

ANNUAL REPORT













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December 2024



ABOUT THIS REPORT

As we look back on 2024, we are proud to share Kutsaga's Annual Report—a reflection of a year defined by resilience, innovation, and steadfast dedication to our mission. Despite navigating a complex macroeconomic landscape and severe drought conditions in the final quarter, we not only met challenges head-on but also achieved remarkable milestones. This report celebrates those successes while reinforcing our commitment to the stakeholders who make our progress possible.

Within these pages, you will find a transparent and insightful review of Kutsaga's performance—from financial results and operational achievements to strategic breakthroughs and future ambitions. More than just numbers and narratives, this report tells the story

of how we adapted, advanced, and delivered value even in demanding circumstances. We've designed it to be both informative and accessible, ensuring every stakeholder can appreciate the impact of our collective efforts.

This is more than an annual update; it's a testament to what can be accomplished with focus, collaboration, and unwavering accountability. We invite you to explore the highlights, insights, and vision that define Kutsaga's journey forward.



REPORTING FRAMEWORK

In preparing this report, we adhered to the following reporting requirements:

- i. The Tobacco Research Act [Chapter 18:21];
- ii. The Public Finance Management Act [Chapter 22:19];
- iii. The Public Entities Corporate Governance Act [Chapter 10:31];
- iv. International Financial Reporting Standards (IFRS); and
- v. International Public Sector Accounting Standards (IPSAS)





ASSURANCE

The financial statements were audited by Baker Tilly Zimbabwe in accordance with International Standards on Auditing (ISAs).

KEY HIGHLIGHTS

Financial Performance

Our financial results demonstrate stable and prudent management Despite macroeconomic pressures, we maintained a robust balance sheet and successfully achieved our financial targets.

during drought conditions that tested our production capabilities.

Innovation and Research:

We made substantial investments in cuttingedge research and development, driving progress in product innovation and process optimisation. Collaborations with industry experts, academic institutions, and strategic partners have enabled us to address emerging challenges effectively.

FEEDBACK ON THE REPORT

Kutsaga values feedback from all stakeholders on how we can enhance our operations and reporting. Should you have any suggestions or inquiries, please contact our Company Secretary, Batanai Chokuda, at bchokuda@ kutsaga.co.zw



B

Aaron Denenga Chairman

Frank Magama

Frank Magama
Chief Executive Officer

Our vision

A centre of agricultural research excellence by 2025

Our mission

To develop and provide elite varieties and innovative agro-based technical services and products to maximize economic value from sustainable agricultural production

Our values

Innovation

Pioneering new ideas and transformative solutions

Integrity

Ownership of our actions and delivering on our promises

Accountability

Our responsibility from idea and process to results

Commitment

Pledge of excellence to our clientele

Teamwork

High Performance through internal synergies

Excellence

Zimbabwe

Our ongoing focus to achieve the highest possible standard of performance and quality

GENERAL INFORMATION

Country of Incorporation Nature of Business and Principal and Domicile **Activities**

Zimbabwe To conduct research

Business Address Auditors Registered Address Bankers

Bank

P. O. Box 1909 Kutsaga Research Standard **Baker Tilly** Harare **Station** Chartered

Airport Ring Road, **AFC Commercial Bank** Harare Tel: 086 8800 2604 **CBZ Bank Limited**

BOARD OF DIRECTORS



Mr A Denenga (Chairman)



Prof. F Mtambanengwe (Vice-Chair)



Mr S Mutepfa



Mrs F Miti



AVM I R Chiganze (rtd)



Dr D Kutywayo



Ms C Garise-Nheta



(CEO)

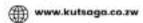




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Tobacco Research Board
Kutsaga Research Station
Airport Ring Road, P. O. Box 1909, Harare, Zimbabwe



Please address off correspondence to the Chief Executive Officer

The Honourable Dr A J Masuka
Minister of Lands, Agriculture, Fisheries, Water and Rural Development
Private Bag 7701
Causeway
HARARE

Dear Sir,

LETTER OF REMITTAL

I have the privilege, on behalf of Kutsaga, to submit for your consideration, the Annual Report covering the research year and the audited financial statements for the year ended 31 December 2024.

Yours sincerely,

Aaron Denenga

BOARD CHAIRPERSON



CHAIRMAN'S REPORT

DEAR STAKEHOLDER,

I am honoured to present the 2024 Annual Report of the Tobacco Research Board (TRB), a year that has truly tested our resolve, sharpened our strategic focus, and emphatically reaffirmed our role as a pivotal player in Zimbabwe's agricultural research and innovation landscape. Despite persistent macroeconomic headwinds—including currency instability, ongoing inflation, and escalating production costs— Kutsaga once again demonstrated remarkable resilience, agility, and unwavering purpose. Against this challenging backdrop, our teams rose magnificently to the challenge, embracing innovation, upholding our core mandate, and delivering measurable progress across our research, governance, and stakeholder service.

Navigating a Complex Environment

Zimbabwe's operating environment in 2024 remained highly volatile. Currency devaluation and inflationary pressures significantly affected both our cost structures and the livelihoods of our dedicated staff. Declining commodity prices, and climatic stressors further compounded the strain on agricultural production nationally. And yet, even within this storm, Kutsaga stood firm. We sustained vital research and extension activities, developed transformative digital tools, launched critical compliance and training programmes, and built capacity across a range of strategic areas—all while strengthening our invaluable partnerships with growers, agro-industrial partners, universities, and global research institutions.



Performance Anchored in Strategy

Our strategic plan, closely aligned with National Development Strategy 1 (NDS1) and Vision 2030, continues to anchor our efforts and guide our progress. From investing in our people and pursuing operational excellence, to delivering cutting-edge science and diversifying our crop portfolio, our ambition is clear: to lead from the front, grounded in unwavering relevance and driven by tangible impact. While our revenue base declined by 16% in historical terms, our commercial revenue streams—now contributing a substantial 74% of total income—continued to underpin our financial independence, effectively cushioning the institution from declining levy receipts. This robust model, combining scientific rigour with commercial acumen, positions Kutsaga to thrive, even in these uncertain times.

Highlights of 2024

Compliance and Governance: We achieved an impressive compliance rate of 87.3% across more than sixty statutes and statutory instruments. This success is particularly noteworthy given the complexity and breadth of regulatory requirements. Our strong performance demonstrates significant advancements in board governance and procurement, as wellas our commitment to maintaining high standards.

To maintain this positive momentum, we have developed a targeted roadmap to address any remaining gaps, with a focus on occupational safety and health (OSH), environmental stewardship, and data governance.

Scientific Innovation: Our pioneering research into alternative crops (notably industrial hemp and potatoes), biocontrol agents, nematicide efficacy, and digital agronomic tools has signaled our exciting evolution from a traditional tobacco research institute to a dynamic, modern Agri-innovation hub.

Human Capital: A successful job evaluation and salary restructuring initiative has significantly boosted both engagement and morale, reflected in a notable 7% increase in employee engagement scores. Our capacity-building efforts also remained robust across our technical and administrative functions.

Digital Transformation: The implementation of applications such as our PoS system, laboratory automation tools, and policy tracking platforms is driving greater transparency, enhanced responsiveness, and improved operational efficiency across the organisation.

A Future Framed by Responsibility

As we move into 2025, we do so with resolute clarity. Our focus on Environmental, Social, and Governance (ESG) principles will deepen and intensify. We will strengthen our stakeholder engagement, expand our vital research into alternative crops, and harness the power of digital transformation to deliver more resilient and responsive services to those who rely on us. We remain unwavering in our pursuit of excellence, ethics, and institutional integrity. Our compliance structures are robust, our governance transparent, and our core values remain clear: service, science, and stewardship.

Gratitude and Acknowledgement

I extend my heartfelt appreciation to our stakeholders for their enduring trust and steadfast support. To my esteemed fellow Board members, thank you for your wise counsel and unwavering dedication. And to the entire Kutsaga team—your passion, professionalism, and perseverance have been the driving force behind everything we have achieved. Together, we are building a lasting legacy, rooted in meaningful impact, shaped by cutting-edge science, and sustained by enduring trust.

Mr Aaron Denenga Chairman



CEO'S STATEMENT FOR THE 2024 ANNUAL REPORT

Dear Stakeholders,

With great pride and appreciation, I present the 2024 Annual Report of the Tobacco Research Board (Kutsaga). This year marked a significant chapter in our journey as we advanced our transformation agenda, navigated economic turbulence, and deepened our impact through science, innovation, and strategic partnerships.

2024 has been a year of reflection and repositioning. Faced with macroeconomic pressures—including inflation, exchange rate volatility, and rising input costs—we remained agile, focused, and resilient. Our response was underpinned by a sharpened strategy, an engaged workforce, and an unwavering commitment to delivering value to the growers and stakeholders we serve.

Anchoring Performance Amid Uncertainty

Amidst significant economic headwinds that tested both our operational agility and the well-being of our people, Kutsaga not only remained steadfast but also surpassed expectations, consistently meeting and, in many cases, exceeding performance targets. I am immensely proud of the unwavering resilience demonstrated across all departments, particularly in Research, Commercial Operations, and Corporate Services. These achievements reflect the exceptional professionalism, adaptability, and determination of our staff.

The results of the employee engagement survey conducted during the review period further underscore this commitment. With an engagement score of 70%, up 63 percentage points from the previous year, the findings speak volumes about the strength of our workplace culture and the dedication of our team. We are not just weathering challenges—we are thriving through them

In recognition of Kutsaga's leadership in the sector, our CEO was honoured with the prestigious 'CEO of the Year – Agribusiness' award for 2024 by the CEO's Roundtable of Africa. This accolade is a powerful endorsement of the visionary leadership steering the institution forward, even in the most demanding of times.



Driving Innovation and Diversification

In 2024, our commitment to diversification and value creation continued to take shape through bold investments in research and development. At the heart of this effort was a renewed focus on resilience, both in our agricultural systems and in the crops we champion.

Throughout the year, our scientists and field teams demonstrated unwavering commitment in advancing the breeding and evaluation of new hybrid tobacco varieties—specifically designed to address the mounting challenges posed by a changing climate. This vital work ensures that our agricultural innovations remain both resilient and responsive to future conditions.

In tandem with these efforts, we broadened our research horizons to include alternative crops such as industrial hemp and potatoes. These initiatives are not only focused on commercial viability but are also strategically aimed at enhancing rural livelihoods and promoting national self-sufficiency—particularly through the import substitution of seed potato. By diversifying our research portfolio, we are laying the groundwork for a more sustainable and inclusive agricultural future

We also deepened our work in sustainable agriculture, conducting extensive trials on biocontrol agents and organic soil inputs that can reduce reliance on synthetic chemicals while enhancing long-term soil health.

Our laboratories and field stations have become more than research sites—they are now vibrant centres of innovation, commercial hubs, and learning. One standout initiative is our growing Seed Potato Programme, supported by a network of 118 dedicated out-growers. This collaborative effort has significantly increased the availability of high-quality seed potatoes across generations 1 to 4, directly contributing to Zimbabwe's broader food security agenda.

Commercial Viability and Financial Stewardship

Despite the volatility of the local currency, our revenue base, anchored by commercial activities—continued to support operational independence. Commercial revenue accounted for approximately 74% of our total income, ensuring that research remains adequately resourced and future-focused. Although revenues declined by 16% in historical terms, prudent financial management allowed us to preserve value and maintain service delivery.

Key projects, such as tobacco seed production and Gromix manufacturing, continued to generate income and expand our reach, while internal restructuring efforts brought clarity and efficiency to our operations.

Digital Transformation and Organisational Growth

The adoption of digital tools—from automated lab systems and point-of-sale platforms to contract management and policy tracking software—has



streamlined our operations, improved internal controls, and enhanced transparency.

Human capital development was another focal point. We completed a job evaluation and salary harmonisation exercise, which contributed to a 7% rise in employee engagement scores. Our people remain our greatest asset, and our future depends on their empowerment and continuous growth.

Looking Ahead

As we look to the horizon in 2025, our direction is both clear and compelling. The coming year will see Kutsaga deepen its transformation, guided by purpose, shaped by innovation, and anchored in the values that have sustained us for over seven decades.

We will place Environmental, Social, and Governance (ESG) principles at the heart of our operations. From enhancing occupational safety to tightening environmental compliance and fostering more meaningful stakeholder engagement, we are embedding responsibility into every layer of our work.

Our journey will also be fuelled by collaboration. Strategic partnerships—both local and international—will be essential to unlocking new frontiers in research, expanding access to global markets, and amplifying the impact of our discoveries.

And as the digital age reshapes agriculture, we are embracing the tools that will define its future. By harnessing data-driven technologies, we will

enhance precision, boost efficiency, and uncover the insights needed to make smarter, faster decisions. Kutsaga is no longer just a research institution. It is a strategic enabler of resilience, a driver of innovation, and a trusted partner in Zimbabwe's agricultural development. Our role is evolving—and we are more than ready to rise to the moment.

75th Anniversary

Looking ahead, 2025 will be a significant milestone for Kutsaga as we celebrate our 75th anniversary. This occasion marks our proud legacy of scientific excellence, innovation, and service to the agricultural sector. Throughout the year, we have planned a series of commemorative events and initiatives to honour this achievement, reflect on our journey, and inspire the next generation of agricultural pioneers. We look forward to celebrating this historic occasion with our stakeholders, partners, and the wider community.

Appreciation

In closing, I extend my heartfelt thanks to the Board of Directors for their strategic guidance, to our staff for their dedication and innovation, and to our stakeholders—growers, partners, regulators, and communities—for their continued trust and collaboration.

Together, we are cultivating a future rooted in science, built on trust, and driven by purpose.

Dr F. Magama Chief Executive Officer Tobacco Research Board (Kutsaga)





1. Introduction

Kutsaga remains steadfast in its commitment to upholding the highest standards of corporate governance, ensuring transparency, accountability, and sustainable value creation for shareholders and stakeholders alike. Our governance framework is built upon two key pillars:

Legislative Compliance – Guided by the Tobacco Research Act [Chapter 18:21] and the Public Entities and Corporate Governance Act [Chapter 10:31].

Internal Policies – Reinforced by our Board Charter and Ethics Code, which embody the principles of ethical leadership, accountability, and sound decision-making.

This report outlines Kutsaga's governance framework, key policies, and practices for the year under review, highlighting milestones and compliance efforts. Through these initiatives, we continue to strengthen governance, mitigate risks, and adapt to an evolving regulatory landscape. The Board, as the highest governing body, provides strategic direction, oversees organisational performance, and ensures adherence to policy. Its composition and functions are governed by:

Section 5 of the Tobacco Research Act;

Section 11 of the Public Entities and Corporate Governance Act; and

The Board Charter (enacted under **Section 27** of the Act), which defines roles, responsibilities, and governance protocols.

Day-to-day operations are led by the **Chief Executive Officer (CEO**), who executes Board directives and maintains operational efficiency.

2. Board Composition and Independence

As of **31 December 2024**, the Board comprised:

- Seven non-executive directors
- One executive director

The **Chairperson**, a non-executive director, ensures independent leadership and clear separation from management. The Board meets **quarterly at minimum**, structured to provide a diverse mix of skills, experience, and perspectives essential for effective governance.

A diversity policy promotes gender balance, varied expertise, and skills representation. Currently, **37.5% of the Board are women**, with succession planning ensuring leadership continuity.

3. Board Committees

To enhance oversight and align with **Part V** of the Public Entities Corporate Governance (General) Regulations, 2018 (S.I. 168 of 2018), the Board restructured its committees as follows:

COMMITTEE	CHAIRPERSON	KEY RESPONSIBILITIES
Finance Committee	Mr Stanley Mutepfa (Independent NED)	Financial oversight, budgeting, and fiscal strategy.
Audit Committee	Ms Chenai Garise-Nheta (Independent NED)	Financial reporting integrity, internal controls, risk management, and external audit oversight.
Risk Management Committee	Mrs Florence Miti (Independent NED)	Enterprise risk identification, mitigation, and monitoring.
Human Resources Management Committee	Air Vice-Marshall (Rtd) Innocent Chiganze	Talent management, succession planning, and HR policy compliance.
Research & Extension and Business Development & Mar- keting Committee	Professor Florence Mtambanengwe	Research strategy, innovation, and market expansion.



4. Board Operations and Governance Support

Throughout 2024, the Legal & Corporate Services Department played a central role in supporting the Board and its committees, ensuring that governance operations were carried out effectively and in line with regulatory requirements. This support encompassed the meticulous coordination of meeting logistics, the monitoring of statutory obligations, and the reinforcement of sound governance procedures across all levels of Board activity In keeping with best practice, board packs were circulated to members at least seven days before each meeting, allowing ample time for review and informed engagement. The department also ensured that meeting minutes were comprehensively and accurately recorded, capturing key deliberations, resolutions, and action points to facilitate transparency, accountability, and institutional continuity.

5. Board Performance Evaluation

In January 2025, Kutsaga's Board conducted a comprehensive self-evaluation, as mandated by Section 37 of the Public Entities and Corporate Governance Act. Using tools developed by the Corporate Governance Unit, directors assessed performance across eight critical governance dimensions, from strategic planning to transparency.

Key Findings:

- Overall score: 3.78/5 indicating strong governance trending toward excellence.
- Strengths: Strategic oversight, effective collaboration with management, and disciplined risk governance.
- Areas for Improvement:
 - Succession planning (delayed by regulatory uncertainties);
 - Board composition (requiring additional engineering expertise);
 - Stakeholder engagement (needing more formal structure); and
 - Technical training for directors.

Action Plan:

- Engaging regulators to clarify succession rules;
- Developing mentorship programmes and a board training curriculum;
- Strengthening stakeholder communication strategies; and
- Introducing annual institutional tours to deepen directors' operational insights.

This evaluation reaffirms our governance foundation

while charting a clear path for continuous improvement.

6. Directors' Interests and Attendance

All directors submitted annual declarations of interest, complying with Part IV of the Public Entities Corporate Governance (General) Regulations, 2018.

7. Ethics and Compliance

As a public entity operating within a tightly regulated sector, Kutsaga places legal and regulatory compliance at the heart of its institutional mandate. In 2024, the organisation achieved a compliance rate of 87.3%, reflecting a significant uplift from previous years. This progress was especially evident in areas such as board operations and procurement governance, where enhanced oversight mechanisms and clearer procedural frameworks have driven tangible improvements.

Despite this positive trajectory, several challenges remain. The organisation has therefore prioritised the following areas for targeted attention in 2025:

Occupational Safety & Health (OSH): A comprehensive action plan is being rolled out to systematically improve workplace safety and ensure alignment with health regulations.

Environmental Compliance: Focus will be placed on tightening hazardous waste management protocols and reinforcing environmental safeguards. Research & Extension (R&E) Regulations: Efforts are underway to ensure full compliance with sector-specific legislative requirements in this area.

Data Governance: Key improvements are planned in the areas of record-keeping, data integrity, and privacy protections to strengthen transparency and accountability.

In parallel, Kutsaga continues to uphold a zero-tolerance policy towards misconduct, ensuring that ethical standards are maintained across all operational levels. This commitment is reinforced through:

- i. The implementation of a revised Code of Conduct:
- ii. Accessible and confidential whistleblowing

mechanisms; and

iii. Ongoing anti-bribery and anti-corruption training for staff at all levels.

These combined efforts demonstrate Kutsaga's ongoing pursuit of excellence in compliance, ethics, and good governance, an essential foundation for the organisation's sustained credibility and impact.

8. Risk Management & Internal Controls
The Board oversees a robust risk management
framework, ensuring operational, financial, cyber,
and ESG risks are identified and mitigated. No
material control failures were reported in 2024.

