised as deferred revenue in the statement of financial position and transferred to the revenue and expenditure statement on a systematic and rational basis over the useful lives of the related assets.

Government grants that are receivable as compensation for expenses or losses already incurred or for the purpose of giving immediate financial support to the Board with no future related costs are recognised in the revenue and expenditure statement in the period in which they become receivable.

The benefit of a government loan at a below-market rate of interest is treated as a government grant, measured as the difference between proceeds received and the fair value of the loan based on prevailing market interest rates.
4.6 Foreign currencies

The functional and presentation currency is United States dollar (US$). In preparing the financial statements, transactions in currencies other than the entity's functional currency (foreign currencies) are recognised at the rates of exchange prevailing at the dates of the transactions. At the end of each reporting period, monetary items denominated in foreign currencies are retranslated at the rates prevailing at that date. Non-monetary items carried at fair value that are denominated in foreign currencies are retranslated at the rates prevailing at the date when the fair value was determined. Non-monetary items that are measured in terms of historical cost in a foreign currency are not retranslated.

Exchange differences on monetary items are recognised in the revenue and expenditure statement in the period in which they arise except for:

- exchange differences on foreign currency borrowings relating to assets under construction for future productive use, which are included in the cost of those assets when they are regarded as an adjustment to interest costs on those foreign currency borrowings; and
- exchange differences on monetary items receivable from or payable to a foreign operation for which settlement is neither planned nor likely to occur, which are recognised initially in other comprehensive income and reclassified from equity to the revenue and expenditure statement on repayment of the monetary items.

4.7 Revenue recognition

Revenue is measured at the fair value of the consideration received or receivable. Revenue is reduced for estimated customer returns, rebates and other similar allowances.

4.7.1 Sale of goods

Revenue from the sale of goods is recognised when the goods are delivered and titles have passed, at which time all the following conditions are satisfied:

- the Board has transferred to the buyer the significant risks and rewards of ownership of the goods;
- the Board retains neither continuing managerial involvement to the degree usually associated with ownership nor effective control over the goods sold;
- the amount of revenue can be measured reliably;
- it is probable that the economic benefits associated with the transaction will flow to the Board; and
- the costs incurred or to be incurred in respect of the transaction can be measured reliably.

4.7.2 Interest income

Interest income is accrued on a time basis, by reference to the principal outstanding and at the effective interest rate applicable, which is the rate which exactly discounts estimated future cash receipts through the expected life of the financial asset's net carrying amount.

4.8 Retirement benefit cost

The Board contributes to a defined contribution pension fund for its permanent employees. The Board's contributions are charged to the income statement in the year in which they are due.

The Board also participates in the National Social Security Authority Scheme (NSSA). Payments made to NSSA are dealt with as payments to defined contribution plans, where the Board's obligations under the plans are equivalent to those arising in a defined contribution retirement benefit plan.
4 Summary of significant accounting policies (continued)

4.9 Provisions

Provisions are recognised when the Board has a present obligation (legal or constructive) as a result of a past event, it is probable that the Board will be required to settle the obligation, and a reliable estimate can be made of the amount of the obligation.

The amount recognised as a provision is the best estimate of the consideration required to settle the present obligation at the end of the reporting period, taking into account the risks and uncertainties surrounding the obligation. When a provision is measured using the cash flows estimated to settle the present obligation, its carrying amount is the present value of those cash flows (when the effect of the time value of money is material).

When some or all of the economic benefits required to settle a provision are expected to be recovered from a third party, a receivable is recognised as an asset if it is virtually certain that reimbursement will be received and the amount of the receivable can be measured reliably.

4.9.1 Onerous contracts

Present obligations arising under onerous contracts are recognised and measured as provisions. An onerous contract is considered to exist where the Board has a contract under which the unavoidable costs of meeting the obligations under the contract exceed the economic benefits expected to be received from the contract.