9. Conclusion & Looking Ahead Looking ahead, Kutsaga has identified three strategic priorities that will shape its governance and operational agenda for 2025:

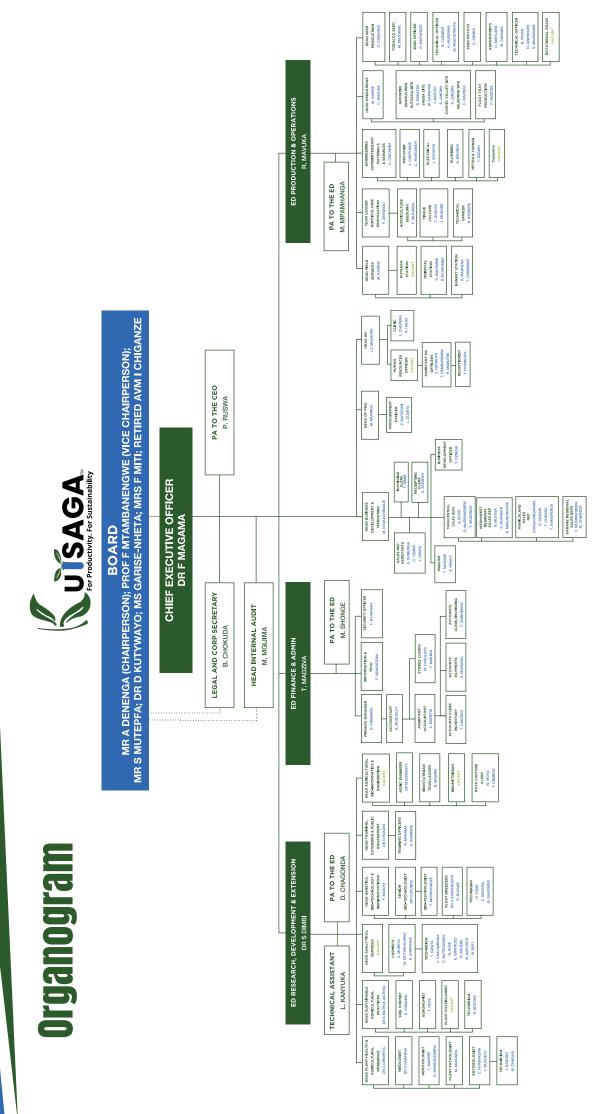
Enhancing ESG Governance: In recognition of the growing importance of environmental, social, and governance (ESG) considerations, the organisation will strengthen its ESG oversight frameworks. This includes integrating sustainability principles into policy development, performance monitoring, and reporting mechanisms to ensure long-term environmental and social stewardship.

Adopting Emerging Best Practices: Kutsaga will continue to benchmark its governance and compliance frameworks against leading regional and international standards. By adopting evolving best practices, the organisation aims to remain agile and responsive in an increasingly complex regulatory landscape.

Deepening Stakeholder Engagement: Recognising that trust is built through dialogue and inclusivity, Kutsaga is committed to fostering more structured and meaningful engagement with its stakeholders. Plans include the development of a formal stakeholder engagement strategy and platforms for regular, two-way communication.

Through these focus areas, Kutsaga reaffirms its commitment to transparency, accountability, and continuous improvement, laying the groundwork for long-term sustainability and stakeholder confidence.







EXECUTIVE STAFF LIST

- 1. Dr. F. Magama Chief Executive Officer BSc Crop Science (UZ), MSc (Leeds), PhD (Dundee) MBA (NUST)
- 2. Dr. S. Dimbi Executive Director: Research and Extension BSc, MSc (Zim), PhD (UK).
- 3. Mrs. T. Madziva Executive Director: Finance and Corporate Services BComm (UNISA), MBA NTU, (UK) ACIS, Dip Bus Comp. Prog
- 4. Mrs R Mavuka Executive Director: Production and Operations MPhill, Bsc, Dip BM

- 5. Ms. P. Ruswa Executive Assistant to the Chief Executive Officer
- 6. B. Chokuda Company Secretary LLB (Zim), LLM(SA)
- 7. Ms. D. Chagonda
 Executive Assistant to the Executive
 Director Research and Extension
- 8. Ms. M. T. Shonge Executive Assistant to the Executive Director - Finance and Corporate Services
- 9. Ms. M. Mpamhanga Executive Assistant to the Executive Director - Business Development and Marketing



1. RESEARCH, DEVELOPMENT & EXTENSION SECTOR



Executive Director's Summary

The 2024 season marked transformative progress across Kutsaga's research divisions, driven by innovation, collaboration, and a commitment to advancing Zimbabwe's agricultural resilience and economic growth under the National Development Strategy 1 (NDS1) and the Tobacco Value Chain Transformation Plan (TVCTP).

Biotechnology i. Genetics, **Bioinnovations** (GBB) spearheaded climate-smart breeding, placing on limited-release four short-season and climate-smart tobacco hybrids (T78-T81). The global expansion of Kutsaga variety testing into Myanmar, Vietnam, and Madagascar underscores our global Breakthroughs **CRISPR** impact. in gene editing for PVY resistance and biopharming (BCG/FMD vaccines) position us at the forefront of agricultural biotechnology. Diversification efforts continued, with industrial hemp trials and screening of Irish potato germplasm.

Dr Susan Dimbi

Executive Director : Research, Development & Extension



TRB Varieties Global Footprint

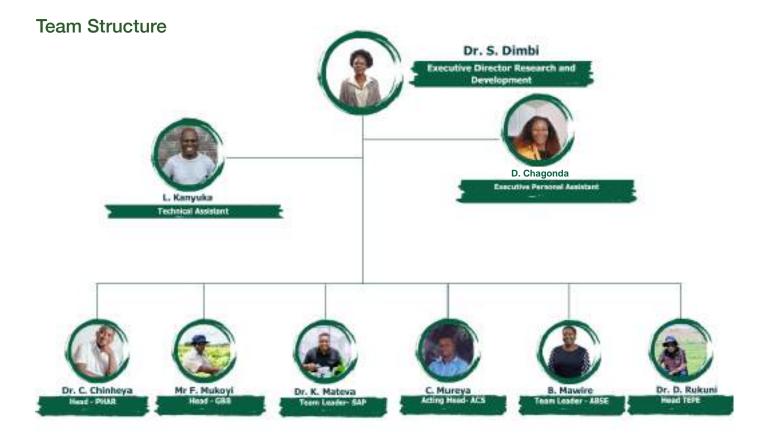


The Kutsaga global variety footprint continues to expand with latest countries to adopt our genetics on experimental basis being Myanmar, Vietnam and Madagascar. This is significant as it increases global market to improved varieties and enables tobacco production for the adopting countries so that they remain competitive in the global market whist maintaining quality exigency of the industry. The global expansion of our genetics also fosters collaboration among researchers hence driving innovation.

- ii. Sustainable Agricultural Practices (SAP) continued with enabling soil health in tobacco culture through the issuance of lime/fertilizer recommendations, empowering growers through precision agronomy. Novel suckercides & herbicides were tested and recommended for registration. Trials were also conducted to optimize production of alternative crops like chia and industrial hemp.
- iii. Plant Health & Agricultural Resilience (PHAR) continued research to manage critical climate-change exacerbated pest and pathogen threats, including the Black Shank/Fusarium complex. PVY surveillance revealed new strains, enabling more research on management options. Integrated Pest Management strategies were sought to reduce reliance on agrochemicals while 44 agrochemicals were approved for registration after thorough screening, underscoring our commitment to sustainable practices.
- **iv. Analytical Chemistry Services (ACS)** maintained ISO 17025 accreditation, a show that the laboratory is world class in its standards. New methods for cannabis pesticide residues and heavy metals analysis were developed, supporting Zimbabwe's emerging hemp industry.
- v. Agricultural Bioinformatics, Statistics and Engineering (ABSE) innovated with new low-cost, energy-efficient curing barns (Shirikadzi, Family) and explored LPG/biogas alternatives, to enable the reduction of deforestation. A 6-hectare model farm established at Kutsaga, demonstrated integrated sustainability, while precision irrigation research was done to optimize water use.
- vi. Training & Extension (TEPE) reached out to and trained 12,160 growers via a combination of digital platforms, field days, and grower interaction forums. Another ~2 000 growers were interacted with during circus meetings. Grower challenges were mitigated through targeted advisories and the timeous release of grower advisory notes. Stakeholder engagement expanded was done local partnerships, international collaborations, and participation at CORESTA and at the World Tobacco Africa conference.



Kutsaga's RD&E we remain committed to cultivating a future where research-driven solutions empower growers, protect the environment, and propel Zimbabwe towards a US\$5 billion tobacco industry. We will leverage partnerships and collaborations to drive innovation and impact, enhance stakeholder engagement and knowledge sharing to promote sustainable practices





1.1. GENETICS, BIOTECHNOLOGY & BIOINNOVATIONS DIVISION (GBB)

Genetics, Biotechnology and Bioinnovations Division (GBB)

Research Thrust

Our research thrust is driven by the National Development Strategy (NDS1) and anchored on the Tobacco Value Chain Transformation Plan which aims at transforming the tobacco value chain into a US\$5 billion industry by 2025 through increasing tobacco production and productivity by increasing yield per unit and increasing the area under tobacco production. The division's principle is anchored on making tobacco production economic through the use of appropriate varieties as a management tool

in their own right or more practically in conjunction with good management practices.

Mission

Leveraging on the power of plant breeding, genomics and biotechnology in developing novel products and multi-disease resistant, high yielding Nicotiana, Irish potato and Cannabis varieties with superior quality to meet grower and merchant requirements in a manner that ensures limited use of chemicals, is environmentally friendly and reduces production costs in the various growing regions of the country and beyond. Our core research focus is anchored on:



1.Breeding of various strains of tobacco: Flue cured/Virginia; Burley; Dark fire; Cigar wrappers; Oriental and Shisha using traditional and modern techniques for a robust and diversified industry.

2.Breeding and research into alternative crops to tobacco:

2.1 Cannabis: Industrial hemp and Medicinal cannabis

2.2 Irish potato

3.Molecular Diagnostics and Marker Assisted Breeding

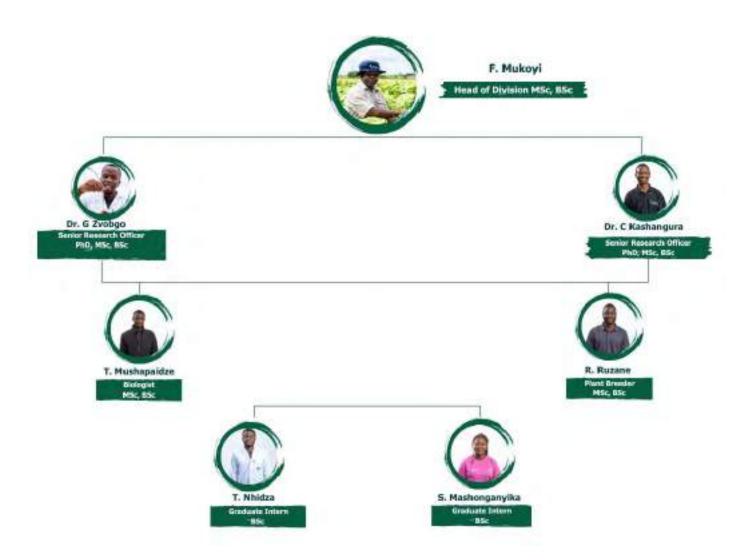
3.1 GMO Screening

3.2 DNA fingerprinting

3.3 Viral Indexing

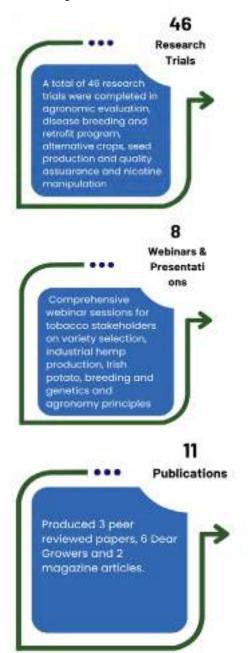
The merger and consolidation of the former Plant Breeding Division with the Molecular Technologies skills group to form the "Genetics, Biotechnology and Bioinnovations Division" has yielded enhanced productivity, interdisciplinary collaboration, and synergistic research efforts. Our research strategy integrates cutting-edge molecular technologies with traditional methodologies, adopting a dual-pronged approach to drive innovation. By combining modern molecular tools with classical breeding approaches, our research embodies a powerful fusion of tradition and innovation.

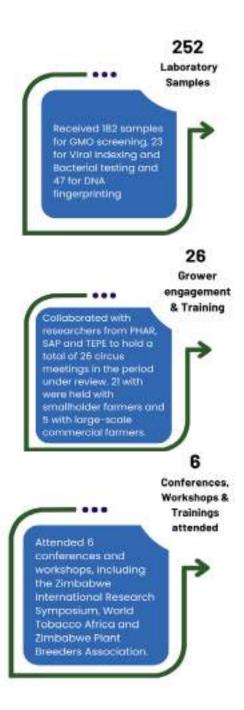
Team Structure





Summary of Outcomes





Summary of research projects conducted

Variety Development

Variety development plays a crucial role in tobacco, hemp and Irish potato production offering improved crop varieties in terms of yield, quality and disease resistance. Moreover, it plays a critical role in climate change mitigation by developing varieties that are more resilient to evolving environmental conditions, such as droughts, heat, and increased water use efficiency. Additionally, as stakeholder preferences continue to shift, variety development must adapt to meet the ever-changing demands of consumers, driving innovation and ensuring the long-term sustainability of these crops.



a. Climate Change Adaptation Way Forward **Focus** Context Progress in 2024 Further variety a) Cooperative Ilmpelled by the frequency of The results based on the second Cultivar Trial of climate change associated season of trials on grower farms testing in the short season shocks to the tobacco were consistent with those from third season of grower as well as the the first season. In both seasons evaluation. tobacco ii. Smoking cultivars (CCT) increased tobacco grower the test genetics demonstrated base expanding to marginal significant ability to achieve assessments areas, a breeding program saleable yields exceeding 4 tons will also be was initiated in the 2013-14 per hectare (P = 0.002, p < 0.05) prioritised under optimal conditions. The season to develop varieties as well as four varieties also performed well adaptable to challenging consolidating climates as well as for across all the test environments leaf chemistry production in marginal areas. with yields ranging from 1647 and agronomic By 2019 four tobacco kg/ha to 4,022kg/ha. Notably, data collected hybrids (T78, T79, T80 and these test genotypes have shown from large T81) emerged as the best remarkable adaptability, enabling scale testing of suited genotypes and were profitable cultivation in marginal the genotypes. placed on limited release areas while also thriving in optimal in 2023 after some ten (10) environments, as evidenced by the impressive saleable yields years of development and evaluation. Placement on achieved at Kutsaga. limited release enables for the collection of valuable Impressive leaf quality was agronomic data from growers obtained from test genotypes which sometimes was better than in various target production that for the control/standard K environments for placing the promising genotypes RK26R. As part of participatory on open release. The four variety selection and as dictated varieties were distributed by the industry-agreed protocol to growers in their marginal on tobacco variety development, environments which include smoking assessments were Matabeleland North, carried out and the new varieties Uzumba, Lower Gweru, all had acceptable smoking Masvingo and Tengwe quality. T81 had the best smoking with Harare serving as a quality. There is wide acceptance benchmark site. Additionally, of the new varieties on limited release. Positive sentiments were 98 growers cultivated these new hybrids on a larger scale received from growers who are during their first season on producing the new varieties (See limited release. Annexure annexure 2). 2 shows variety uptake and growers' sentiments

and feedback on the new

varieties.



Focus	Context	Progress in 2024	Way Forward
b) Evaluation of Exotic Tobacco Cultivars in Zimbabwe	ssessing the performance of Kutsaga's varieties against international benchmarks is crucial for driving growth and innovation. Benchmarking our genetics with global cultivars reveals opportunities for improvement, enabling datadriven decisions and focused enhancements to maintain a competitive edge. Furthermore, leveraging exotic genetics can introduce valuable genetic diversity, addressing critical gaps in disease resistance breeding and propelling the development of more resilient and adaptable varieties. The ongoing global trial is evaluating three Brazilian tobacco varieties (AOV 405, AOV 212, and AOV 815) alongside six Kutsaga varieties (K RK26R, K RK70, K RK71, K RK74, K RK75, and K RK76) for key agronomic traits, including disease resistance and leaf quality. The trial was planted at Kutsaga Research Station and will expand to other areas if the results are promising.	Results of this trial showed that the varieties K RK76 and K RK71 were slow growing and the highest yielders with 3998kg/ha and 3722.9kg/ha respectively. The exotic varieties showed a fast growth habit, short-statured, compact with yields ranging from 2789kg/ha to 3246kg/ha. The cured leaf quality as measured by the grade index of the exotic varieties was comparable with Kutsaga varieties. There were no statistical differences (p<0.05) were observed in grade indices amongst the varieties. However, some plants were observed to succumb to local strains of the potato virus Y (PVY) and root knot nematodes (RKN). In 2025 full agronomic and disease trials being conducted showing that the exotic varieties are succumbing to local strains of root knot nematodes.	i. Assess the performance and resilience of the exotic varieties against local strains of pests and diseases, including Potato Virus Y (PVY), root knot nematodes, and other soil-borne pathogens. ii. Smoking assessments will be expedited.



Focus	Context	Progress in 2024	Way Forward
c) Cooperative Cultivar Trial o f B u r l e y (CCT)	Kutsaga does not only develop tobacco varieties for Zimbabwe but for the region as a whole. These varieties include among others, burley which is produced for filler tobacco and burley varieties are available for regional markets especially Malawi and Tanzania. As is the norm, these varieties have to be high yielding and multi-disease resistant in the environments in which they are produced. BRK6 and BRK7 burley varieties were developed to increase the repertoir of Kutsaga varieties in the region. BRK6 was primarily developed to provide above average resistance to Alternaria, Angular (Race 1) and rootknot nematodes while retaining a slow leaf ripening characteristic. BRK7 was developed with the aim of producing a fast-growing variety suitable for stalk cutting with moderate rootknot nematode resistance. The two varieties have been on limited release for than eight years now and more agronomic	Both B RK6 and B RK7 had good yields comparable to B RK4 and the yields exceeded 3 t/ha, comparable to the check varieties. Though, no significant differences were observed in saleable yield, B RK7 had the highest yield of 3019kg/ha while B RK4 had the least with a yield of 2894kg/ ha. There has been positive feedback from growers who have been producing filler tobacco from B RK6 and B RK7 in the region, particularly in Mozambique. Uptake of the varieties is on a positive trajectory with a total of 3 000ha planted with B RK7 in 2023 and 15 000 ha in 2024 season in Mozambique. Positive sentiments pertaining to their high root knot nematodes, good foliar disease resistance and their slow ripening character have been desired. The two burley varieties are expected to be placed on open release in 2027. The consolidation of results including leaf chemistry and filler characteristics of the two candidate varieties is in progress.	i. Gather leaf chemistry analysis ii. Document in preparation for the open release of B RK6 and 7 is in progress. iii. Promotion and production of the varieties in the region continue. iv. Establishment of tobacco variety demonstration plots in the region

Tobacco alternatives and alternate uses

As Zimbabwe diversifies its agricultural economy, identifying viable alternatives to tobacco is crucial. Industrial hemp, Irish potato, and chia emerge as promising options, offering unique advantages in breeding, agronomy, economics, and sustainability. These crops offer exciting opportunities for sustainable growth, improved farmer livelihoods, and enhanced food security. Nevertheless, their development is constrained by specific challenges associated with adapted varieties, lack of good agronomic practices and seed systems. Potato and industrial hemp production require localized variety development and robust seed multiplication, and industrial hemp faces regulatory, technical, and market development obstacles. By leveraging research, policy, and market-driven approaches, Zimbabwe can overcome these challenges, successfully integrate these crops into its agricultural economy, and reap the benefits of a more diversified and sustainable farming sector.



Focus Context Progress in 2024 **Way Forward** d) Physiological, In the face of an impending The work will The four genotypes responded morphological reduction in tobacco differently to managed drought continue to stress in terms of stomatal and fueled by the WHO-FCTC evaluate and biochemical framework, research is conductance, photosynthetic screen all the being conducted looking at activity and net CO2 assimilation. responses of promising industrial hemp possible alternatives and Distinct and significant (P<0.001) genotypes for (cannabis alternates to tobacco for our patterns were observed in adaptation in Zimbabwe in sativa I.) growers. Industrial hemp genotypic responses. Stomatal genotypes to activity was reduced as addition to: offers a unique combination drought stress of economic, environmental, the severity of the drought Collection of increased while the severe and social benefits, making germplasm drought conditions (SD-0% it an attractive crop for across the FC) had a significant impact on development and economic country to photosynthetic activity irrespective growth and a sustainable continue. option for our growers if of the genotype. ii. Chemotype tobacco is banned. Industrial analysis data Hemp (Cannabis sativa L.) to be collected. research in collaboration with the University of Zimbabwe was conducted to investigate the physiological responses of different genetics to drought. The work is focusing on developing climate smart hemp genetics Figure 1: The figure compares that are tolerant to persistent stomatal conductance (Gsw) drought conditions. Three dynamics of industrial cultivars water regimes Well-Watered under drought stress. (WW-75% field capacity Diurnal curves of leaf [FC]), Moderate Drought stomatal conductance (gsw). (MD-40% FC), and Severe Measurements were taken every Drought (SD-0% FC) were 2-h from 8am to 4pm (Fig 1) on used in the study and the fourth fan-leaf counting from parameters such as diurnal the top, using LI-6800 LICOR. MP (C. indica), AQ (C. sativa) and ZB stomatal conductance, light response of net assimilation (C. sativa). Times are shown in 12 rate under drought stress h format. Well-watered (WW-75% and intrinsic water use FC), moderate drought (MD-40% FC), and severe drought (SDefficiency under drought 0% FC). The letters on the plots stress were measured. The trial was conducted at highlight statistical differences. Kutsaga Values are presented as mean ± se (n = 5).



Context Progress in 2024 **Way Forward Focus** e) Irish potato The program will Irish potato was declared The results showed a lot of research a strategic crop for food variations from sprout sizes, leaf combine advanced security in Zimbabwe in green intensity and number of molecular 2021. In order to complement flowers per plant (Fig 3) which characterization as national efforts in import are important traits in a breeding well as: substitution for seed potato, Rigorous field program. and ensure Zimbabwe's testina. ii. progress toward self-Farmer sufficiency in seed potato participatory supply fundamental research breeding to is being conducted to source develop potato varieties that germplasm, evaluate and release improved potato meet local varieties to growers. Kutsaga preferences, Research sourced thirty Irish with inherent potato lines from the Centre multi disease for Irish Potato Research resistance and (CIP) in Peru. This effort is high yields. designed to introduce novel Figure 2. Phylogenetic tree iii. Additionally, genetic material and improve showing the genetic diversity of long-term the availability of high-quality Kutsaga germplasm potato lines collaborations. seed potatoes within the and varieties. will be country. This work aligns established to with NDS1's goals of poverty A phylogenetic tree based on strengthen the reduction, food security and 32 SSR markers identified three research efforts major clusters which are cluster 1 agricultural transformation. in potato highlighting the importance (CIP lines, Makey, Garnet), breeding. of innovation and cluster 2 (CIP lines only), and collaboration in achieving cluster 3 (Diamond, Hermes, BP1, Jasper, and CIP lines 23, 21, 25, national development objectives. 27, 24) (Fig 2). CIP lines 23, 21, 25, 27, and 24 are recommended for breeding programs due to their potential for fewer backcross cycles to achieve desired traits.

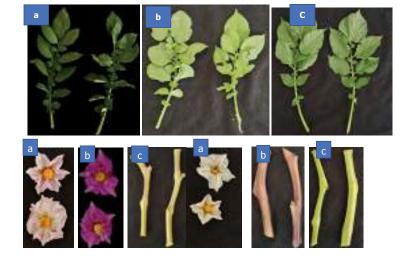


Figure 3: Preliminary morphological characterizations of the lines EIP03/24, EIP09/24, and the control variety Diamond revealed notable variations in plant architecture, leaf morphology, Specifically, EIP03/24(a) exhibited a more upright growth habit darker leaf green intensity and medium anthocyanin coloration compared to Diamond (c), while EIP09/24(b) displayed distinct leaf shape and more intensified anthocyanins in flowers.



Seed Production and Quality Assurance

The Division is responsible for ensuring that seed that goes on the market has been proved. The production of parental material (breeder's seed), which serves as the foundation for commercial seed production is done under strict regulations. During seed production, protocols are followed in accordance with the Organization for Economic Cooperation and Development (OECD) standards to guarantee satisfactory quality and desired levels of genetic and physical purity. Furthermore, parental and hybrid proving is conducted to uphold seed quality and integrity.

Focus	Context	Progress in 2024	Way Forward
f. Tobacco Seed Pre and Post Control Plots	In order to ensure seed quality and upheld seed integrity all forms of seed (parental lines and hybrids) are assessed, inspected and certified the certifying authority. The pre-control plots serve as a baseline assessment of the parental lines against the UPOV descriptors, which are international guidelines for plant variety protection. The experiments ensure that the seed production of the protected varieties meet the required standards and maintained the true characteristics of the parent lines.	The Seed Services Institute, under the Ministry of Lands, Agriculture, Fisheries, Water and Rural Development, successfully certified all hybrids produced by the Kutsaga Seed Association, following rigorous assessments. Hybrid seed produced by Kutsaga passed the true-to-type test. Results from pre- and post-control plot evaluations in 2024 highlighted the performance and stability of the BRK4 and KRK26R tobacco varieties. Inspectors from Seed services and the OECD international inspectors assessed the pre and post control plots to conduct evaluations on the parental lines and hybrids (Fig 4). These evaluations, conducted each season, are critical for ensuring seed quality assurance and building farmer confidence in the varieties produced by Kutsaga. These efforts reinforce the organization's commitment to maintaining excellence in seed production and quality assurance.	The pre- and post-control plot evaluations will continue for all the hybrid seed to uphold Kutsaga's reputation for delivering high-quality seed. Training to strengthen capacity is ongoing.

Government and OECD inspectors

Pre and post control plots inspections by the Seed services and OECD inspectors at flowering stage were all hybrids and their parental lines were certified to have passed the OECD international standards.

Figure 4: Ongoing pre and post control inspections with Seed Services as well as OECD inspectors







Molecular Technology and Biotechnology Research

Focus	Context	Progress in 2024	Way Forward
g) CRISPR- gene editing research	In line with Kutsaga's expanded mandate of researching on the 4th industrial technologies in agricultural production, research into the use of CRISPR-Cas9 based gene editing was conducted. The research aimed at addressing the challenges faced by GMO's in breeding for new varieties. As opposed to GMO's, CRISPR-Cas9 based gene editing does not invlove movement of genes from one organism to another but utilises the inherent geneome. The work commenced by identifying candidate genes which when mutated would effect the disired response. After identification of the candidate genes, cloning of the genes and designing of the guide RNA followed and transfromation into the expression plasmid proceeded.	The following gRNA were designed for the following genes in tobacco: 1. Drought tolerance – ntDREB1 2. PVY tolerance – EiF4f 3. Low sucker production – ntLS1 In the PVY work, the PCas9-TPC-gRNA component was transformed into tobacco using the leaf disc transformation method. Thereafter the leaf discs were grown in tissue culture until mature plants developed prior to analysis that included morpho-pathogenicity tests. The studies showed that the edited plants exhibited stunted growth but had increased tolerance to PVY in contrast to the wild-type. Furthermore, sequencing results indicated a single base deletion in the eIF4 edited gene of the ONC transformed plants. In the drought and low production, the designed gRNA was cloned into the pCas9 for expression. The work is underway with PCR based confirmation being done before the gene construct is transformed into tobacco for expression.	Future work for PVY involves pathogenicity tests for the T1, T2 and T3 generations and also testing the presence of Cas9 in all these generations. Future work for drought and low sucker producing tobacco varieties involves stable and transient expression of the produced gene construct into tobacco. Physiological and Molecular studies will also be done in order to confirm the expression of the gene.



Focus	Context	Progress in 2024	Way Forward
h) Biopharming Research	In line with the expanded mandate for Kutsaga, biopharming work was incepted with a goal to produce human insulin, a Bacillus Calmete-Guerin (BCG)- and FMD vaccine candidate. in a bid to improve availability and access of these life-saving vaccines using Nicotiana tabacum. This work began with the designing and synthesis of the expression constructs and culminated in the production of the recombinant proteins in the tobacco plants.	Current strides in production of recombinant proteins in tobacco resulted in the expression of the Mycobacterium tuberculoisis' Antigen85A protein of the fibronectin binding protein complex in N. tabacum. This served as a vaccine candidate in place of the traditional BCG for preventation of tuberculosis. The work also produced the footand-mouth (FMD) disease virus major capsid protein (VP2) as a recombinant protein in N. tabacum as well as the proinsulin protein for the management of diabetes in insulin-dependant diabetics.	Future work involves stable expression of the recombinant proteins followed by rigorous verification and validation protein assays and preclinical studies required for clinical tests and product registration.
Stakeholder	Engagements and Colla	borations	
a) Growers	Tobacco growers are an important stakeholder in tobacco variety development, providing critical insights and practical knowledge to inform breeding programs. Their involvement ensures new varieties meet their needs, address local challenges, and improve productivity, quality, and profitability. By participating in variety development, growers can influence the creation of varieties that are resilient, disease-resistant, and adapted to local conditions, ultimately enhancing their livelihoods and the sustainability of the tobacco industry.	Throughout the reporting period, the Division engaged with growers through various outreach and extension activities, various platforms, including in-person visits, online interactions, voice calls, and social media, to gather valuable insights and discuss key topics. Random farm visits were conducted to assess varietal performance across different growing regions. Additionally, we held 26 stakeholder meetings, including 21 with smallholder growers and 5 with large-scale commercial growers, in all tobacco-growing provinces. The team interacted with some 1 042 growers during these meetings. These interactions provided crucial feedback on new varieties, which are being grown on a larger scale to gather data for open release registration, with growers reporting encouraging results.	i. Continue with grower engagements in participatory variety selection. ii. Establishment of variety demonstartion plots in the various growing regions for grower appreciation on our varities. iii. Intensify extension services: Increase the frequency and reach of grower interaction meetings, especially in areas where there is proliferation of illegal varieties.



Focus	Context	Progress in 2024	Way Forward
b.International Research Organisations (Alliance One international (Brazil, Trasformatori Tabacco Italia Soc. Coop. Agricola (Italy, Von Eicken Germany	The division collaborated with a number of international research organisations during the period under review. Through international partnerships, we test foreign genetics in Zimbabwe's conditions, while our genetics are also tested in foreign backyards in countries like Italy. Kutsaga varieties have a strong global and regional footprint, with commercialization underway in some countries and ongoing evaluations in others. In these endeavours, we collaborate with other international research institutions. International collaborations enable us to assess foreign genetics in Zimbabwe, fostering research partnerships and facilitating germplasm exchange to advance innovation.	Global variety trials to showcase the superiority of Kutsaga genetics continued in a number of countries. Transformatori Tabacco Italia Soc. Coop. Agricola (Italy) accessed seed for the purpose of evaluating Kutsaga varieties in their production zones and they have provided growing reports on the performance of a number of Kutsaga bred varieties. For all the evaluated parameters (total yield, Quality and smoke quality), Kutsaga genetics performed quite well. One noteworthy aspect of Kutsaga Varieties is their ability to achieve comparable yields to other varieties, even when nitrogen units are reduced. Three flue cured tobacco varieties from Alliance One Brazil were also evaluated in Zimbabwe. The partnerships and collaborations assist in benchmarking the progress of local breeding efforts relative to achievements by breeders from other countries.	1. Collaborative trials will continue into the second season of evaluation. 2. Full is in its second season and it will progress to the third season thereafter. Four more varieties with fast growing and fast reaping profiles have been send to Italy for evaluations.



Focus	Context	Progress in 2024	Way Forward
c)Universities and Colleges	Through strategic partnerships with academic institutions, Kutsaga fosters collaboration, innovation, and skills development. Students benefit from work-related learning, practical experience, and mentorship from experienced professionals, while we support research projects and dissertation supervision. This mutually beneficial partnership brings value to both parties. Universities and colleges gain by providing students with practical experience, boosting employability, and encouraging entrepreneurship. Meanwhile, Kutsaga benefits from fresh perspectives, innovative ideas, and access to top talent, driving industry innovation.	Two collaborative research projects at PhD level are ongoing with the Marondera University of Science of Technology (MUAST) and the Midlands State University (MSU) on Irish Potato and Industrial hemp respectively. The two projects are: "The Impacts of Potato Virus Y (PVY) on Irish Potato Varieties in Zimbabwe" with the aims to screen International Center for Potato (CIP) Irish potato lines for resistance and susceptibility to PVY, and Industrial hemp the trial is focusing on the evaluation of hemp accessions collected around Zimbabwe The study is aimed at evaluating 60 Hemp lines for their suitability to be cultivated in Zimbabwe. The trial has been setup both at Midlands State University (MSU) campus and at Kutsaga. Individual plant selections of genotypes with ideal phenotypes adapted for fiber or seed production will be tagged. Additionally, a total of four undergraduate students received valuable work-related research training with two of the students graduating with distinctions in the research dissertations. Furthermore, one MSc student successfully completed their program, culminating in a research publications, published in a peer reviewed; the Frontiers journal. Our students consistently excel after completing their attachments, unlocking promising opportunities. As evidence, one of our former MSc students, now pursuing a PhD at an Australian university, shares their positive experience in the annexure 1.	



Focus	Context	Progress in 2024	Way Forward
d)Tobacco Trade	As part of the participatory variety development process, smoking assessments were carried out for limited release varieties. The input of the end user of tobacco who is the smoker in ideal characteristics for the end-use (cigarettes). The smoking tests done by members of the Tobacco Trade, presents valuable information required to register the four varieties. that process tobacco to determine suitability or fit for end-use status of the genetics in the Cooperative Cultivar Trial.	The results from the preliminary smoking assessments show that the four varieties currently on limited release have acceptable smoking quality and compared well with the standard variety (K RK26R). Overally, K RK26R out-performed all the varieties followed by T81 and T78. The hierarchy of performance was K RK26R > T81 > T78 > K RK23> T80 > KE1 > T79. A state of the art greenhouse (Annexure 3) was donated by the tobacco trade to ensure seed breeding work is done optimally. The greenhouse will enable advanced research in tobacco breeding, genetics, phenotyping, pest & disease, early generation screening, and drought research.	i. Smoking assessments will continue to collate more data for registration of the varieties.

1: Mentorship and Students Training

A total of five students were mentored in 2024 comprising 1 MSc student and four undergraduate students.



Mr. Ein Mahenga during a data collection escapade in Uzumba CCT site.

Ein had this to say.....

The experience I gained at Kutsaga Research Station, particularly the insights from my supervisors Mr Mukoyi and Dr Mateva were instrumental in securing an opportunity to further pursue my research journey in

Australia. The opportunity is going to allow me to implement cutting-edge genomic approaches and advanced chromatography techniques to develop elite cannabis varieties for medicinal use. Kutsaga research's support and expertise played a critical role in shaping my research and academic career".

2: Grower Sentiments on New Tobacco Varieties

Four new flue-cured tobacco varieties (T78 – T80), now in their second year of limited release, are gaining traction and popularity among growers, particularly those in marginal areas like Gokwe South, Mt Darwin, Masvingo, and Matabeleland North. The 2024 season saw a notable 31% increase in planted hectares (Fig 7b), with growers



expressing satisfaction and praising the varieties' fast ripening nature, yields, and acceptable cured leaf quality. As growers share their success stories, these varieties are poised to transform the local tobacco industry. Several testimonials endorsing these game-changing varieties have been received from growers and below is an incept from one of the growers producing T80 in Mashonaland Central Province.

"I was skeptical at first, but the new variety (T80) has adapted remarkably well to my farm's conditions (Fig 5a), and I'm seeing great results." – Bodele Farm (Mt Darwin, Mashonaland Central Zimbabwe)



Figure 5a: T80 crop in Mt. Darwin at Bodele Farm

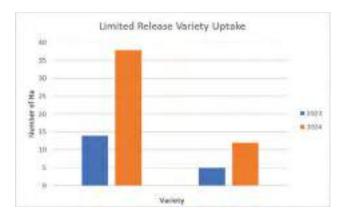


Fig 5b: Limited Release variety adoption 2024

3: State of the art Greenhouse

The division received a new research facility (greenhouse) from the tobacco trade through the Tobacco Leaf Exporters of Zimbabwe (TLEAZ). The greenhouse facility will enable advanced research in tobacco breeding, genetics, phenotyping, pest & disease, early generation screening, and drought research.

This initiative will support NDS1 and ultimately vision 2030 and will ensure tobacco varieties are developed for all environments including the

previously marginal areas hence "leaving no one and no place behind". Furthermore, the Tobacco Value Chain Transformation (TVCTS) plan intends to grow the tobacco crop to a \$5 billion economy by 2025. This will be undoubtably be achieved by the development of robust varieties that will maximize productivity per unit area across diverse environments.



A new state of the art greenhouse was received to strengthen our capacity in variety development and seed screening work.



A project focused on the evaluation of plant growth promoting rhi.zobacteria for their ability to induce drought tolerance on tobacco in the new greenhouse

Recognition

A compendium titled 'Defying the Odds: A Biography of Enoch Tichaona Mudzengerere and His Contributions to the Zimbabwe's Tobacco Industry through Revolutionizing Tobacco Breeding" for one of the illustrious tobacco breeders was prepared and conferred at the Enock Mudzengere symposium, February 2024 at Chinhoyi University of Technology.





Mr. Enock Mudzengerere, former tobacco breeder being presented with a life time award and conferment with an honorary member of the Zimbabwe Plant Breeders Association by the TRB CEO Dr Frank Magama







About Sustainable Agricultural Practices (SAP)

Overview: The Sustainable Agricultural Practices (SAP) Research Group, formerly known as the Crop Production and Molecular Technologies (CPMT) Division, is committed to advancing sustainable cultivation techniques and promoting best management practices in crop production. By integrating expertise in Soil Chemistry, Agronomy, and Plant Physiology, the division adopts a multidisciplinary approach to address critical agricultural challenges and improve long-term farming sustainability.

Soil Chemistry and Sustainable Soil Management

Within the Soil Chemistry specialization, the SAP Research Group focuses on sustainable soil and plant health management by developing and disseminating efficient, effective, and environmentally sustainable lime and fertilizer recommendations for stakeholders in the agriculture and horticulture sectors. The division's key objectives include:

- Mitigating the agronomic and ecological impacts of continuous tobacco cultivation
- Restoring declining soil fertility and stability;
 Alleviating soil compaction
- Managing the rising prevalence of soil-borne diseases
- Preventing and controlling the resurgence of the parasitic weed Striga gesnerioides, a major threat to crop productivity

Exploring Alternatives to Tobacco

As part of its commitment to diversifying Zimbabwe's agricultural landscape, the division actively explores alternative high-value crops to reduce dependency on tobacco. Key focus areas include:

- Chia (Salvia hispanica L.) A nutrient-rich oilseed crop with growing global demand.
- Potato (Solanum tuberosum L.) A staple food crop with high economic potential.
- Industrial Hemp (Cannabis sativa L.) A versatile crop with applications in fiber, biofuels, and pharmaceuticals.



Commitment to Research and Sustainability

Through cutting-edge research and evidence-based strategies, the SAP Research Group strives to:

- · Enhance soil health and fertility
- · Optimize nutrient management practices
- Develop sustainable agronomic systems that ensure long-term productivity

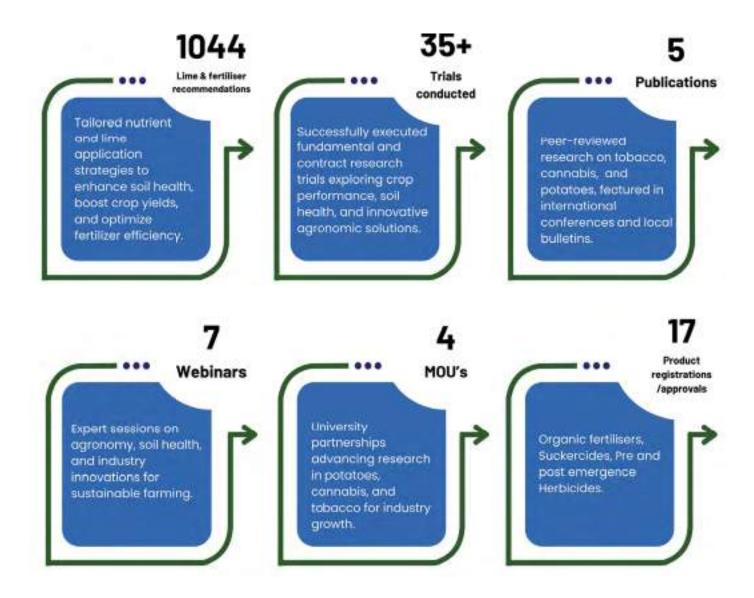
By fostering innovative, science-driven solutions, the division aims to support the transition to a more resilient, diversified, and ecologically sustainable agricultural sector in Zimbabwe.

Team Structure





Summary of Outcomes



Advancing Sustainable Tobacco Production through Integrated Agronomic Innovations

To enhance the sustainability and resilience of tobacco farming in Zimbabwe, research in 2024 focused on lime and fertilizer optimization, organic inputs, suckercide efficacy, weed control, and drought tolerance. Key outcomes include surpassing lime recommendation targets, identifying effective bio-stimulants and organic fertilizers, registering new herbicide and suckercide formulations, and confirming drought-tolerant hybrids. These initiatives, grounded in precision agronomy and climate-smart practices, aim to boost productivity, reduce environmental impact, and promote informed input use.



Context Progress in 2024 **Way Forward** Focus Lime & Fertilizer Tobacco farming A total of 1,044 lime and Development Recommendation in Zimbabwe faces fertilizer recommendations of an electronic significant challenges were completed, surpassing system to improve due to soil acidity and the 1,000-set target and the efficiency of nutrient imbalances, achieving 104.4% of the lime and fertilizer which undermine crop goal. This represents a recommendations productivity. Soils with 68.8% increase from last for tobacco and pH levels below 5.0 often year, highlighting growing other horticultural exhibit deficiencies in awareness and adoption of crops. essential nutrients such soil testing among farmers. Expanding farmer The surge in demand was education on the as nitrogen, phosphorus, and potassium, directly driven by targeted training 4Rs will reinforce affecting crop yields and sessions (such as circus best practices and quality. Additionally, poor meetings), strategic social drive long-term organic carbon content media outreach, and adoption. and low aggregate stability dear grower articles that threaten soil structure, emphasized the benefits of further complicating soil testing and precision farming practices. nutrient management. As Effective soil management, a result, more farmers are which begins with soil recognizing the advantages of sampling to assess tailored fertilizer applications, nutrient levels, is essential leading to improved soil to optimize fertilizer health, optimized yields, applications. Adopting the reduced input costs, and 4Rs of Nutrient Stewardship enhanced sustainability in (right source, right rate, both tobacco and horticulture right time, and right place) production. can help ensure sustainable agricultural practices and improve soil health.