4.9.2 Restructurings

A restructuring provision is recognised when the Board has developed a detailed formal plan for the restructuring and has raised a valid expectation in those affected that it will carry out the restructuring by starting to implement the plan or announcing its main features to those affected by it. The measurement of a restructuring provision includes only the direct expenditures arising from the restructuring, which are those amounts that are both necessarily entailed by the restructuring and not associated with the ongoing activities of the entity.

4.10 Borrowing costs

Borrowing costs directly attributable to the acquisition, construction or production of qualifying assets, which are assets that necessarily take a substantial period of time to get ready for their intended use or sale, are added to the cost of those assets, until such time as the assets are substantially ready for their intended use or sale.

Investment income earned on the temporary investment of specific borrowings pending their expenditure on qualifying assets is deducted from the borrowing costs eligible for capitalisation.

All other borrowing costs are recognised in the revenue and expenditure statement in the period in which they are incurred.

4.11 Agricultural activities

The Board grows tobacco principally for research purposes. Agricultural produce, biological assets are measured at cost. This does not comply with the requirements of IAS 41 “Agriculture”, reason being that the tobacco is not grown for commercial purposes but for the research and experimental purposes. Tobacco Research Board is not a commercial entity.
Summary of significant accounting policies (continued)

4.12 Research and development costs

Expenditure on research activities is recognised as an expense in the period in which it is incurred. Development expenditure on an individual project is recognised as an intangible asset when the Board can demonstrate:

- the technical feasibility of completing the intangible asset so that it will be available for use or sale;
- the intention to complete the intangible asset and use or sell it;
- the ability to use or sell the intangible asset;
- how the intangible asset will generate probable future economic benefits;
- the availability of adequate technical, financial and other resources to complete the development and to use or sell the intangible asset; and
- the ability to measure reliably the expenditure attributable to the intangible asset during its development.

The amount initially recognised for internally-generated intangible assets is the sum of the expenditure incurred from the date when the intangible asset first meets the recognition criteria listed above. Where no internally generated intangible asset can be recognised, development expenditure is recognised in the revenue and expenditure statement in the period in which it is incurred.

4.13 Inventories

Inventories are stated at the lower of cost and net realisable value. Costs of inventories are determined on a first-in-first-out basis. Net realisable value represents the estimated selling price for inventories less all estimated costs of completion and costs necessary to make the sale.

4.14 Financial Instruments

Financial instruments are initially recorded at fair value which approximates cost. Subsequent to initial recognition, financial instruments, with the exception of certain fixed maturity instruments are re-measured at fair value. Fixed maturity investments which the entity intends to hold to maturity are amortized over the life of the instrument based on the underlying effective interest rate. Investments regarded as financial assets held for trading and for which the fair value can be reliably determined are stated at fair value with the change in fair value being credited or debited to profit and loss. Unquoted investments and financial assets regarded as held for trading, but for which the fair value cannot be reliably measured are shown at cost unless the board of directors are of the opinion that there has been an impairment in value, in which case the provision is made and charged to profit and loss. Where the entity has financial instruments which have a legally enforceable right of offset and the entity intends to settle them on a net basis or to realize the asset and liability simultaneously, the financial asset and liability and related revenues and expenses are offset and the net amount reported in the statement of financial position and statement of comprehensive income respectively. Other financial instruments, including borrowings, payables and receivables are initially measured at fair value, net of transaction costs. Subsequent measurement is at amortized cost using the effective interest rate method, with the interest rate expense recognized on an effective yield basis.
5 Critical accounting judgments and key sources of estimation

In the application of the Board's accounting policies, which are described in note 4, the Directors are required to make judgments, estimates and assumptions about the carrying amounts of assets and liabilities that are not readily apparent from other sources. The estimates and associated assumptions are based on historical experience and other factors that are considered to be relevant. Actual results may differ from these estimates.

The estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognized in the period in which the estimate is revised if the revision affects only that period or in the period of the revision and the future if the revision affects both current and future periods.