SAP technical officer collecting soil samples in a tobacco field using a soil probe and rubber mallet. The samples are stored in labeled containers for lab analysis to assess soil nutrients, pH, and moisture, aiding in precision agriculture and sustainable tobacco production.



Nicotiana tabacum Cluster Research			
Focus	Context	Progress in 2024	Way Forward
Enhancing Tobacco Resilience Through Organic Fertilizers, Bio- Stimulants, and Seedling Quality Optimization	Tobacco production is highly dependent on nutrient-rich soils, which makes it particularly vulnerable to soil degradation and environmental stress. Traditional fertilizers, while effective in boosting growth, often result in nitrogen leaching and inefficient nutrient uptake, further exacerbating soil health issues. To address these challenges, this research explored the potential of organicenriched fertilizers, biostimulants, and seedling quality optimization as sustainable alternatives. These approaches aim to improve soil structure, enhance microbial activity, and optimize nutrient efficiency, ultimately boosting tobacco yield, quality, and resilience while reducing dependency on costly inputs.	During the season, ten organic fertilizers and bio-stimulants were evaluated for their effects on tobacco yield and quality. Organic-enriched fertilizers significantly enhanced performance, with the highest saleable yield—28% above the standard—achieved using 100% organic basal fertilizer plus an organic nutrient enhancer. A 75% basal fertilizer treatment with the enhancer also improved the total grade index by 16%. Bio-stimulant trials were promising; a root-applied product followed by foliar spraying and drenching increased saleable yield by 40% and root biomass by 29%, without compromising leaf quality. Other bio-stimulants enhanced early biomass accumulation, plant height, and leaf expansion at 19 weeks after planting. The highest saleable yield was recorded using conventional fertilizer combined with a bio-stimulant mix. One bio-stimulant maintained yields at reduced rates, suggesting economic benefits. Three organic fertilizers were effective and recommended for further evaluation. In seedbeds, a seaweed-based organic fertilizer applied at 2 and 4 weeks after sowing improved seedling height and stem thickness, enhancing transplant vigor.	 These trials will be continued until all products have been evaluated for at least three seasons. Research will also be conducted with new organic formulations



Focus Context Progress in 2024 **Way Forward** Evaluating Continue with Sucker growth is a Sucker growth is a significant suckercides for significant concern in concern in tobacco the evaluation of use in tobacco tobacco production, as production, as uncontrolled new suckercide production uncontrolled suckering suckering can drastically formulations can drastically reduce reduce both the yield and Train growers on both the yield and quality quality of the crop. In addition, the selection and of the crop. In addition, excessive sucker growth leads proper application of suckercides. excessive sucker growth to increased labor costs, leads to increased labor making effective management costs, making effective a key aspect of optimizing production. management a key aspect of optimizing production. To address this, it is crucial To address this, it is crucial to continuously evaluate the effectiveness of suckercides, to continuously evaluate the effectiveness of ensuring that sucker control suckercides, ensuring that practices not only improve sucker control practices not productivity but also minimize only improve productivity environmental and health but also minimize risks. environmental and health risks.





Focus	Context	Progress in 2024	Way Forward
Weed Management in tobacco production	Weeds are a major challenge in tobacco production, as they compete with tobacco plants for vital resources such as water, nutrients, and light. This competition can significantly hinder plant growth, reduce leaf quality, and increase overall production costs. As such, effective weed management is essential for maintaining sustainable and profitable tobacco farming practices. Traditional methods, such as hand-weeding and hoeing, can be labor-intensive and time-consuming, which is why the use of herbicides has emerged as a more efficient solution for effective weed control.	A total of nine herbicides were evaluated. These included five pre-emergent and four postemergent herbicides. Following these trials, a pre-emergence herbicide specifically for broadleaf weed control was recommended for registration. Similarly, five pre-emergent herbicides proved effective and were recommended for registration for the management of sedges, grasses, and broadleaf weeds These include: • Two products containing Sulfentrazone • Two products containing S-Metolachlor • One product containing Clomazone Another four post-emergence herbicide products proved effective for managing broadleaf weeds and sedges. These contain Halosulfuron, Clomazone, Fluazifop-p-butyl, and Clethodim. To date an average of 44 herbicides have been registered for use on tobacco. This confirms that tobacco growers are spoilt for choice.	 Continue testing new herbicide formulations to widen available options. Train small scale growers to incorporate herbicide use in their cropping programmes.



SAP field assistant is assessing weed presence in a tobacco experimental plot, carefully examining different weed species uprooted from the field. Weeds compete with tobacco for nutrients, water, and sunlight, impacting crop growth and yield. This evaluation is crucial for integrated weed management (IWM), helping to determine the best control strategies to maintain optimal field conditions for tobacco growth. The assessment contributes to data collection and research-driven decision-making in sustainable tobacco agronomy.



Focus	Context	Progress in 2024	Way Forward
Investigating Drought Tolerance for Climate- Smart Tobacco Production	Zimbabwe has faced erratic rainfall and prolonged droughts in recent seasons, affecting tobacco yields. Understanding physiological and biochemical drought response mechanisms is crucial for breeding climateresilient varieties. The objective of this work was to evaluate	The results showed that the test line ETH12/17 exhibited superior drought resilience, maintaining higher antioxidant enzyme activity (SOD, APX, POD) for ROS detoxification. It also showed a 142% increase in total soluble protein content under stress, along with greater proline accumulation, which improved osmotic adjustment and stress	Conduct controlled trials to assess drought tolerance in promising tobacco lines before advancing them for further breeding

performance, antioxidant	efficiency under drought	
responses, and osmotic	conditions.	
adjustment under	While ETH12/17 excelled,	
contrasting moisture	other varieties showed	
regimes. Four climate-smart		
tobacco hybrids (ETH11/17,	suffered severe declines	
ETH10/17, ETH07/17,	in root biomass (42%	
ETH12/17) were evaluated	reduction) and photosynthetic	
alongside two control	efficiency, marking it as	
varieties (KRK26R, KE1)	drought-sensitive. ETH10/17	
(Fig. 1).	and KRK26R exhibited	
(.9/-	intermediate resilience, with	
	moderate antioxidant activity	
	but significant yield penalties	
	under stress.	
	These differential responses	
	highlight the need for	
	physiological and biochemical	
	assessments in tobacco line	
	and hybrid development.	





Stakeholder	Focus	Progress in 2024	Way Forward
Growers	Strengthen collaboration through on-farm visits to evaluate field practices and align research with real-world application.	 Conducted extensive field visits across key tobaccogrowing regions including Kwekwe, Kadoma, Macheke, Guruve, Chinhoyi, Lomagundi, Chitomborwizi, and Trelawney. Provided real-time support and feedback to growers. Co-hosted the Hemp and Cannabis Field Day in Bulawayo with the Agricultural Marketing Authority (AMA), creating a platform for farmers, researchers, regulators, and industry stakeholders to exchange insights on production techniques, regulatory compliance, and market opportunities for industrial hemp and medical cannabis. 	 Sustain regular onfarm engagements for technical support and relationship-building. Enhance feedback mechanisms to refine research priorities. Expand field day formats across multiple provinces to promote knowledge dissemination on emerging crops such as hemp and cannabis.
Agrochemical Companies	Coordination of product-specific tobacco research trials under the PASS initiative; ensure alignment of industry innovations with trial protocols.	 Engaged 15 agrochemical firms to review trials of biostimulants, organic fertilizers, suckericides, herbicides, and liquid lime. Strengthened collaboration on trial evaluation. 	 Advance field trials for new formulations. Schedule follow-up technical workshops to review results and improve product deployment strategies.





Partnered with TUT, South Africa Academic Strengthen research Scale up training Institutions and capacity-building for a regional hemp and cannabis initiatives targeting through collaborative cultivation training; led by Prof. regulatory bodies, David Katerere (TUT) and Dr. programs in hemp, growers, and industry cannabis, and food Kumbirai Mateva (Kutsaga). stakeholders. Kutsaga delivered an online crops. Disseminate Dean's research seminar for TUT research findings to on lessons learnt from tobacco policymakers and for the cannabis industry. investors. Collaborated with MSU on a Launch training and study of indigenous cannabis breeding programs accessions; fieldwork underway for indigenous in Kwekwe and Harare by a DPhil cannabis lines. candidate. Continue evaluating Evaluation of 22 potato varieties potato germplasm for from the International Potato drought tolerance and Center (CIP) with MUAST at yield performance; Banket Research Station. expand breeding pipeline. International Strengthen scientific Initiated a joint research Complete multi-Research collaboration programme with CIRAD to season field Institutions to enhance the assess the environmental impact and laboratory of biofertiliser use in tobacco assessments for both environmental sustainability and cultivation. Field trials were CIRAD and CORESTA established to quantify GHG quality of tobacco collaborative research production through emissions, soil nutrient cycling, activities. international research and soil biophysical properties Generate and partnerships. Key under various fertilisation disseminate focus areas include regimes. evidence-based (i) evaluating the role Participated in the CORESTA recommendations of biofertilisers in Collaborative Trial 25SC04B, on the use of reducing greenhouse designed to determine whether biofertilisers to gas (GHG) emissions potassium chloride (KCI) reduces support climateand improving TSNA levels in air-cured tobacco smart, low-emission soil health, and and to assess potential negative tobacco farming effects of elevated chloride (ii) assessing the systems. impact of potassium content on cured leaf quality. Validate the role chloride fertilisation Preliminary trials showed variable of KCI in TSNA on tobacco-specific moisture content responses reduction and nitrosamines (TSNAs) between KCl and sulphate of establish agronomic and cured leaf quality potash (SOP) treatments, with thresholds for through multi-country yield and quality assessments chloride application trials led by the ongoing. that maintain cured Cooperation Centre leaf quality. for Scientific Research Publish results Relative to Tobacco in peer-reviewed (CORESTA). journals, inform national fertiliser policy, and contribute

to harm reduction and sustainability strategies in global tobacco production.



Research officers assessing tobacco drought experiments in a climate-controlled greenhouse, using precision tools like IRGA (Infrared Gas Analyzer) to measure plant responses to water stress. The trials help evaluate physiological traits and drought resilience, aiding in the development of water-efficient, climate-resilient tobacco varieties.

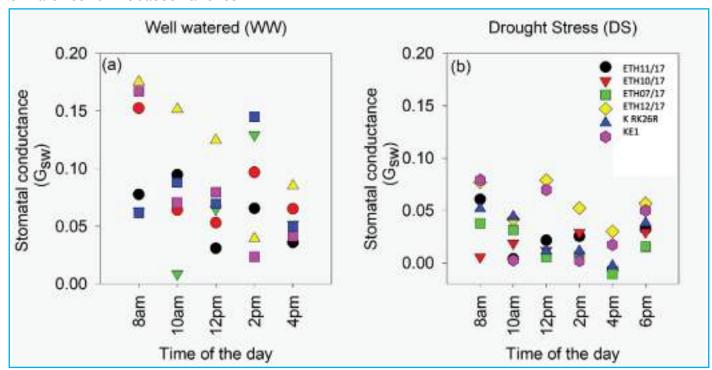


Figure 1: Compares stomatal conductance (Gsw) dynamics of four experimental tobacco hybrids: ETH11/17, ETH10/17, ETH07/17, ETH12/17, and two checks: K RK26R, and KE1, under well-watered (WW) and drought stress (DS) conditions. The top panel shows Gsw variation throughout the day, while the bottom panel visually contrasts plant morphology, highlighting wilting under drought stress. White bar = 25cm.



Strategic Crop Diversification: Research Priorities in Chia (Salvia hispanica L.), Hemp (Cannabis sativa L.), and Irish Potato (Solanum tuberosum) as Alternatives to Tobacco

The World Health Organization Framework Convention on Tobacco Control (WHO-FCTC) Article 17 urges signatories - to promote viable alternatives to tobacco and support research on crop diversification. As the SAP division, we align with these goals by optimizing high-value alternative crops for Zimbabwean farmers, emphasizing agronomic suitability and economic viability.

Alternatives and Alternates Cluster Research

Salvia hispanica L. Research			
Focus	Context	Progress in 2024	Way Forward
Optimizing Chia (Salvia hispanica L.) Cultivation: Evaluating Seeding Rate and Planting Methods	As Zimbabwe explores alternative crops to enhance agricultural diversity, Chia (Salvia hispanica L.) has emerged as a promising option. Known for its high nutritional value (rich in omega-3 fatty acids, protein, and fiber), Chia also offers excellent drought tolerance, making it an attractive crop for sustainable farming. Moreover, its potential for profitable commercialization has drawn the attention of farmers seeking new opportunities. The objective of this study was to optimize Chia cultivation by evaluating the effects of seeding rates and planting methods on its productivity.	The trial results showed that a seeding rate of 5 kg ha-1 broadcasted produced the highest yield of 1,310.40 kg ha-1, 76% higher than in-row planting and 177% greater than 7 kg ha-1 in-row. Findings suggest that lower seeding rates and broadcast methods optimize chia productivity by improving seed distribution. However, some literature reports indicate that chia yields can exceed 2,000 kg ha-1 under optimal conditions, highlighting potential areas for further yield improvement. The use of a compost-only nutrient regime may have limited the yield potential, suggesting that additional or alternative nutrient sources could enhance production.	 Conduct a second-season trial to validate findings and confirm optimal seeding strategies. Optimize fertilizer placement techniques to complement the best-performing seeding rates.



Cannabis sativa L. Research			
Focus	Context	Progress in 2024	Way Forward
Optimizing Nitrogen Fertilization for Industrial Hemp (Cannabis sativa L.) in Zimbabwe	Industrial hemp (Cannabis sativa L.) has gained significant attention in Zimbabwe as a promising alternative crop due to its economic potential and adaptability to local growing conditions. As with many crops, nitrogen plays a crucial role in promoting growth and supporting physiological processes in hemp. However, excessive nitrogen application can lead to nutrient imbalances, reduced efficiency, and increased environmental stress. This study aimed to assess the effectiveness of different nitrogen rates on the grain yield of hemp grain.	 Results from the trials showed that the highest nitrogen rate (196 kg N ha-1) significantly increased plant height by 21% compared to the standard, while lower rates showed no statistical difference from the control. Seed Grain Weight: All nitrogen rates performed comparably to the standard, indicating no substantial improvement in grain yield with increased nitrogen application. Protein Content: Protein percentage peaked at an intermediate nitrogen level before declining at 196 kg N ha-1, suggesting a balance between nutrient availability and plant metabolism. The highest nitrogen rate (196 kg N ha-1) significantly increased gaseous exchange by 32% over the standard, highlighting nitrogen's role in enhancing metabolic activity and biomass accumulation. 	 Conduct a second-season trial to validate findings and assess long-term nitrogen effects. Expand research into additional agronomic factors, such as plant density to further optimize hemp productivity.





Context Progress in 2024 **Way Forward** Focus Cannabis sativa L. Comprehensive Zimbabwe possesses a The research has made Genetic Diversity rich diversity of cannabis significant strides in 2024, genetic profiling landrace varieties, which of collected Study with the following key have evolved under developments: germplasm to local agroecological Collected 50 landrace establish distinct conditions. However, due cannabis accessions from key genetic clusters to historical restrictions. growing regions including, but and breeding not limited to Binga, Gokwe, potential. these varieties remain Chipinge, Guruve, Banket and Initiating selective largely undocumented. The partnership between Chirumhanzu, establishing a breeding programs Kutsaga and the Midlands comprehensive germplasm to enhance desired State University (MSU) aims collection that captures agronomic and to bridge this knowledge medicinal traits. Zimbabwe's diverse cannabis gap. The studies involve: genetics. Conducted replicated field Germplasm acquisition trials across Kwekwe and across Zimbabwe. Harare to systematically Genetic screening and evaluate all 50 lines for characterization of growth performance, landrace accessions. phenotypic characteristics, Identifying traits related and environmental adaptation under different soil and to yield, cannabinoid content, drought climate conditions. tolerance, and pest resistance. Establishing a foundation for breeding programs, regulatory frameworks, and commercial cannabis production in Zimbabwe.

Senior Research Officer from Kutsaga and a Postdoctoral researcher from the University of Bristol (UK) conducting ethnobotanical studies in Binga, Zimbabwe. Local farmers were engaged to document traditional cannabis knowledge and landrace conservation practices, alongside collecting indigenous cannabis accessions for preservation and future breeding programs.





Solanum tube	Solanum tuberosum Research				
Focus	Context	Progress in 2024	Way Forward		
Developing Local Irish Potato (Solanum tuberosum) Varieties for Self- Sufficiency and Reduced Import Dependence	Zimbabwe imports >90% of its potato seed from South Africa, leading to: • High foreign currency expenditure (estimated >US\$10 million annually) • Increased risk of introduction of seed-borne pathogens such as Ralstonia solanacearum and PVY (Potato Virus Y) • Limited availability of climate- adapted, locally bred varieties. In response, Kutsaga, in collaboration with Marondera University of Agricultural Sciences and Technology (MUAST) initiated a breeding program to enhance domestic seed systems and varietal development.	A total of 22 genotypes sourced from the International Potato Center (CIP) were systematically evaluated under open-field conditions. The evaluation employed morphological descriptors based on the International Union for the Protection of New Varieties of Plants (UPOV) guidelines, complemented by phenological observations, to assess varietal differentiation and agronomic potential. Significant morphological diversity was observed among the accessions, notably in anthocyanin pigmentation of stems and floral corollas, leaf arrangement, growth habit, and stolon formation—traits critical for breeding decisions and market preferences.	 Focus on molecular characterization for precise genetic profiling. Expanding field trials to assess yield stability, disease resistance, and adaptability. 		



Divisional Research Theme

The Plant Health and Agricultural Resilience (PHAR) Division operates under the guidance of the Board's revised mandate, which is anchored in Vision 2030, a comprehensive national development blueprint, and the National Agriculture and Food Systems Transformation Strategy, a national plan for sustainable agricultural growth and development.

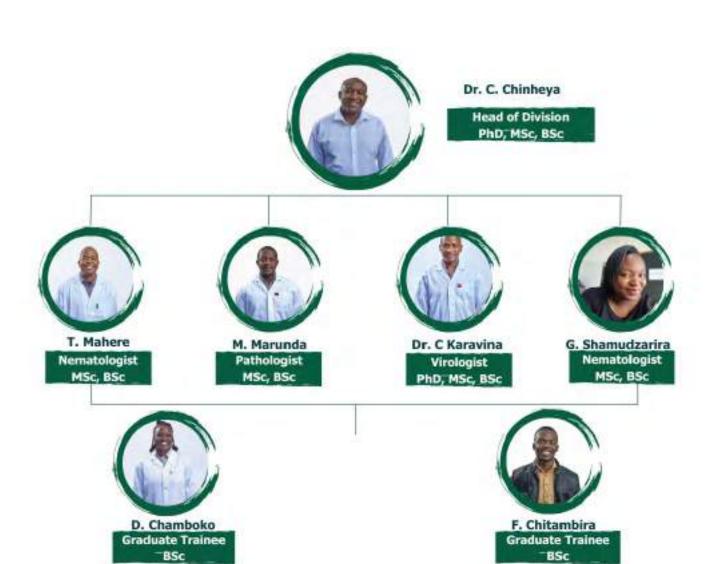
In line with its mandate, the Plant Health and Agricultural Resilience Division has identified the following key research thrusts:

- i. **Pest and Disease Surveillance:** Monitoring, timely detection, and awareness-raising on emerging or re-emerging pests and diseases to inform grower advisory services and promote good agricultural practices.
- ii. **Integrated Pest and Disease Management:** Researching cost-effective and sustainable IPM systems for tobacco and alternative crops.
- iii. **Native Biocontrol Agents:** Prospecting for indigenous biocontrol agents to manage abiotic (drought) and biotic (pests and diseases) factors affecting tobacco production.

Alternative Crops Research: Investigating economically viable alternative crops to tobacco, aligning with WHO FCTC Article 17, to provide Zimbabwean growers with sustainable options.

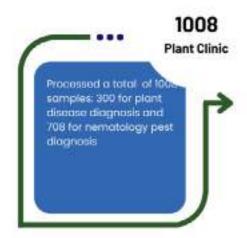
Environmentally Friendly Crop Protection: Screening and providing growers with environmentally friendly crop protection agents through the Pesticide Approval Scheme Service (PASS).