Property, plant and equipment

The carrying amount of property and equipment would be determined using the existing policies on depreciation. Depreciation is provided on the qualifying equipment over the useful life of the asset in order to progressively write the asset down to its residual value. The useful lives of these assets are reviewed on an annual basis. The Directors are of the view that all in all property, plant and equipment categories, there were no material developments during the year and up to reporting date requiring the revision of previously determined useful lives. The remaining useful lives of the property and equipment have been disclosed per note 4.1.

Growing crops

Growing crops are valued at the total cost of establishing the crop as at year end.

6. Surplus for the year before net finance income

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surplus for the year is stated after charging/ (crediting):</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Profit) /Loss on disposals</td>
<td>(16 000)</td>
<td>25 739</td>
</tr>
<tr>
<td>Audit fees</td>
<td>30 354</td>
<td>22 800</td>
</tr>
<tr>
<td>Directors' emoluments</td>
<td>46 675</td>
<td>40 352</td>
</tr>
<tr>
<td>Depreciation</td>
<td>711 381</td>
<td>637 296</td>
</tr>
<tr>
<td>Staff costs</td>
<td>5 827 171</td>
<td>4 554 780</td>
</tr>
<tr>
<td>Allowance for credit losses</td>
<td>276 926</td>
<td>468 793</td>
</tr>
<tr>
<td>Seedling production</td>
<td>(616 880)</td>
<td>(652 361)</td>
</tr>
<tr>
<td>Tobacco sales</td>
<td>(826 925)</td>
<td>(859 847)</td>
</tr>
<tr>
<td>Seed sales</td>
<td>(7 164 068)</td>
<td>(4 799 932)</td>
</tr>
<tr>
<td>Laboratory analysis income</td>
<td>(228 762)</td>
<td>(215 843)</td>
</tr>
<tr>
<td><strong>__________</strong></td>
<td><strong>__________</strong></td>
<td><strong>__________</strong></td>
</tr>
</tbody>
</table>
7. Property, plant and equipment

<table>
<thead>
<tr>
<th></th>
<th>Buildings and improvements US$</th>
<th>Farm plant and equipment US$</th>
<th>Laboratory equipment US$</th>
<th>Motor vehicles US$</th>
<th>Furniture and office equipment US$</th>
<th>Total US$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cost</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>At 1 January 2012</td>
<td>10 586 596</td>
<td>1 568 151</td>
<td>704 510</td>
<td>877 499</td>
<td>371 995</td>
<td>14 108 751</td>
</tr>
<tr>
<td>Additions</td>
<td>328 728</td>
<td>28 860</td>
<td>125 324</td>
<td>225 001</td>
<td>29 074</td>
<td>736 987</td>
</tr>
<tr>
<td>Disposals</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>(50 500)</td>
<td>-</td>
<td>(50 500)</td>
</tr>
<tr>
<td><strong>At 31 December 2012</strong></td>
<td>10 603 734</td>
<td>1 671 293</td>
<td>847 631</td>
<td>903 139</td>
<td>429 120</td>
<td>14 454 918</td>
</tr>
<tr>
<td>Additions</td>
<td>78 961</td>
<td>76 516</td>
<td>117 962</td>
<td>468 716</td>
<td>139 653</td>
<td>802 847</td>
</tr>
<tr>
<td>Disposals</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>(41 250)</td>
<td>-</td>
<td>(41 250)</td>
</tr>
<tr>
<td><strong>At 31 December 2013</strong></td>
<td>10 682 695</td>
<td>1 747 809</td>
<td>965 593</td>
<td>1 330 605</td>
<td>568 773</td>
<td>15 295 475</td>
</tr>
<tr>
<td><strong>Accumulated depreciation</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>At 1 January 2012</td>
<td>512 959</td>
<td>442 279</td>
<td>172 073</td>
<td>336 856</td>
<td>121 713</td>
<td>1 585 880</td>
</tr>
<tr>
<td>Charge for the year</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disposals</td>
<td>171 631</td>
<td>157 831</td>
<td>75 803</td>
<td>180 162</td>
<td>51 867</td>
<td>637 294</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>(135 788)</td>
<td></td>
<td>(135 788)</td>
</tr>
<tr>
<td><strong>At 31 December 2012</strong></td>
<td>684 590</td>
<td>600 110</td>
<td>247 876</td>
<td>381 230</td>
<td>173 580</td>
<td>2 087 386</td>
</tr>
<tr>
<td>Charge for the year</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disposals</td>
<td>176 732</td>
<td>169 578</td>
<td>89 374</td>
<td>202 397</td>
<td>73 300</td>
<td>711 381</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>(33 000)</td>
<td>-</td>
<td>(33 000)</td>
</tr>
<tr>
<td><strong>At 31 December 2013</strong></td>
<td>861 322</td>
<td>769 687</td>
<td>337 250</td>
<td>550 626</td>
<td>246 880</td>
<td>2 765 767</td>
</tr>
<tr>
<td><strong>Carrying amounts</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>At 31 December 2013</td>
<td>9 821 374</td>
<td>978 122</td>
<td>628 344</td>
<td>779 980</td>
<td>321 893</td>
<td>12 529 708</td>
</tr>
<tr>
<td>At 31 December 2012</td>
<td>9 821 374</td>
<td>1 071 184</td>
<td>599 755</td>
<td>521 909</td>
<td>255 538</td>
<td>12 367 530</td>
</tr>
</tbody>
</table>
### 8. Long-term receivable