Team Structure

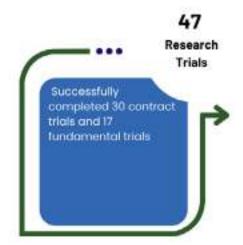




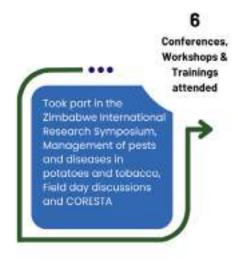
Summary of Outcomes















1. Monitor	1. Monitoring and detection of new and re-emerging diseases				
Focus	Context	Progress in understanding the complex	Way Forward		
a) Black shank/ Fusarium wilt Disease complex	The 2023-24 farming season witnessed a dramatic 500% surge in cases of tobacco wilts and root-rots diagnosed at the Kutsaga Plant Clinic. Notably, the majority of these cases were attributed to co-infections of Fusarium spp and Phytophthora nicotianae, culminating in the devastating Black Shank/Fusarium wilt (BS/FW) disease complex. This complex affected all tobacco varieties nationwide, posing a significant threat to the country's tobacco crop. The emergence of the Black Shank/Fusarium wilt (BS/FW) disease complex is attributed to a combination of factors, including climate change and the global trade in agricultural commodities. The El Niño conditions during the 2023-24 season created an ideal environment for disease development.	Significant progress has been made in understanding the Black Shank/Fusarium wilt disease complex. Several new Fusarium species have been detected co-infecting tobacco with Phytophthora nicotianae, including F. falciforme, F. foetens, F. chlamydosporum, F. longifundum, and F. nygamai. Notably, F. falciforme has been identified as the most widespread and highly virulent species to tobacco. Fungicide Sensitivity Testing: In addition, fungicide sensitivity testing has revealed that: • 67% of P. nicotianae isolates are susceptible to Ridomil Gold® • Only 6% of isolates are insensitive to the fungicide These findings provide valuable insights into the disease complex and inform the development of effective management strategies.	To address the growing threat of the Black Shank/Fusarium wilt disease complex, we are taking a multi-faceted approach: Fungicide Evaluation: Field trials are currently underway at multiple sites across the country to evaluate the efficacy of various fungicides in managing the disease. Breeding for Disease Resistance: Concurrently, we are conducting breeding trials to develop tobacco varieties with inherent resistance to the disease complex. These proactive measures aim to provide tobacco farmers with effective tools to mitigate the impact of the disease complex and ensure a sustainable tobacco industry.		



2. Monit	2. Monitoring and detection of new and re-emerging diseases				
Focus	Context	Progress in understanding the complex	Way Forward		
b) Potato virus Y	Potato virus Y (PVY) is one of the most important pathogens of solanaceous crops worldwide. It is capable of causing up to 70% yield losses in tobacco depending on plant age at the time of infection (crop age), varietal susceptibility, virus strain, and environmental conditions during the growing season. PVY is transmitted by over 65 aphid species in a nonpersistent manner. The green peach aphid (Myzus persicae) is the most abundant and efficient vector. In Zimbabwe, serious sporadic outbreaks of PVY disease occur with devastating consequences to farmers. Regular surveillance studies are carried out frequently in order to understand the biology and ecology of the pathogen. As part of efforts to develop control measures against the disease, there is need to understand the diversity of PVY strains present on tobacco in Zimbabwe.	To better understand the scope and characteristics of the disease, we conducted comprehensive nationwide surveys. Diseased plant samples were collected, and viral RNA was extracted from these samples. cDNA was synthesized and subsequently sent to Inqaba Biotechnical Industries in South Africa for sequencing and further analysis. We successfully recovered partial PVY genomes from the isolates. These genomes, combined with those obtained from the 2017/18 season, were subjected to in-depth phylogenetic analysis. This analysis aimed to shed light on the genetic relationships and evolutionary dynamics of the PVY isolates. BLAST analysis showed that the isolates from Banket, Shamva, Banket and Wedza were at least 98% identical to pepper-infecting isolates from Zimbabwe (pep-Zim2, q19-Harare and d7-Bindura) and 96-99% identical to tobacco-infecting isolates collected from tobacco in 2017/18 at the nucleotide level. These isolates were highly similar to isolates from France, Slovenia, India and South Korea. The isolate from Headlands was in a separate cluster with isolate P36 (Accession number KX184816) from Israel, isolate isolate Yz-CM2 (Accession number JN034572) from the UK and isolate JL-12 (Accession number MN607704) from China.	i. Expanded Surveillance: Conduct additional surveys to collect and characterize more PVY isolates, enhancing our knowledge of the virus's genetic diversity and epidemiology. ii. Variety Screening: Systematically evaluate breeding lines and open- pollinated varieties for susceptibility to different PVY strains, identifying potential sources of resistance. iii. Leveraging CRISPR/ Cas9 Technology: Harness the power of gene editing to develop novel breeding lines with built-in resistance to PVY, offering a promising solution for sustainable disease management		



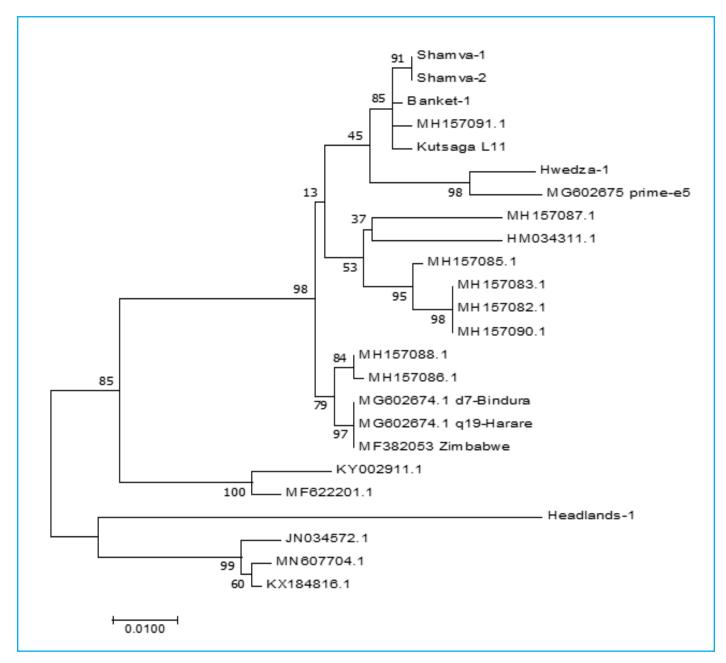


Figure 1: Molecular Phylogenetic analysis of the tobacco infecting PVY isolates collected in Zimbabwe inferred by using the Maximum Likelihood method based on the Tamura 3-parameter model.



2. Monit	2. Monitoring and detection of new and re-emerging diseases			
Focus	Context	Progress in understanding the complex	Way Forward	
c) Angular leaf spot	Angular leaf spot (ALS) is an economically important bacterial disease of tobacco caused by Pseudomonas syringae pv. tabaci Tox If not managed, ALS may cause drastic yield losses of up to 80% especially during wet seasons. ALS also negatively impacts leaf quality by causing extensive areas of dead tissue from leaf necrosis. In Zimbabwe, the eastern districts of the country (Marondera, Macheke, Headlands, Rusape and Odzi) tend to experience regular outbreaks of this disease. Until recently, only Bion (Acibenzolar-S-Methyl) was the registered bactericide for field control of ALS while Bion, copper oxychloride (60 FW and 85 WP), and cupric hydroxide were seedbed bactericides. Bion remains the most effective product for managing this disease, and there is thus a need to find other alternatives to prevent development of resistance. Field trials were set up in Marondera, Macheke, Headlands and Darwendale between the 2018/19 to 23/24 seasons to evaluate other bactericides for the management of ALS.	Following the trials, several products were identified as effective for managing ALS in float seedbeds, including copper ammonium acetate, 2% kasugamycin, Bacillus subtilis, a generic form of acibenzolar-S-methyl, a copper oxychloride 700 SC formulation, and three formulations of copper oxychloride 85 WP. Additionally, Cuperdem, copper sulfate, and copper hydroxide, which were evaluated for the first time this season, showed significant potential for ALS management in conventional seedbeds. These findings will be advanced to subsequent evaluation seasons. Moreover, a synthetic bactericide, FEA+IST, was found to be effective and has been registered for use in conventional seedbeds. For field control, several bactericides, including kasugamycin, Vacciplant, the combination of kasugamycin and Vacciplant, Verni-calcium, Rheum officinalis combined with Azoxystrobin, and hydrogen peroxide, were also found to be effective and registered for field use.	Further evaluations of both generic and non-generic products are planned, including copper ammonium acetate, QAC, Oryx SC, six generic formulations of kasugamycin, a combination of 20% ascorbic acid and 30% salicylic acid, Benziothialinone, Fytosave, Bestcure, and Patostop.	



F	Comband	D	Was Famous
d) Management of mealybug on tobacco: an emerging pest.	Mealybugs were first reported as a serious pest on tobacco in Zimbabwe in 1985 but were never considered economically important, thereafter. In the 2019/20 season, the was reported as problematic in Odzi district in Manicaland. Since then sporadic incidences were reported in various regions including Mt Darwin, Shamva, Mhangura and later in Guruve and Mashonaland west.	Lab and field trials were established to address the concerning infestations of mealybug in tobacco. The primary objective of the trial was to assess the effectiveness of systemic insecticides in treating mealybug infestations.	Research work continues on monitoring, biology, ecology and preventative options for the management of mealybugs.
e) Management of false wireworm on tobacco: An emerging pest.	Historically, false wireworms were not common pests on tobacco; however, in September 2023, there were sporadic reports of their presence. The emergence of these pests as an economically significant threat can be linked to the deregistration of several broad-spectrum insecticides on tobacco due to sustainability initiatives. Consequently, many of the recommended insecticides have proven less effective in managing this issue. Additionally, the impacts of climate change have likely contributed to the rise in their prevalence. Trials were set up in controlled environments to evaluate different insecticide formulations for their efficacy in management of false wireworm on tobacco.	Results so far indicate that Imidacloprid 200 SL, Imidacloprid 70 WP, Imidacloprid 20% + Lambdacyhalothrin or Fipronil applied into the planting hole as a preventative treatment to protect the seedlings from false wireworm damage were effective. The same active ingredients applied as drenches right round the seedlings on emergence of the pest will work as a curative treatment to effectively manage false wireworms.	Studies on sustainable management of soil-based insects will be established in the coming season.



3. Cost effective and sustainable integrated pest and disease management				
Focus	Context	Progress	Way Forward	
Sustainable RKN Management in Tobacco: Going Green	The recent withdrawal of fumigant nematicides, compounded by limited land availability for prolonged crop rotations in Zimbabwe, has necessitated the exploration of novel technologies for managing root-knot nematodes (RKNs). One promising approach involves the utilization of environmentally benign, sustainable, and efficacious "green" nematicides. This trial aimed to establish the efficacy of all registered "green" nematicides, applied in accordance with recommended protocols. Conventional nematicides, including ethylene dibromide (EDB), 1,3-dichloropropene (1,3-D), and oxamyl, were also incorporated into the trial design to provide a comparative framework.	In the first two seasons of this trial, the green-label nematicides (Fluopyram, Tymirium, Fluensulfone, and Chitosan) performed comparably to the standard planting-hole nematicide, Oxamyl. Although they were outperformed by EDB and 1,3-D in susceptible KM10 plots (Figure 2), they showed favorable results in resistant K RK74-planted plots, comparable to fumigant-treated plots. Notably, none of the current chemistries demonstrated efficacy comparable to the old broad-spectrum nematicides. This highlights the inherent trade-off between environmental safety and efficacy. As a result, it is essential to adopt an Integrated Pest Management (IPM) approach to nematode control, combining multiple strategies to achieve optimal results. A Tobacco Field Discussion Day event held in January 2024 provided growers with an opportunity to observe the trials and evaluate crop performance. The event, broadcast on national media, generated significant interest on social media platforms and among industry stakeholders. Representatives from agrochemical companies showcasing registered green-label nematicides also participated, discussing product features and recommended application methods	 i. To further advance nematode management strategies, we are pursuing the following research initiatives: ii. Continuing efficacy trials to register additional greenlabel nematicides, expanding the range of environmentally friendly options for growers. iii. Evaluating several promising biological control agents to identify effective alternatives to chemical nematicides. iv. Conducting trials with chloropicrin, a potential replacement for EDB, which has been withdrawn from tobacco production. v. Optimizing application protocols for green-label nematicides to enhance their efficacy and provide growers with practical guidance for integrating these products into their management strategies." 	





Kutsaga adopts tobacco green plan revolution, phases out EDB

Fig. 2: Article showing the susceptible K M10 plots treated with various nematicides



Focus	Context	Progress	Way Forward
Evaluation of Root-knot nematode suppression potential of Mustard (Brassica juncea)	Considerable research has been conducted in Zimbabwe to identify suitable rotation crops for tobacco systems. While sunnhemp and Katambora have been recommended, there is a need to explore more ideal options, particularly for smallholder tobacco farmers. Research in other cropping systems has demonstrated the potential of mustard (Tsunga) as an effective crop for nematode and disease suppression. Trials were established to investigate the suitability of mustard as a relay crop with tobacco. The study also examined the efficacy of a combination of mustard and the biological control agent Trichoderma harzianum, exploring potential synergies between these two approaches for enhanced nematode management. Mustard was planted as a winter cover crop prior to tobacco planting in summer, aligning with recommendations for effective nematode management	Results of these trials showed that tobacco planted in plots that treating mustard with Trichoderma harzianum (T77), either alone or in combination with fluopyram prior to planting, resulted in tobacco plants with gall ratings comparable to those treated with the standard nematicide, fluopyram. Over time, the use of Trichoderma offers additional long-term benefits, such as enhancing soil health by promoting beneficial microbial activity, improving nutrient cycling, and fostering sustainable agricultural practices, making it an effective RKN management option for the Zimbabwean tobacco grower, especially the small-scale farmer	i. To evaluate the efficacy of Mustard and Trichoderma harzianum (T77) on root-knot nematodes and disease control in tobacco lands. ii. To investigate whether Mustard and Trichoderma modulates the hormone signaling network in the host to induce resistance to nematodes.



4. Tobacco alternatives				
Focus	Context	Progress	Way Forward	
a) Industrial Hemp trials	As the global tobacco industry faces an impending ban due to the World Health Organization's Framework Convention on Tobacco Control (WHO-FCTC), industrial hemp (Cannabis sativa) has emerged as a promising alternative crop. Given its relatively new status in Zimbabwe, it is crucial to investigate the diseases affecting this crop. Like other crops, industrial hemp is vulnerable to various diseases caused by fungi, bacteria, and viruses. This study aimed to document the diseases infecting industrial hemp in Zimbabwe, providing essential information for farmers, researchers, agronomists, and other stakeholders. The findings of this research will contribute to the development of effective disease management strategies, ensuring the sustainability of industrial hemp production in Zimbabwe.	During the review period, diseased plant samples were collected from the Kutsaga Station hemp trial site, and pathogens were isolated and characterized. The survey revealed that hemp in both the seedbed and field was susceptible to various diseases, including Fusarium wilt, Alternaria in the seedbed, and white mold and Alternaria leaf spot in the field. Furthermore, bacterial and viral infections were also observed, although further analysis is required to determine their specific identities.	Building on the findings of this study, future research will concentrate on developing effective preventative and curative management strategies for pests and diseases affecting hemp in Zimbabwe. A key area of focus will be the isolation and development of native biological control agents that exhibit antagonistic properties against hemp pathogens, providing a sustainable and environmentally friendly approach to disease management.	



5. Stakeholder engagement				
Focus	Context	Progress	Way Forward	
a) Growers	It is essential for researchers to interact with growers to facilitate demand-driven research and extension services. This interaction enables researchers to understand the real-world challenges and opportunities faced by growers, ultimately informing research priorities and ensuring that outputs are relevant, effective, and impactful. The primary objective of these interactions is to identify, prioritize, and address the key challenges and constraints faced by growers, thereby enhancing their productivity, profitability, and overall competitiveness. Through these interactions, researchers can gather firsthand information, disseminate research findings and recommendations, foster collaborative relationships, and promote co-learning and co-innovation. At Kutsaga these interactions are facilitated through various platforms, including field days and demonstrations, workshops and training sessions, one-on-one consultations and advisory services, as well as grower meetings and focus group discussions. By engaging with growers and understanding their needs, challenges, and aspirations, the Division can conduct research that is grounded in reality, focused on impact, and dedicated to making a positive difference in the lives of growers.	Throughout the reporting period, the Division engaged with growers through various outreach and extension activities. One such interaction is through Circus meetings. This is a forum where researchers and farmers meet to appraise on season developments. A total of 21 Circus meetings held with small holder growers and another five were held with large-scale commercial growers in Mashonaland Central, Manicaland and Mashonaland West provinces. The team interacted with some 1 042 growers during these meetings. During the discussions, growers voiced significant concerns regarding the escalating severity of various pests and diseases affecting their crops, including root knot nematodes, fungal wilts, leaf spot diseases, Potato Virus Y (PVY), and the emergence of mealy bugs. These issues are being exacerbated by climate change, further complicating the challenges faced by growers. In response growers were given advisory on how best to manage these pests and diseases. Furthermore some 12 advisory notes (Dear Grower letters) were done to advise growers and were distributed via social media platforms, grower magazines and newspaper articles.	i. Set up trials on the management of some of the new and re-emerging pest challenges. ii. Continue work on evaluation of and selection of new pesticides (biological, chemical) to manage these pests iii. Intensify extension services: Increase the frequency and reach of grower interaction meetings, especially in areas most affected by these pests and diseases. iv. Regular monitoring and evaluation to assess the effectiveness of extension services to determine if the advisory services provided are yielding desired results, and make data-driven adjustments to optimize impact.	



Focus	Context	Progress	Way Forward
b) Agrochemical companies	The management of pests and diseases in the tobacco production cycle has historically mostly relied on the use of synthetic agrochemicals. However, the Tobacco Research Board has since 1964, advocated for Sustainable Tobacco Production practices through the active search for and selection of less toxic and environmentally benign agrochemicals for use on tobacco. This has become increasingly important in the face of the World Health Organization's Framework Convention of Tobacco Control (WHO-FCTC) (Article 18), which puts emphasis on the "Protection of the Environment and the Health of Persons". The Board, instituted the Pesticides Approval Scheme Service (PASS) in 1964 in response to concerns about pesticides residues in export tobacco and to enable the use of Good Agricultural Practises (GAP) in tobacco production. As such, all new and new source agrochemicals intended for use	Meetings were held with all 32 out the 40 agrochemical company representatives. The purpose of the meetings was to ensure that the clients were kept up to date regarding their PASS trials and to promote transparency and good working relations. The meetings were very cordial and positive as all the clients showed their satisfaction at the initiative. Progress reference your interaction Companies were invited to establish communication channels by interfacing with researchers and visiting their trials. Updates were given to the clients, where requested, in line with the set timelines for submission of reports. Seedbed reports are submitted by 30 April while field trial reports	Pre-submission consultations: Offer pre- submission consultations to ensure companies understand the requirements for product evaluation and registration to address potential issues early. Clear guidelines and checklists: Provide transparent, easy- to-follow guidelines and checklists for companies to prepare and submit their applications. Stakeholder engagement: Foster stakeholder engagement through regular (quarterly) meetings, workshops and consultations to ensure that diverse perspectives are considered. Transparency in decision- making: Ensure transparency in decision-making processes, including clear explanations for registration approvals and rejections. Industry training and support: Offer training and support through collaboration
	agrochemicals intended for use on tobacco have to be evaluated before use by growers. In this regard PASS	while field trial reports are issued by 30 June. There were challenges with few clients	support through collaboration with CropLife for industry stakeholders on pesticide development, testing and registration requirements.
	administrators and technical staff periodically meet with agrochemical company representatives to ensure that the clients are kept up to date	coming through to visit their trials despite being invited. Late submission of products for trials constrained	Grower awareness and education: Conduct grower awareness and education campaigns to promote
	regarding their PASS trials and to promote transparency and good working relations.	the set timelines and establishment of some trials.	responsible pesticide use and safety practices.