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balance at the beginning of the year</td>
<td>59,612</td>
<td>62,233</td>
</tr>
<tr>
<td>Interest (reversed)/earned</td>
<td></td>
<td>(2,621)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>59,612</td>
<td>59,612</td>
</tr>
</tbody>
</table>

These are funds held by the Reserve Bank of Zimbabwe resulting from the export of seed. The Board has not been able to access these funds.

### 9. Biological assets

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tobacco</td>
<td>95,907</td>
<td>858,189</td>
</tr>
<tr>
<td>Horses</td>
<td>2900</td>
<td>4,800</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>961,979</td>
<td>862,989</td>
</tr>
</tbody>
</table>

### 10. Inventories

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tobacco seed</td>
<td>3,521,896</td>
<td>1,352,883</td>
</tr>
<tr>
<td>Other consumables</td>
<td>195,806</td>
<td>132,114</td>
</tr>
<tr>
<td>Chemicals</td>
<td>203,980</td>
<td>95,324</td>
</tr>
<tr>
<td>Provision for obsolete stocks</td>
<td>(668,494)</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>3,253,188</td>
<td>1,580,321</td>
</tr>
</tbody>
</table>

### 11. Trade and other receivables

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amounts owing for services and sales</td>
<td>161,358</td>
<td>92,424</td>
</tr>
<tr>
<td>Seedlings stop order receivables</td>
<td>741,638</td>
<td>1,160,911</td>
</tr>
<tr>
<td>Value added tax refund</td>
<td>574,275</td>
<td>364,756</td>
</tr>
<tr>
<td>Staff loans</td>
<td>20,799</td>
<td>1,796</td>
</tr>
<tr>
<td>Other receivables</td>
<td>228,394</td>
<td>118,590</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1,726,464</td>
<td>1,738,477</td>
</tr>
</tbody>
</table>

Less allowance for credit losses

|                | 466,233 | (665,888) |

**Total**

|                | 1,260,231 | 1,072,589 |

Movement in allowance for credit losses:

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balance at the beginning of the year</td>
<td>665,888</td>
<td>216,303</td>
</tr>
<tr>
<td>Bad debts written off</td>
<td>(14,472)</td>
<td>(19,208)</td>
</tr>
<tr>
<td>Allowance for credit losses</td>
<td>(185,184)</td>
<td>468,793</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>466,232</td>
<td>665,888</td>
</tr>
</tbody>
</table>
11. Accounts receivables (continued)

Amounts owing for services and sales are non-interest bearing and are generally on 30 day terms. As at 31 December 2013, the age analysis of trade receivables is as follows:

<table>
<thead>
<tr>
<th></th>
<th>0 – 30</th>
<th>31 – 60</th>
<th>61 – 90</th>
<th>91 – 120</th>
<th>over 121</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>63 682</td>
<td>2 573</td>
<td>1 520</td>
<td>830</td>
<td>2 715</td>
</tr>
<tr>
<td>2012</td>
<td>92 424</td>
<td>826</td>
<td>895</td>
<td>2 590</td>
<td>4 572</td>
</tr>
</tbody>
</table>

Seedlings stop order receivables accrue interest at a rate of 10% per annum and are paid at the end of the season when the crop is sold at the auction floors. The ageing of the seedlings stop order receivables is as follows:

<table>
<thead>
<tr>
<th>Age</th>
<th>2013</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current year seed sales receivables</td>
<td>507 866</td>
<td>767 694</td>
</tr>
<tr>
<td>Previous year seed sales receivables</td>
<td>660 691</td>
<td>393 218</td>
</tr>
<tr>
<td></td>
<td>1 168 552</td>
<td>1 160 912</td>
</tr>
</tbody>
</table>

12. Investments

Money market investments:
- FBC Building Society: 952 114
- Kingdom Bank Limited: 953 802
- First Banking Corporation Limited: 1 148 888
- Tetrad Securities Limited: 837 995
- Infinity Asset Management (Private) Limited: 274 871
- ZB Stockbrokers Limited: 1 246 047
- Ecobank Limited: 1 079 265
- CABS: 1 742 544
- Interfin Merchant Bank Zimbabwe Limited: 180 274

Current Investments: 7 006 853

Long term investments:
- Interfin Merchant Bank Zimbabwe Limited: 180 274

Long term investments: 180 274

Total Investments: 7 187 127
13. Cash and cash equivalents

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>US$</td>
<td>US$</td>
</tr>
<tr>
<td>Cash at banks</td>
<td>47 385</td>
<td>186 838</td>
</tr>
<tr>
<td>Cash on hand</td>
<td>3 550</td>
<td>3 050</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>50 935</td>
<td>189 888</td>
</tr>
</tbody>
</table>

14. Trade and other payables

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>US$</td>
<td>US$</td>
</tr>
<tr>
<td>Provision for leave pay</td>
<td>484 201</td>
<td>487 093</td>
</tr>
<tr>
<td>Other accruals</td>
<td>445 036</td>
<td>192 337</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>929 237</td>
<td>679 430</td>
</tr>
</tbody>
</table>

15. Short-term loan

<table>
<thead>
<tr>
<th>Loan</th>
<th>2013</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tian Ze Tobacco Company (Private) Limited</td>
<td>274 195</td>
<td>183 007</td>
</tr>
<tr>
<td>Zimbabwe leaf tobacco</td>
<td>35 370</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>309 565</td>
<td></td>
</tr>
</tbody>
</table>

(1.) The Tian Ze loan will be repaid in full from proceeds of sale of the commodity before any payments are made to the grower.

(2.) The ZLT loan is payable.

16. Related party disclosures

16.1 Sales to key management

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>US$</td>
<td>US$</td>
</tr>
<tr>
<td>Sales to key management</td>
<td>2 634</td>
<td>5 094</td>
</tr>
</tbody>
</table>

Sales to related parties are made at the normal selling prices charged by the Board, and the terms and conditions thereon are the same as those for sales to any of the Board's customers.