Focus	Context	Progress	Way Forward
c) Universities and colleges	Kutsaga has established strategic partnerships with various universities and colleges to foster collaboration and drive innovation. Through these partnerships, we provide opportunities for students to engage in work-related learning, gain practical experience, and develop industry-relevant skills. Our collaboration also extends to the supervision of dissertations and research projects, ensuring that students receive guidance and mentorship from experienced professionals. This collaboration benefits both parties. For universities and colleges, partnering with Kutsaga provides students with real-world experience, enhances their employability, and fosters entrepreneurship. For Kutsaga, the partnership offers access to fresh perspectives, innovative ideas, and highly skilled talent, enabling us to stay ahead of the curve and address industry challenges. Ultimately, our university collaboration drives innovation, workforce development, and economic growth, while enhancing the quality of education and research.	A total of six undergraduate students received valuable work-related research training with four of students graduating with distinctions in the research dissertations. Furthermore, two MSc students successfully completed their programs, culminating in two research publications, one submitted and another in progress. Write about the former students whom you reengaged to work in the Division and how you are a beneficiary of this work. Based on the collaborative work with universities, Dr. C. Chinheya, (Head of the PHAR), was appointed as the inaugural chair of the Microbiology Ecology Research Network in Zimbabwe.	i. Create a structured platform to track and reengage former students who excelled, offering pathways for mentorship and part-time research roles. ii. Continue offering topperforming undergraduates opportunities to return as research interns



1.4. ANALYTICAL CHEMISTRY SERVICES DIVISION (ACS)

About Analytical Chemistry Services Group (ACSG)

The Analytical Chemistry Services Group operates under the guidance of the Board's revised mandate, which is anchored in Vision 2030, a comprehensive national development blueprint, and the National Agriculture and Food Systems Transformation Strategy, a national plan for sustainable agricultural growth and development.

The laboratory is accredited to ISO/IEC17025:2017 and its mission is to provide world class value-adding chemical and pesticide analysis services, empowering the agricultural sector and safeguarding food security. ACSG's purpose is to enable analysis-based lime and fertilizer recommendations, generate information on plant chemistry and crop nutrition requirements and to provide the tobacco industry with pesticides and chemical screening quality assurance service. ACSG offers the following services at the core of its activities:

- i. Soil testing service;
- ii. Plant and foliar analysis service;
- iii. Water testing service:
- iv. Pesticide residue testing service;
- v. Product analysis service; and
- vi. Microbiology testing service



Team Structure

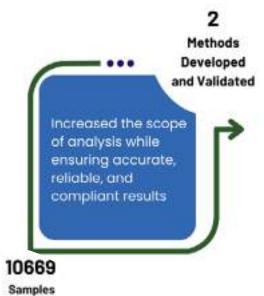






Summary of Outcomes





Provided precise analytical data for quality, safety, compliance, and research on various sample matrices



1. ISO/IEC 17025:2017 Quality Management System Accreditation			
Focus	Context	Progress in 2024	Way Forward
a) Commitment to quality through maintaining ISO 17025 accreditation status	The laboratory is accredited to ISO 17025 by Southern African Development Coordination Accreditation System (SADCAS) accreditation body and is annually audited for compliance.	The laboratory was assessed by SADCAS from 5-6 February 2024 and retained the accreditation certificate. The laboratory also participated in international proficiency testing schemes such as AGRILASA (for soil, plant material, water, fertilizer, and feed), SADC-met/ NAM-water (water chemical analysis) and FAPAS (tobacco pesticide residues), ensuring compliance with ISO 17025 requirements. Internal audit and various trainings were conducted during the year for continuous improvement and maintaining the quality management system.	Continuous improvement while maintaining the accreditation status

2. SAMPLE ANALYSIS

A total of 10 669 samples (7 682 soil samples, 1 778 foliar/plant samples, 745 water samples, and 464 product samples) were analyzed, exceeding the set target of 9,300 samples by 14.7%

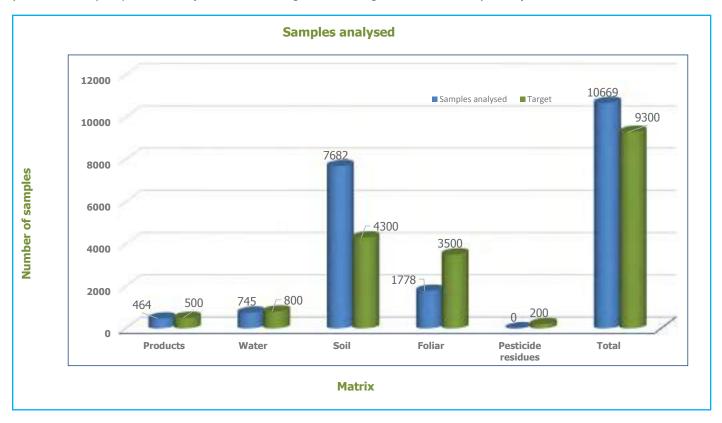


Fig. 1 Samples analysed vs. target by matrix.



2.1 Sample analysis by matrix				
Focus	Context	Progress in 2024	Way Forward	
a) Soil analysis	This enables analysis-based lime and fertilizer recommendations, improving crop yield and maximizing profit. Soil testing is essential for monitoring soil rehabilitation progress. Heavy metal contamination is also tested to ensure food safety.	During the reporting period, the laboratory exceeded its sample analysis target, processing a total of 7,682 samples. This represents a significant increase of 192.1% above the targeted volume. The substantial growth in sample analysis was primarily driven by a large-scale project undertaken by one of our key clients, which generated a notable influx of samples during the year.	Continued marketing of the service to generate more revenue for the organisation and supporting research programmes	
b) Water analysis	The laboratory provides comprehensive water testing services for drinking, irrigation, and effluent/environmental water. These services are essential for ensuring the suitability of water for various purposes, monitoring its quality, and detecting potential contaminants. Irrigation water testing helps to identify contaminants that may harm crops or irrigation equipment Effluent water monitoring is vital to ensure compliance with regulations and maintain acceptable levels of contaminants Drinking water is tested to ensure its suitability for drinking purpose.	A total of 745 water samples were analysed during the year, achieving 93.1% of the target. The laboratory continues to support the industry in effluent monitoring to reduce environmental and water pollution. The samples received from these industries constituted a significant portion of the division's water analysis samples, highlighting the importance of our services in promoting environmental sustainability and compliance	Continued marketing of the service to generate more revenue for the organisation and supporting research programmes	
c) Plant/ foliar analysis	The laboratory provides plant/foliar analysis services to provide valuable insights into plant chemistry and nutritional requirements. These services enable: • Identification of deficiencies and optimization of crop nutrition. • Determination of chemicals such as nicotine, nornicotine, reducing sugars, and chlorides during tobacco breeding cycles. • Detection of heavy metals, trace elements, nitrogen, and nitrates and assess their impact on crop quality.	Tobacco samples from research experiments contributed the majority of the samples. The laboratory analysed 1 778 plant/foliar samples, representing 50.8% of the target. A major breakdown of LC-MS/MS impacted the analysis of nicotine and nornicotine samples for breeder seed resulting in a major backlog.	Continued marketing of the service to generate more revenue for the organisation and supporting research programmes	



d) Product analysis	Product/agrochemical are tested to ensure compliance with specifications and confirm formulation specifications before use. These services cover agrochemicals, such as pesticides, fertilizers, soil conditioners, and plant growth regulators. Product/agrochemical testing service generates information for the registration of agrochemicals under Pesticide Approval Service Scheme.	During the period under review, a total of 464 samples for active ingredients and fertilizers, achieving 92.8% of its target. The laboratory continues to receive a considerate number of product samples but the service delivery was affected by some critical instruments which were not working.	Continued marketing of the service to generate more revenue for the organisation.
e) Pesticide residue analysis	The laboratory offers pesticide residue screening services to ensure food safety and protect consumers from potential health risks. Pesticide residues should be compliant with various regulatory requirements. The laboratory analyses pesticide residues in various matrices, including tobacco, fruits, vegetables, water and soil.	The laboratory was unable to analyze any pesticide residue samples during the reporting period. The laboratory's major instruments (LC-MS/MS and GC-MS/MS) stopped functions after a major voltage spike during beginning of the year and this affected our operations. Measures are now in place avoid this in future.	Continued marketing of the service to generate more revenue for the organisation



3. METHOD DEVELOPMENT/ VALIDATION

3.1 Sample analysis by matrix			
Focus	Context	Progress in 2024	Way Forward
a) Method development and validation for the analysis of organochlorines residues in cannabis spp	The need to meet regulatory requirements and quality assurance of industrial hemp and medicinal cannabis produce has prompted the laboratory to develop and validate methods to analyze various chemical components in cannabis species and soils. The use of pesticides is prevalent in agricultural practices, including cannabis cultivation. However, the potential for excessive pesticide residue exposure poses significant risks to human health and the environment. For the lab to expand its scope of analysis, there is need to develop and validate methods for organochlorines, fungicides in cannabis spp and heavy metals in soil.	A robust and reliable method was developed and validated using a Gas Chromatography with Electron Capture Detection (GC-ECD) preceded by Soxhlet extraction and column cleanup. The validation results showed the accuracy range between 70% to 120%. Detection limit values ranged from 0.01 ppm to 0.03 ppm, indicating adequate sensitivity and demonstrated its suitability for routine monitoring of OC residues in cannabis	The method is fit for its intended use and provides a valuable tool for monitoring OC residues in cannabis spp, ensuring consumer safety and promoting responsible agricultural practices.
b) Method development and validation for the analysis of fungicides in cannabis spp	Organochlorine (OC) pesticides, are known for their environmental persistence and bioaccumulation, leading to detrimental effects on human and environmental health. Fungicides use is common to prevent development of pathogens. The most common fungicides being used are azoxystrobin, chlorothalonil, difenoconazole, dimethomorph, metalaxyl, tebuconazole, and triadimenol.	A robust and reliable method, utilizing Gas Chromatography-Tandem Mass Spectrometry (GC-MS/MS) preceded by dispersive solid-phase extraction (dSPE), was successfully developed and validated. The method demonstrated acceptable accuracy ranging between 70% - 120% and precision has RSD values of ≤20%. Therefore, the developed and validated GC-MS/MS method provides a reliable and sensitive tool for the simultaneous determination of seven key fungicides in Cannabis spp.	The method is fit for its intended use enhances the laboratory's capacity to monitor pesticide residues in cannabis spp, contributing to improved product safety.



c) Method
development
for arsenic
and mercury
analysis in
industrial hemp
arowina soils

Mercury and arsenic are found in soil from various activities and the major sources being mining and industrial activities which are common in Zimbabwe. To ensure regulatory compliance, the soils are tested for these contaminants.

Preliminary results from the proposed method demonstrated accuracy, with recoveries exceeding 75% for mercury and 90% for arsenic. Unfortunately, the method could not be fully validated due to the breakdown of the vapor hydride generation unit. Procurement of the required repair parts is in progress.

4. Collaborations and partnerships

Focus	Context	Progress in 2024	Way Forward
a) Collaborations and partnerships	Tobacco Leaf Exporters Association of Zimbabwe (TLEAZ) is assisting Kutsaga to get funding for equipment required to implement the Low Converter (LC) protocol method to enhance the tobacco varietal development process.	TLEAZ engaged Anne Jack-Fish, a consultant for knowledge exchange and to identify areas which may require assistance for Kutsaga to implement the Low Converter (LC) protocol.	TLEAZ is pursuing funding opportunities to support this initiative.



1.5. AGRICULTURAL BIOINFORMATICS, STATISTICS & ENGINEERING (ABSE)

AGRICUTURAL STATISTICS

The Division is comprised of two skills group which are Agricultural Engineering and Bioinformatics and Statistics.

Bioinformatics and Statistics

Mission: To provide innovative and data-driven solutions in agriculture through biometry, monitoring and evaluation, and geo-information systems, and to facilitate access to information and knowledge through library services, ultimately supporting informed decision-making, efficient resource management, and sustainable agricultural development.

Our services

Biometry: Designs innovative and efficient experiments, and provide data analysis and consultancy services as a basis of recommending new crop management practices.

Monitoring and Evaluation - Ensures that the organizations achieves its objectives by tracking progress, measuring impact, and using data-driven insights to inform decision-making.

Library services - Facilitates access to information by managing a collection of resources **Geo Information Systems** – Uses geospatial information to support precision agriculture, land management, and agricultural research to improving farming efficiency, resource management, and decision-making by leveraging geographic data.



Highlights

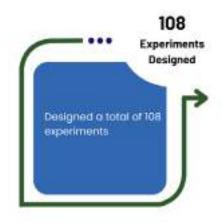
Traditionally, extension officers physically visited farms, manually measuring field dimensions to estimate the area under tobacco production—a process that was labor-intensive, time-consuming, and costly. In 2024, the institution embarked on a transformative journey by adopting remote sensing technologies, which utilize satellite, drone, or aircraft-based sensors to gather data on the Earth's surface without direct physical contact. This innovation enabled the estimation of tobacco cultivation areas using satellite imagery. Additionally, 2024 marked the first time the institution successfully collected field data digitally, enhancing data accuracy, efficiency, and accessibility.

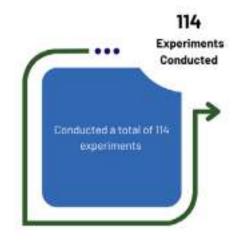
Team Structure



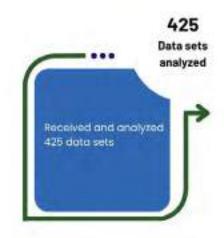


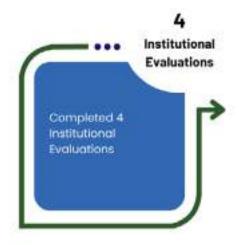
Summary Statistics

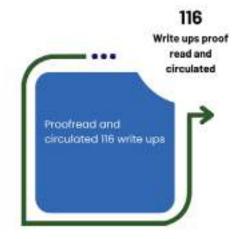














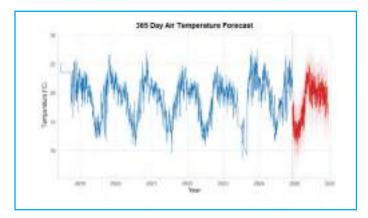
Activities under	Activities undertaken during the year.				
Focus	Context	Progress in 2024	Way Forward		
Study Designing	Study designing is the process of taking time and effort to properly plan an experiment or a survey, so that the right type of data and enough of it will be available for analysis. This process ensures reliable and valid scientific results by minimizing bias and systematic error in experiments and surveys. A well-designed experiment allows researchers to draw valid and reliable conclusions by controlling variability and ensuring that the observed effects are due to the factors being studied rather than external influences.	In the year 2024, a total of 114 experiments were conducted against a target of 110. The team assisted with the designing of 101 of these. The most popularly used designs included the Completely Randomized Designs, Randomized Block Designs, Factorial treatments structure and a rotation trials that had a split-split- plot with a factorial treatment structure in the subplot.	 i. The team will continue to look into more efficient designs that cater for multiple factors without compromising precision. ii. Training of researchers and students to better understand choice of designs will also be done 		
Data Management	Data management etails collecting, organizing, storing, and ensuring accessibility of the organization's data so that it can be utilized to support productivity, efficiency, and decision-making. Good research data management will enable organization of files and data for access and analysis without difficulty.	The year marked the beginning of a new era with the introduction of a digitalized data collection methods. In the Skills Group tablets equipped with a data collection Applications were utilized to gather information for two major surveys. A total of 2 642 and 392 questionnaires were administered for two surveys respectively. These surveys included; i. To establish the woodlot and float tray adoption level among growers ii. To establish the reasons for tobacco yield disparities (actual yields vs variety potential).	The planned work in the coming seasons is more use of technology in data collection and data storage. The team will therefore; i. Expand the use of tablets for all data collection in field trials and surveys ii. Digitalization of all data and historical records of experiment writeups which are only available in paper format		

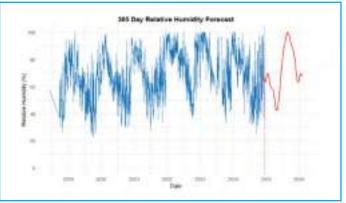


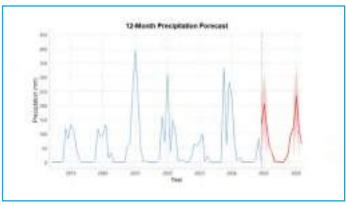
Focus	Context	Progress in 2024	Way Forward
Data Analysis	Data analysis converts raw data into meaningful insights, enabling researchers to test hypotheses and identify patterns and trends among variables. It helps establish relationships, draw informed conclusions, and advance knowledge, ultimately enhancing the reliability and validity of research findings. Providing a strong foundation for reliable research outcomes and informed decision-making.	Different data analysis techniques including analysis of variance, repeated measures analysis, log logistics regression, simple t-tests, and principal component analysis were used in data analysis. Each was applied depending on the type of data set, nature of the data and the objectives of the trial	 i. Future plans are to use statistical algorithms and machine learning to analyze data, enabling the organization to forecast future trends such as pest and disease outbreaks. ii. Also the use visualizations to communicate complex data insights for effective decision making.
Mathematical modelling – Weather forecasting	Mathematical modelling is the process of describing a real-world problem in mathematical terms, usually in the form of equations.	A mathematical model which will be used to predict future temperature, humidity and precipitation was developed using weather data collected by a SMART weather station located at Kutsaga station. The model is a SARIMA model of the order ARIMA (2,0,0)(0,1,0)[365] for temperature.	Use of machine learning and Artificial intelligence in model's organization to forecast future trends such as pest and disease outbreaks.











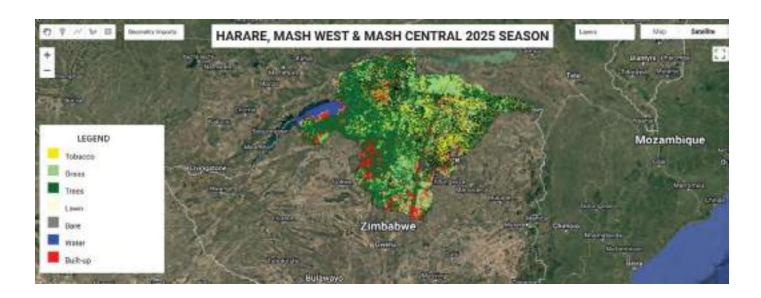
Focus	Context	Progress in 2024	Way Forward
Consultancy	It is important that all researchers to get assistance and guidance on statistical issues from statisticians to enable all work to be statistically sound. Consultants guide researchers in making full use of their data, extracting meaningful insights through the right analytical techniques, which might otherwise be overlooked. At times some topics are offered as training to all Researchers and students.	During the period under review, 71 consultancy sessions were held with researchers, interns and students as they conducted their work Among the issue consultations were held on include; i. Results interpretation and presentation to ensure the correct understanding of scientific findings. ii. Advice on sampling plans, sample sizes, and replications. This process ensures that researchers fully utilize their data to conduct more efficient and effective research. iii. Additional services were on developing sampling strategies for surveys or observational studies, performing power and sample size calculations to improve the designing of surveys and experiments. iv. Two training sessions were conducted on Design and analysis of experiments	To increase both the number and scope of trainings, the skills group will offer sessions on data visualization using Al tools to enhance the interpretation and presentation of results.



Focus	Context	Progress in 2024	Way Forward
Monitoring and Evaluation	Integrated Results-Based Management (IRBM) in monitoring and evaluation (M&E) is a systematic approach focusing on achieving specific outcomes and impacts rather than merely tracking activities and outputs. This methodology emphasizes the importance of results in guiding decision-making, resource allocation, and program improvement. A "whole of government performance management system" (WoGPMS) is a web-based tool used by government to improve public service delivery and efficiency by integrating performance management across all government sectors and agencies, ensuring alignment and accountability towards shared goals.	During the review period, the Strategic Plan, Annual Plan, and Annual Performance Contracts for the target year were successfully developed. To ensure continuous performance monitoring, projects and outputs metrics and outputs were tracked monthly using the Whole of Government Performance Management System (WoGPMS). This system generated a Performance Dashboard—a real-time visual tool that displays key performance indicators—enabling the organization to closely monitor progress and contribute to broader government performance goals. Quarterly evaluations were conducted against cumulative targets, ensuring that institutional objectives remained aligned with the National Development Strategy 1 (NDS1).	i. The institution plans to intensify ground truthing efforts to enhance the accuracy of monitoring activities on the ground. ii. In addition, the team intends to evaluate the Kutsaga Tobacco Improved Productivity Sites (TIPS) training program, which has been operational since 2017. This evaluation will focus on assessing the impact of the training, as well as identifying any knowledge or training gaps, with the aim of continuously improving training strategies and outcomes.



Focus	Context	Progress in 2024	Way Forward
Geo Information Science	Traditionally extension officers would visit farms and physically go around to measure and estimate area under tobacco cultivation. This process labor-intensive, costly, and time-consuming. Alternatively, surveys collected self-reported data from farmers, but this approach was susceptible to social desirability bias, where respondents might provide answers they deemed more acceptable rather than truthful. A modern alternative is remote sensing, which utilizes satellite, drone, or aircraft-based sensors to gather data on the earth's surface without direct physical contact. This technology is increasingly applied in agriculture to monitor crops, soil, and environmental conditions. It facilitates the analysis of crop health and biomass using spectral indices such as the Normalized Difference Vegetation Index (NDVI) and the Enhanced Vegetation Index (EVI).	During the period under review, a digital data collection application - Kobo Toolbox was used to collect Georeferenced data from farms in Harare. A detailed classified map (below) that shows various land categories, including tobacco fields, built-up areas, vegetation, water bodies, grasslands, and bare lands was produced. The estimated area under tobacco production in Harare was 1,291.6 hectares.	This project will continue collected data from the other tobacco growing regions. The collected data will be used to produce a map showing area under tobacco production in Zimbabwe.