16.2 Directors' remuneration

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Board fees</td>
<td>Mileage</td>
</tr>
<tr>
<td></td>
<td>US$</td>
<td>US$</td>
</tr>
<tr>
<td>Chairman</td>
<td>7 500</td>
<td>478</td>
</tr>
<tr>
<td>Board members</td>
<td>24 750</td>
<td>3 800</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>32 250</td>
<td>4 278</td>
</tr>
</tbody>
</table>

16.3 Compensation to key management

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>US$</td>
<td>US$</td>
</tr>
<tr>
<td>Salaries</td>
<td>701 093</td>
<td>878 576</td>
</tr>
<tr>
<td>Pension</td>
<td>64 179</td>
<td>81 952</td>
</tr>
<tr>
<td>Other benefits</td>
<td>655 392</td>
<td>468 884</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1 420 664</td>
<td>1 429 412</td>
</tr>
</tbody>
</table>
16. Related party disclosures (continued)

16.4 Loans to key management

<table>
<thead>
<tr>
<th></th>
<th>2013 US$</th>
<th>2012 US$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loans to management</td>
<td>0</td>
<td>-</td>
</tr>
</tbody>
</table>

Loans to key management are granted at an interest rate of 16% per annum. These loans are included in accounts receivables per note 11.

17. Retirement benefit plans

Defined contribution plans

The Board operates a defined contribution plan for qualifying employees in Tobacco Research Board Pension Fund. The assets of the plan are held separately from those of the Board under the control of Trustees. Where employees leave the plan prior to full vesting of the contributions, the contributions payable by the Board are reduced by the amount of forfeited contributions. The Board contributes 10% and employees contribute 5% of pensionable emoluments. The Board operates funded benefit plans for qualifying employees in National Social Security Authority Scheme. Contributions to the scheme are made in terms of the National Social Security Act.

The Board's obligation with respect to the retirement benefit plans is to make the specified contributions.

Amounts charged in the Board’s Income and Expenditure statement are as follows:

<table>
<thead>
<tr>
<th></th>
<th>2013 US$</th>
<th>2012 US$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tobacco Research Board Pension Fund</td>
<td>271 848</td>
<td>297 107</td>
</tr>
<tr>
<td>National Social Security Authority</td>
<td>38 315</td>
<td>15 661</td>
</tr>
<tr>
<td>---------------</td>
<td>----------</td>
<td>----------</td>
</tr>
<tr>
<td></td>
<td>310 163</td>
<td>312 768</td>
</tr>
</tbody>
</table>

18. Risk management

Capital risk management:

The Board manages its capital to ensure that the Board will be able to continue as a going concern while maximising the return to stakeholders through optimisation of debts and equity balance. The capital structure of the Board consists of equity (comprising the capital reserve and the accumulated surplus). The Board is not subject to any externally imposed requirements.

Interest rate risk management

The only financial instruments that are sensitive to interest rate risk are money market investments, bank balances and cash.

Credit risk management:

Credit risk refers to the risk that counterparty will default on its contractual obligations resulting in financial loss to the company. The Board has adopted a policy of only dealing with creditworthy counterparties and subjecting all new customers to credit verification checks. There is no concentration risk within the trade receivable balances.

Fair values: The fair values of all financial instruments are substantially equal to the carrying amounts reflected in the statement of financial position.
18. Risk management (Continued)

Liquidity risk
Ultimate responsibility for liquidity risk management rests with the board of directors, which has established an appropriate liquidity risk management framework for the management of the Board's short, medium and long-term funding and liquidity management requirements. The Board manages liquidity risk by maintaining adequate reserves, banking facilities and reserve borrowing facilities, by continuously monitoring forecast and actual cash flows, and matching the maturity profiles of financial assets and liabilities.

19. Going concern

The Directors have assessed the ability of the Board to continue operating as a going concern and believe that at the preparation of these financial statements, a going concern basis is still appropriate.

20. Commitments for expenditure

<table>
<thead>
<tr>
<th>Description</th>
<th>2013</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commitments for the acquisition of property, plant and equipment</td>
<td>1 181 020</td>
<td>1 169 920</td>
</tr>
</tbody>
</table>

21. Subsequent events

There were no events after the reporting date that affected the year ended 31 December 2012.