Agriculture Engineering

1.0 Our Mission

To provide innovative and sustainable engineering solutions to support the agricultural sector especially the tobacco industry.

1.1 Research Theme

The Agricultural Engineering (AE) skills group operates under the guidance of the Board's revised mandate, which is anchored in Vision 2030, the National Development Strategy 1 (NDS1) and the Tobacco Value Chain Transformation Plan's (TVCTP) strategic objective of sustainable intensification of tobacco productivity and production. In line with this mandate, the AE team seeks to provide innovative and sustainable engineering solutions to support the tobacco industry and other agricultural sectors.

To achieve this mission, the AE skills group has identified the following key research objectives:

- i. Undertaking research work aimed at developing climate-smart technologies for farmers.
- ii. Identify and proactively design innovative, mechanically sound equipment and gadgets to meet the needs of growers and other Tobacco Research Board (TRB) Divisions.
- iii. Offer training on new technologies and oversee their integration into farming systems by growers.
- iv. Develop climate-smart technologies, innovations and crop management practices (precision irrigation, water harvesting, storage and delivery technologies).
- v. Offer timely advisory services and actively recommend new technologies to growers (energy efficient barns, irrigation infrastructure and sustainable farming).



Research

Trials &

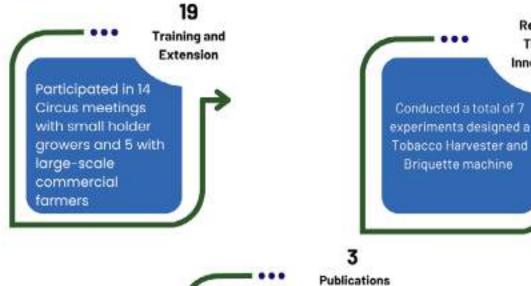
Innovation

Team Structure





Summary of Outcomes





2024 ANNUAL REPORT



Agricultural engineering Programme				
Focus	Context	Progress in 2024	Way Forward	
a) Improving curing barn efficiencies	In Zimbabwe's tobacco sector, a pressing need exists to boost energy efficiency, cut production costs, and foster environmental sustainability. Tobacco curing, a highly energy-intensive process, is a key area of focus. Inefficient curing barns result in excessive fuel consumption, higher operational costs, and compromised leaf quality. To address this, research in this area aim to improve the design, operation, and management of tobacco curing barns in Zimbabwe. Specific objectives include: i. Optimizing fuel use and exploring alternative energy sources, ii. Enhancing heat distribution and airflow, iii. Reducing curing time, iv. Utilizing locally sourced materials for construction, v. Leveraging simple yet effective construction techniques to reduce costs. By focusing on locally adaptable designs and sustainable practices, research in this area seeks to create a positive impact on the environment, growers, and the local economy.	 i. Two new innovations, the Family and the Shirikadzi barns were designed and developed in partnership with Kent Farm (Berin and Dale Stockil). ii. The Family barn was designed to cater for families growing 1-5ha of tobacco, while the Shirikadzi barn was designed for families growing 0.5 to 1 ha of tobacco Both barns particularly the Shirikadzi barn utilise locally available construction materials which significantly reduces the cost of construction to USD\$1 200 for Shirikadzi barn and USD\$1 600 for the Family barn compared to the KCC1 barn which costs USD\$3800 and USD\$3000 for the Rocket barn. iii. Preliminary results indicate optimal energy efficiency of 3.5 – 4.0 kg of wood per kg of tobacco for both the Family and Shirikadzi barn in the same range as the as the fuelefficient Rocket and KCC1 barn. iv. The Rocket barn, was successfully retrofitted with the Tsotso furnace. After undergoing 5 curing cycles, the modified barn has demonstrated significant improvement in energy efficiency to around to between 3.5 to 4.0kg of wood per kg of tobacco cured and satisfactory tobacco leaf quality. v. The BE21 furnace designed by Brown Engineering was also successfully retrofitted into the KCC1 barn. After 3-curing cycles, the retrofitted barn indicates potential for improving energy efficiency to between 3.5 to 4.0kg of wood per kg of tobacco cured and satisfactory tobacco leaf quality. 	i. A 2nd and 3rd season of testing the barns will provide robust data to support their effectiveness, however preparation of the floor plans for both the Family and Shirikadzi barns with a 4-tier structure to accommodate 350-400 and 200-300 strings of tobacco leaf respectively, are being finalised and will be made available. ii. Future research will focus on further optimising energy efficiency, reducing operational costs and enhancing tobacco quality. Key areas of investigation will include: Improving heat transfer and combustion efficiency in existing furnace designs and, Integrating advanced monitoring and control systems to optimise curing conditions.	



Focus	Context	Progress in 2024	Way Forward
b) Availing greener tobacco curing fuels	The tobacco curing process is a significant contributor to deforestation and greenhouse gas emissions, primarily due to the reliance on wood fuel. As a key player in tobacco research, it is essential to avail greener tobacco curing fuels that minimize the industry's ecological footprint while supporting the livelihoods of tobacco growers. The objectives of this research thrust are to: i. Identify and develop sustainable, environmentally friendly fuel alternatives for tobacco curing. ii. Evaluate the technical and economic feasibility of these alternatives. iii. Optimize curing processes using alternative fuels while maintaining tobacco quality. iv. Mitigate the environmental footprint of tobacco production while supporting the livelihoods of tobacco farmers.	The 2nd year trials of LPG- fuelled tobacco curing trials were completed, yielding promising results. Preliminary results indicate that 1.2kg of LPG per kg of tobacco, similar to those obtained in the first year and good tobacco leaf quality, and reduced curing time, underscoring LPG's viability as a sustainable alternative to traditional curing fuels. Feasibility study of biogas as a viable option for tobacco curing is continuing, with the acquisition and installation of a biogas vaporizer and de-sulphirizer on site. Evaluation of alternative tree species, specifically Khaya Nyasica and Albizia Procera as alternative fuelwood sources is also in progress with the establishment of a nursery.	i. i. A third year LPG curing trial to validate previous two years' results is crucial to provide robust data to support LPG as an alternative green fuel for tobacco curing. ii. Engagements with TIMB, policy and decision makers on the modalities of availing affordable LPG for tobacco curing are being worked out. iii. ii. Similarly, first year trials on the use of Biogas as an alternative green fuel in tobacco curing are set to commence in the 2025/26 growing season. iv. iii. Procurement of Khaya Nyasica and Albizia Procera fuelwood for evaluating curing potential set for the 2025/26 tobacco season. Similarly, Monitoring and management the growth and development of Khaya Nyasica and Albizia Procera set to continue.



Focus	Context	Progress in 2024	Way Forward
c) Improved agricultural water management	Agriculture, particularly tobacco production faces significant water management challenges due to increasing water scarcity, climate change, and the need to ensure food security while protecting the environment. Effective agricultural water management is crucial for optimizing tobacco production, reducing irrigation losses, and promoting sustainable agricultural practices. This research thrust aims to address these challenges by developing and evaluating efficient irrigation systems, investigating crop water requirements, and identifying sustainable water management practices that balance agricultural productivity with environmental protection. By achieving these objectives, the research will contribute to more sustainable and productive agricultural practices.	Kutsaga is currently investigating precision irrigation techniques for tobacco crops, focusing on tailoring water application to specific crop water requirements (CWR). This approach applies Drip irrigation methods, CropWAT 8.0 modelling software, and smart irrigation controllers that integrate real-time weather data and soil moisture sensors to dynamically adjust irrigation schedules. Preliminary findings indicate potential for improving water efficiency in tobacco production, contributing to more sustainable farming practices.	i. First year trials that are focused on tailoring water application to specific crop water requirements (CWR) are set to commence in the 2025/26 growing season.
d) Agricultural Innovations	The tobacco industry faces growing pressure to adopt sustainable practices, driven by concerns over environmental degradation, resource depletion, and social responsibility. To this end, innovative approaches are crucial to reduce the environmental footprint of tobacco farming while maintaining productivity.	A tobacco harvester and briquetting machine (i) to mechanize, and streamline the harvesting process and, (ii) convert biomass into eco-friendly fuels for tobacco curing respectively, have been designed. T he BE21 and Tsotso furnace, have been retrofitted into the Rocket and KCC1 barns respectively. This innovative approach aims to enhance tobacco leaf quality through efficient and sustainable curing practices.	Fabrication and testing of the tobacco harvester and briquette machine to gather preliminary results, and iteratively improve their design and performance is currently in progress. This will enable us to refine the technologies and ensure their effectiveness.



Focus	Context	Progress in 2024	Way Forward
e) Training and Extension Services	Kutsaga has conceptualized and developed a small-scale self-sustaining model tobacco farm (SSMF), that seeks to enhance the capacity of small-holder farmers in Zimbabwe to adapt to the emerging challenges. Built upon the strategic vision of the Tobacco Value Chain Transformation Plan (TVCTP), the SSMF is designed to simulate a typical small-scale farming operation, with a focus on sustainable practices for a family of five residing on the farm. This setup will enable demonstration and testing replicable solutions for rural farming communities.	Kutsaga 6-hectare model farm, which serves as a training and extension demo site for sustainable practices has commenced. The implementation of the model farm commenced in July 2024 at Kutsaga. The farm sits on 6-ha of land area, with 1-ha of Tobacco, 1-Ha of Sorghum, 1-ha of Maize, 0.5ha sweet-potatoes and 0.5 ha of groundnuts cultivation, 1-ha for eucalyptus plantation, 0.75-ha for pasture, while 0.25-ha is for the homestead.	Current efforts are focused on optimizing crop management, and securing partnerships for infrastructural development components.

Research Information and Publicity

Congress and Conference Presentations

1. Cooperation Center For Scientific Research Relative To Tobacco (CORESTA) CONGRESS EDINBURGH, SCOTLAND - UK					
	Title	Author	Date	Source	
1	Unveiling yield discrepancies: insights into tobacco farming in Zimbabwe	Mateva K.I, Mukoyi F, Dimbi S.; Magama	October 2024	Coresta.org	
2	Addressing challenges in tobacco production: insights from sustainable Practice	S Dimbi, B Mawire	October 2024	Coresta.org	
3	Sub-Group Efficacy of Biological and Eco-Friendly CPAs (BIO)	R Mavuka	October 2024	Coresta.org	
4	Establishing a Potato Virus Y prediction model using aphid population dynamics and related environmental conditions	C Chinheya, S Banana, Z Jazi, S Dimbi	October 2024	Coresta.org	



2. Scientific Publications					
	Title	Author	Date	Source	
1	Genetic diversity of Fusarium isolates infecting potato (Solanum tuberosum) and Tobacco (Nicotiana tabacum) crops in Zimbabwe	C. Chinheya, T Sagonda, C Karavina, M Marunda, J Jere, G Zvobgo, T Marwa, S Dimbi	March 2024	African Journal of Biotechnology, Vol 23(3)	
2	Cannabis policy reform in Zimbabwe should prioritise small-scale producers	C Rusenga, K Mateva, N Mwembe, F Magama, S Dimbi, G Klantschnig, N Carrier, S Howell	July 2024	Policy Bristol -policy briefing 154	
3	Nutsedge Weeds Management: Key Strategies for Tobacco Farmers	F Zinyandu, K Mateva, T Hove	December 2024	Zimpapers, Agriculture Journal	
4	Role of research in enhancing sustainable tobacco production practices; A Kutsaga Case Studies	S Dimbi	May 2024	World Tobacco Africa	
5	Management and rationalised fertilisation of improved Commercial production of potato mini-tubers	D. Chauruka, G. Zvobgo, J. Mugabe, K.I. Mateva1, R. Mavuka, F. Magama1 And S. Dimbi	December 2024	African Crop Science Journal, Vol. 32	
6	Rate of cross-pollination at different isolation distances between Grain Amaranth (Amaranthus hypochondriacus) and a Weedy relative in Zimbabwe	F Mukoyi et al	7 December 2024	Mdpi.com- agronomy journal.	

3. Dear	3. Dear growers					
	Title	Author	Date	Source		
1	Incidence of fusarium wilt-black shank disease complex: an emerging problem in tobacco production	C Karavina, C Chinheya, F Mukoyi	11 January 2024	Dear Grower		
2	Agrochemicals approved by the tobacco research board: 15 January 2024	C Nyamakura	15 January 2024	Dear Grower		
3	Potato Virus Y (PVY) Management in Tobacco	M. Marunda	January 2024	Online pamphlet		
4	The effect of delayed onset of rains on tobacco curing and leaf quality: Classic scenario of the 2023/24 growing season	R. Ruzane, K. Mateva, F Mukoyi, Makavene	8 February 2024	Dear Grower		
5	Sustainable root-knot nematode: Kutsaga tested and recommended nematicides on tobacco.	T. Mahere, S Dimbi	April 2024	Zimbabwe Tobacco Today		



6	Agrochemicals approved by the	T Mahere	19 April	Dear Grower
	tobacco research board: 19 April 2024		2024	
7	Further explanations & feedback from the 2024 circus meetings	S Dimbi	27 May 2024	Dear Grower
8	Role of research in enhancing sustainable tobacco farming practices	S Dimbi	May 2024	Zim Framing and Agribusiness
9	Stalk Distraction Reminder	C Nyamakura, C Chinheya	9 May 2024	Dear Grower
10	Kutsaga breeding and supplying enough seed to Kutsaga and beyond	Magama F	May 2024	Zim Farming and Agribusiness
11	Root-knot nematode management: Kutsaga-tested and recommended green-label nematicides on tobacco	T. Mahere, S Dimbi	May 2024	ADMA Magazine
12	Kutsaga: Research, innovation, breeding and sustainability stimulate agriculture transformation and development	Magama F	May 2024	Zim Farming and Agribusiness
13	Addendum to the dear grower - stalk destruction reminder	C Nyamakura, C Karavina	10 June 2024	Dear Grower
14	Farmers' concerns addressed	Dimbi S	July 2024	Zimbabwe Tobacco Today
15	Agrochemicals approved by the tobacco research board: 15 August 2024	T Mahere	15 August 2024	Dear Grower
16	Introducing Kutsaga Hydrofert: A solid solution for tobacco farmers	D. Rukuni, D Chinamo	23 August 2024	Dear Grower
17	Management of wireworms and dusty surface beetles in tobacco seedbeds and lands	C Nyamakura, C Chinheya	20 August 2024	Dear Grower
18	Expert Insights on Barn Design and Best Practices for Quality Leaf Production.	Mthulisi Ngwenya, Owen Mudadisi	September 2024	Dear Grower
19	Climate change exacerbates the challenge of tobacco pests and disease control	C Chinheya, S Dimbi and F Magama	September 2024	Zimbabwe Tobacco Today
20	Kutsaga Circus Meetings – an overview of Kutsaga tobacco seed breeding	Dimbi, S	Sept 2024	Zimbabwe Tobacco Today



21	Managing salt injury in tobacco seedbeds	Dimbi S	Sept 2024	Zimbabwe Tobacco Today
22	Planning Barn capacity	M Ngwenya O Mudadisi	October 2024	Dear Grower
23	Management of mealy bugs in tobacco	C Nyamakura, C Chinheya	November 2024	Dear Grower
24	Management of beetles in tobacco seedbeds and lands	C Nyamakura, C Karavina	November 2024	Dear Grower
25	Nutsedge Weeds Management: Key Strategies for Tobacco Farmers	Fungai Zinyandu, Tendai Hove, Kumbirai Mateva	Dec 2024	Zimbabwe Tobacco Today
26	Kutsaga Molecular Biology Laboratory: Your Ultimate Partner and solution in Plant Diagnostics.	G. Zvobgo, K Mateva	2024	Zim Farming & Agri Magazine vol 7,



1.6. TRAINING, EXTENSION & PUBLIC ENGAGEMENT (TEPE)

DIVISIONAL VISION

To be the focal contact point in training, extension and interactions between Kutsaga and its stakeholders.

MISSION

To facilitate the sharing of tobacco production information and, related products and services with stakeholders for sustainable and profitable tobacco production.

PURPOSE

To create an effective communication channel for technical information delivery between Kutsaga and its stakeholders.

DIVISIONAL THRUST

In its bid to fulfil its mandate, the Division engaged in the following activities:

- i. Advising and training tobacco growers on best management practices (BMPs) in the seedbed, lands, at harvesting, curing and grading, and any new research findings
- ii. Facilitating communication between Kutsaga, growers and tobacco merchants for effective problem resolution and to address new grower needs
- iii. Presentation and attendance of Field Days, conferences and workshops for Kutsaga, tobacco merchant and agrochemical companies organized events, and participate in the Ministry of Lands, Agriculture, Water, Fisheries and Rural Development (MLAFWRD) organized meetings, field days and conferences

Advocating for the use of Kutsaga Products such as Gromix, float trays, floatfert, Gnatbusters, Trichoderma, etc.

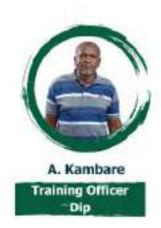


Team Structure



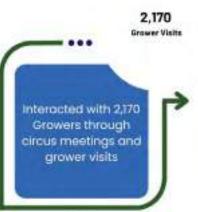
Dr. D Rukuni Head Of Division PhD, MSc, BSc

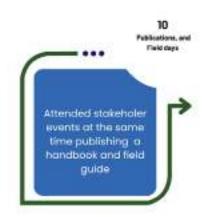


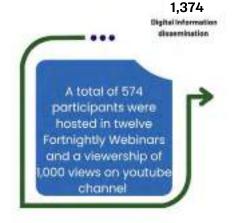


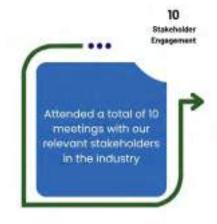
Summary of Outcomes

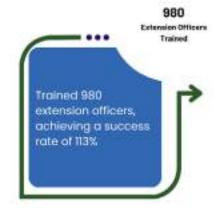














Focus	Context	Progress in 2024	Way Forward
Grower training	Zimbabwe's Tobacco Value Chain Transformation Plan (TVCTP) aims to transform the tobacco industry into a US\$5 billion industry by 2025. This will be achieved by focusing on increased production as a major component. The target annual production is 300 million kg of tobacco. Currently, the national average is 1.5 tonnes per hectare and the objective is to increase it to 2.5 tonnes per hectare. In this respect, Kutsaga has a major role in the training of growers in order to attain this national target. The primary objective of grower training is to equip tobacco farmers with the knowledge and skills necessary to adopt environmentally friendly practices. These practices aim to minimize ecological footprint, conserve resources, promote biodiversity, and ensure profitability. Through comprehensive training programs, tobacco growers receive updates on the latest production techniques. This includes sustainable agronomic practices, responsible use of crop protection agents, optimal variety selection, efficient reaping and curing technologies, and effective crop presentation for market sale. By providing growers with access to current best practices, training enables a culture of continuous improvement. This, in turn, enhances livelihoods while reducing production costs and minimizing environmental impact.	Grower training platforms included practical face to face training sessions for organized groups in the tobacco growing districts, field days and onstation calendar-based training at Kutsaga. In this regard, a total of 12 160 growers were trained in the period under review, and this was 135% of the set target of 9 000. The training covered all aspects of tobacco production from raising seedlings, planting, fertilizer application, sucker control, reaping, curing, grading, tree planting and marketing tips. The feedback from the growers was that some information was not readily available to them through the local Agricultural and Rural Advisory Services (ARDAS) of the MLAFWRD. Therefore, the thrust would be to engage a more aggressive approach in information dissemination. Growers were urged to subscribe to the Kutsaga WhatsApp Channel for updates on recent updates from Kutsaga on various tobacco production aspects. The number of extension officers trained was 980 and this was 113% of the set target of 866. Extension officers trained came from our partners who included contractor agronomists and the Agricultural and Rural Advisory Services (ARDAS) of the MLAFWRD and tobacco. Extensionists training covered all aspects of tobacco production from seedbeds, planting, pests and disease management, fertilizer application, sucker control, reaping, curing, grading, tree planting and marketing tips.	The future of grower training will see more use of improved technology in training tools such as webinars, radio broadcasts, television presentations and a lot more digital media outlets. In the coming year, more emphasis will be placed on digital media training sessions and recorded programmes to make training sessions more time-flexible to fit the grower time management needs, and meet the requirements of the over 180 000 growers nationwide.



Focus	Context	Progress in 2024	Way Forward
Grower training		Training sessions for the extension officers surpassed the desired numbers and the officers were satisfied with the training, however, they needed more resources to improve their outreach to growers. Growers were also informed that a new updated handbook will be available in 2025 after raising concerns on out of date chemical control active ingredients, however, they were also made aware of the circulation of a quarterly Dear Grower on approved agrochemicals.	
		Also, of concern to growers was, the increased incidence of nematodes due to continuous tobacco cropping. Kutsaga was addressing this through nematode resistant varieties and recommending appropriate green nematicides.	
		The float system of seedling production continues to face adoption problems due the Pythium infection, salt damage and fungus gnat problems, leading to growers not getting enough seedlings to plant due to mortality. Kutsaga has stepped up efforts to restore confidence in the system but assisting growers in the seedbeds and considerable success has been scored with some growers who had abandoned the technology returning to its use.	
		More growers were water planting their tobacco early and not waiting for the rains, however, the handicap was the availability of mechanization resources for this practice.	

Focus	Context	Progress in 2024	Way Forward
Extension Services	The primary objective of extension services is to disseminate vital information to growers through a range of channels, from traditional face-to-face interactions to modern digital platforms. This facilitates the transfer of research-generated information and technologies to the intended beneficiaries, bridging the gap between research and practice. Kutsaga provides growers with tailored information on tobacco production technologies, including how to select suitable varieties for their areas, available complementary agro-based products, and innovative crop protection agents.	As part of its extension services, Kutsaga employed innovative methods such as 'circus meetings', where the team travelled to various tobacco-growing districts. These interactive gatherings brought together growers and Kutsaga experts to discuss farm activities, share best practices, and disseminate current research findings. A total of 1 942 small-scale and 163 large scale tobacco growers were interacted with during these circus meetings. Information shared during the meetings covered variety choice, seedling production, pests and diseases, soil health and general tobacco agronomy. Kutsaga expanded its outreach efforts through digital platforms, establishing an official tobacco growing tips WhatsApp channel that attracted over 800 followers by December 2024.	In the future, there will be continuation of circus meetings for both small- and large-scale growers. Provisions will be made to record these interaction sessions so that growers who miss certain sessions can access them at a later date.



Focus	Context	Progress in 2024	Way For- ward
Extension Services	Moreover, the platform emphasizes the critical importance of ensuring that tobacco production is done in a sustainable manner. The ultimate objective is to foster change in the methods of tobacco production in line with current market trends and demands to protect the environment. Because tobacco is a highly regulated product, it is imperative that Zimbabwean growers keep on track with profitable and safe tobacco production practices in line with the international standards and markets which consume more than 98% of Zimbabwean tobacco. The emphasis has been on increasing productivity by using new varieties, improved field production technology, crop rotations to maintain good soil health and reduce pests and diseases, sustainable curing practices, and all this is meant to foster profitability and sustainability in tobacco production. Furthermore, Kutsaga urges growers to plant trees and incorporate renewable energy sources such as solar energy in tobacco curing which factors are considered paramount for sustainability.	This channel serves as a vital tool for disseminating timely alerts on tobacco production issues and sharing relevant updates with growers, proving to be an effective means of engagement. Moreover, the Kutsaga team hosted 12 fortnightly webinars, drawing in 574 attendees. To extend the reach of this knowledge-sharing initiative, the webinars were recorded and uploaded to YouTube, garnering over 1,000 views by year's end. The team conducted extensive outreach and advisory services to support tobacco growers. Through these efforts, the organization trained over 10,444 growers through WhatsApp discussion groups. Additionally, Kutsaga's experts conducted advisory visits to 65 tobacco growers in various districts, addressing specific challenges and concerns. The organization also engaged with growers through electronic platforms, providing timely guidance and support. The team conducted targeted visits to 65 tobacco growers across various districts, providing personalized guidance and support. These visits were tailored to address specific challenges, with some focused on resolving peculiar cases such as disease outbreaks or herbicide damage. Additionally, the team engaged with numerous growers through electronic platforms, ensuring broad outreach and timely assistance. During the seedbed period, Kutsaga's team collaborated with agronomists to enhance the quality of Gromix and other products. Meanwhile, growers utilizing the float system encountered challenges such as salt buildup, fungus gnats, Rhizoctonia, Pythium, algae, and cold and chemical injury. Kutsaga's experts provided targeted guidance to address these issues.	Webinars will be intensified and the format changed to make them group presentation sessions and also recorded for flexible viewing by growers not able to attend for various reasons.



Focus	Context	Progress in 2024	Way For- ward
		The organization remains a strong advocate for the float system, promoting its potential to boost profitability and sustainability in tobacco production over traditional seedbed methods.	
		In the field, tobacco growers faced various challenges, including fungal diseases such as white mold, Alternaria, Angular leaf spot, Granville wilt, Black Shank, Rhizoctonia, and Fusarium. Additionally, emerging pests like scale insects and red spider mites were reported. To address these issues, the Kutsaga plant health experts team was consulted, providing expert advice and guidance to help growers mitigate these problems.	
		Agronomic challenges faced by tobacco growers included herbicide and pesticide phytotoxicity, as well as fertilizer leaching due to excessive rainfall in certain districts. Furthermore, post-harvest issues arose, such as curing disorders, poor conditioning, and grading problems. To address these concerns, Kutsaga provided timely guidance and support through various channels, including "Dear Grower" articles, WhatsApp, and other digital platforms.	
		The past season saw a notable shift in popularity towards new tobacco varieties, particularly K RK76, K RK74, K RK70, and K RK73. These varieties emerged as viable replacements for K RK66 and K RK26R, respectively. Kutsaga actively promoted the adoption of these new varieties among both large- and small-scale tobacco growers. Contractors played a supportive role in this effort, as they typically purchase seeds for their growers. Given the ongoing challenge of nematodes and limited crop rotation options, Kutsaga emphasized the importance of using resistant varieties to mitigate this issue	
		During the year, Kutsaga updated several tobacco production information dissemination channels to ensure growers had access to the latest knowledge and best practices.	
		One notable update was the finalization of a new 75th anniversary edition of the Flue-Cured Tobacco Production Recommendations handbook, slated for publication in 2025. Additionally, the Flue-Cured Tobacco Production Field Guide is currently under review and is expected to be published in 2025. A new training manual for tobacco growers is also being compiled to provide comprehensive guidance and support.	
		Kutsaga's experts also delivered presentations on critical topics, including a webinar titled "Tips on curing tobacco in a drought year." Furthermore, a "Dear Grower" article was circulated, introducing Kutsaga Hydrofert as a solid solution for tobacco farmers. These initiatives demonstrate Kutsaga's commitment to empowering tobacco growers with the knowledge and tools necessary to succeed in an ever-changing industry.	



Focus	Context	Progress in 2024	Way Forward
Public Engagement	This activity intends to create a network of stakeholders and align their interests with those of Kutsaga as entailed in the TVCTP. This creates a continuous engagement process for implementing Kutsaga's strategic plans and improve service delivery in line with its mandate. The result is creating a strong relationship between Kutsaga and its stakeholders, that allows for free interaction and feedback on various issues affecting growers and the trade. With strong stakeholder buyin, there will be alignment of service delivery and product expectations and a reduction in challenges encountered by growers, or complaints from stakeholders.	During the review period, Kutsaga collaborated extensively with the tobacco industry through its partnership with the Tobacco Leaf Exporters Association of Zimbabwe. Regular interactions, including meetings and workshops, were conducted to maintain a strong connection with the industry and promptly address the needs of tobacco farmers and exporters. Additionally, the Kutsaga team actively participated in the National Zimbabwe Agriculture Society (ZAS) events, including Judges' panel meetings and the awards ceremony. As a recognized authority on tobacco, Kutsaga is a permanent member of the competition panel, contributing its expertise on an annual basis. Furthermore, the team showcased its presence at the annual ZAS agricultural show in Harare, as well as several provincial shows. Kutsaga played host to several international visitors, fostering global collaboration and enhancing its international presence. Notably, the organization welcomed two staff members from Italy's Agricola, promoting cross-cultural exchange and cooperation. Furthermore, a delegation from the Democratic Republic of Congo visited Kutsaga to engage in discussions on medicinal cannabis production, exploring opportunities for knowledge sharing and partnership. Kutsaga's outreach efforts extended to various stakeholder events, fostering engagement and knowledge sharing with key players in the agriculture and tobacco industries. One such event was the Sustainable Afforestation Association's (SAA) wood harvest launch at Ruia Ranch in Mvurwi. The organization also participated in the Tobacco Leaf Exporters Association of Zimbabwe (TLEAZ) organized soil health field day in Trelawney. This event provided a platform for discussing best practices in soil health management, a critical aspect of tobacco production.	Kutsaga will continue to engage with the several stakeholders in order to keep abreast with the needs of the industry. This interaction will create a more united industry approach that tackles challenges as a team to enable quick resolutions to be made.



Focus	Context	Progress in 2024	Way For- ward
Public Engagement		Additionally, Kutsaga attended three Bayer field During the review period, Kutsaga collaborated days held in Harare, Muzarabani, and Marondera. These events showcased the latest advancements in agricultural technology and practices, offering valuable insights for stakeholders. Kutsaga's experts also shared their knowledge through presentations, including an agronomy session at Omnia Fertilizers' field day in Beatrice. This presentation highlighted the importance of effective agronomic practices in optimizing crop yields and quality. Finally, Kutsaga participated in the two-day World Tobacco Africa Conference at Rainbow Towers in Harare. This premier event brought together industry leaders, experts, and stakeholders to discuss the latest trends, challenges, and opportunities in the tobacco sector.	





2. PRODUCTION AND OPERATIONS SECTOR

Executive Director Summary



As the Executive Director of Production and Operations, I am excited to share our mission, vision, and goals. This introduction highlights our remarkable teams, achievements, challenges, and strategic goals, all framed by our commitment to sustainability.

The Production & Operations Sector, established in April 2024, consists of five divisions, namely Seed Production, Manufacturing, Field Services, Horticultural production and Materials and Services. This new sector arose from a strategic restructuring initiative designed to enhance Kutsaga's commercial production while ensuring Kutsaga's set revenue objectives are achieved. We are committed to developing medium and long-term production plans that ensure availability of adequate quality products and services through sustainable production practices whilst addressing the critical elements of the National Development Strategy 1 (NDS1) in pursuit of achieving an upper-middle-income status by 2030.

Mrs Rhoda Mavuka

Executive Director: Production and Operations



Vision

To be a leader in production efficiency and operational excellence, driving sustainable growth for our organization. We strive to create innovative solutions that enhance the quality of our products while minimizing waste and maximizing resource utilization. Each division plays a crucial role in our overall strategy and operational effectiveness to generate revenue for Kutsaga.

Mission

To deliver exceptional value through streamlined operations, fostering collaboration among our teams, and leveraging cutting-edge technologies to meet and exceed our stakeholders' expectations.

Core Focus

We have established several core focus points to keep us in line with the national blueprints of ensuring food security, reducing imports, diversifying agricultural production and improving rural livelihoods. These will be achieved through the Agricultural and Food Systems Transformation Strategy (AFSTS), the National Agriculture Policy Framework (NAPF) and the Zimbabwe Agriculture Investment Plan (ZAIP).

Our core focus areas to achieve Kutsaga's vision and mission are:

Enhance Operational Efficiency: Streamline processes to reduce lead times and costs.

Foster Innovation: Encourage innovative practices to boost productivity.

Sustainability: Integrate sustainable practices to reduce environmental impact.

Talent Development: Invest in workforce training and skill enhancement.

Customer Satisfaction: Ensure products and services meet customer needs.

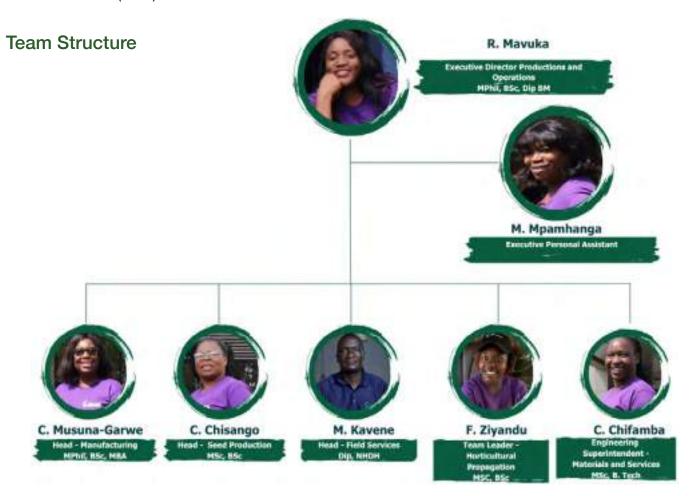
Food Security: Promote self-sufficiency and resilience to weather challenges.

Value Addition: Increase exports and reduce reliance on imports.

Agricultural Mechanization: Support agriculture through engineering and irrigation services.

Water Management: Implement effective water resource policies.

Inclusivity and Adaptation: Focus on gender sensitivity, youth participation, and climate change adaptation.





2.1. SEED PRODUCTION DIVISION (SP)

Vision

To be a leading producer of high quality seed.

Mission

To produce and stock adequate high-quality seed of all Kutsaga tobacco, grass and seed potato varieties.

Thrust

To contribute to self-sufficiently in certified tobacco seed and seed potato production.



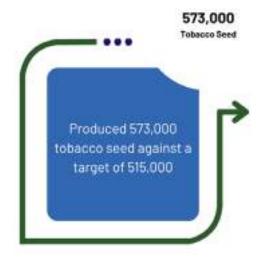
Team Structure

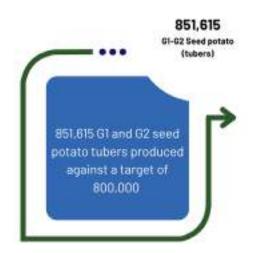


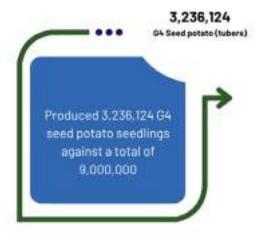


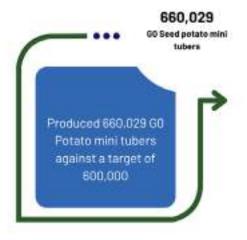


Summary of Outcomes











2.1.1 Tobacco Seed Project

2.1.1.1 Introduction

The Kutsaga Seed Association continued to ensure provision of adequate tobacco seed for the tobacco industry in support of the Tobacco Tobacco Value Chain Transformation Plan (TVCTP) which aims to increase tobacco production to 300 million kgs by year 2025 and earn the country US\$5 billion.

2.1.1.2 Output

In the year under review a total of 753 kg tobacco seed was produced to add to the five-year strategic cover supply for the nation.





Fig 2.1.1: Pollinating team (left) and monitoring seed capsule development (right)



2.1.1.3 Quality Assurance

Kutsaga seed testing laboratory is internationally accredited to the International Seed Testing Association (ISTA). Locally, the Seed and Plant Quarantine Services of Ministry of Lands, Agriculture, Fisheries Water and Rural development (MLAFWARD) inspected the crops and deemed them to meet the required seed production standards. Quality tests of the produced seed were also conducted by Seed Services and the seed testing laboratory (Fig 2.1.1.3). Routine quality tests of the seed in stock were similarly conducted. In addition, the seed testing laboratory was successfully audited by Seed Services and the A- licence retained.



Fig 2.1.1.3: Field and laboratory seed quality assurance

2.1.2 Seed Potato Project

The seed potato project was embarked upon when the Board's mandate was expanded by the Minister of Lands, Agriculture, Fisheries, Water and Rural Development. While Zimbabwe has a well-established history of potato production, traditionally the demand of seed potato in Zimbabwe outstrips supply and is estimated at 20% of national demand. In addition, with potato having been declared a strategic crop the Zimbabwe Potato Micropropagation Association continued it efforts to produce seed potato for the continued growth of the potato value chain.

In 2024 plans were to produce 675 tonnes of seed potato in response to the nation's quest to be self-sufficient in seed potato and ultimately improve food security at household level. The seed potato project at Kutsaga in its 4th year has seen a remarkable increase in the seed potato produced in comparison to the year 2023. This is attributed to continuous training of seed potato growers and remodelling from engagement of many small growers to Joint Ventures with Government institutions and large-scale growers who can grow a minimum of 10 ha of the seed crops.

Fig 2.1.2: Checking potato sprouting quality





2.1.2.2 G0 Mini-tuber Production

Kutsaga is actively involved in the production of Irish potato foundation seed to supply quality seed to potato growers in Zimbabwe. From the plantlets that were produced in the tissue culture lab, a total of 112,000 plantlets were successfully transplanted into greenhouses for G0 mini-tuber production (Fig 2.1.2.2).

This initiative resulted in the production of 660,049 mini-tubers against a target of 600,000 mini-tubers, surpassing the set target by 10% (Fig 2.1.2.3)). This achievement demonstrates the organization's capacity to produce high-quality seed to meet market demand and support the local potato value chain.

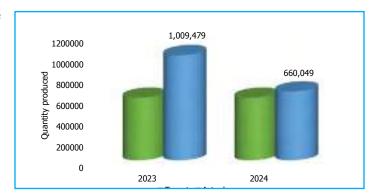


Fig 2.1.2.3: G0 mini-tuber production trend 2023 and 2024



2.1.2.3 G4 Seed Output

Against a target of 9 million seed potato tubers, there was a 17% increase in seed potato produced in 2024 in comparison to the year 2023 (Fig 2.1.2.4).

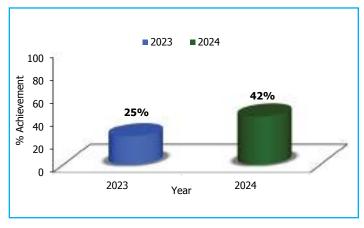


Fig 2.1.2.4: Seed potato project performance over two seasons

2.2.4 Training

In the course of the year the seed potato Growers were trained on crop agronomy and required standards for seed potato production.

2.2.5 Challenges and Mitigations

The main challenge was low yields from inexperienced growers and too many small hectarages which were difficult to monitor closely. To mitigate this, a strategy was formulated to change the model and engage

large scale commercial growers as well as embarking on Joint Venture projects with Government institutions who can grow the seed crops on large hectarages. By so doing agronomists have fewer sites to monitor and can effectively train the growers and their staff.

Lack of funding hampers the growth of the project. Seed potato input costs are high and there is also need for specific infrastructure such as cold chain facilities. Kutsaga has invested in some equipment but this is not sufficient. To solve this ZPMA is in the process of lobbying the Ministry of Lands, Agriculture, Fisheries, Water and Rural Development and Treasury for funding. In addition, alternative financing mechanisms are also being explored.





2.2. MANUFACTURING DIVISION

Vision and Mission

The Manufacturing Division is a new division, birthed out of the restructuring strategy by the institution, envisaged at making the institution agile and more responsive to customer needs. It's made up of the Trichoderma Production unit (also incorporating Gnatbusters production), the Expanded polystyrene float tray production section, the Kutsaga GromixUltra production section, and the four off stations GromixPlus production sites (Charter Estates, Nyanga Pine, Sheba Estates and Cashel Valley) in Nyanga and Chimanimani.

Mandate

To efficiently and cost effectively produce GromixPlus, GromixUltra, Float trays, Trichoderma and Kutsaga Gnatbusters for the growers and to generate revenue for the board. This mandate is derived from the institution pay off line, for productivity, for sustainability.

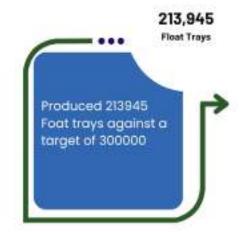


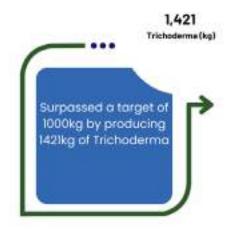
Team structure

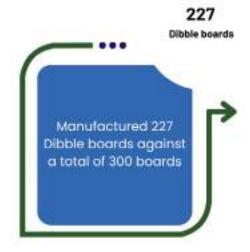


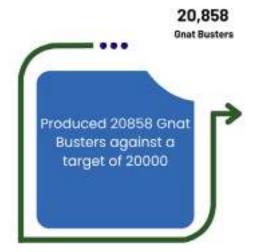


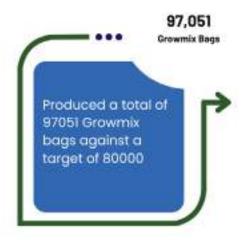
Summary of Outcomes













Production Performance

2.2.1.1 Growmix Production

The Gromix production unit centres around producing a high-quality growing medium that optimizes plant growth and health. The focus remains on providing quality products and ensuring product availability to the grower is timeous. (Fig 2.2.1.1a & b)



Fig 2.2.1.1a: Packaged GromixUltra

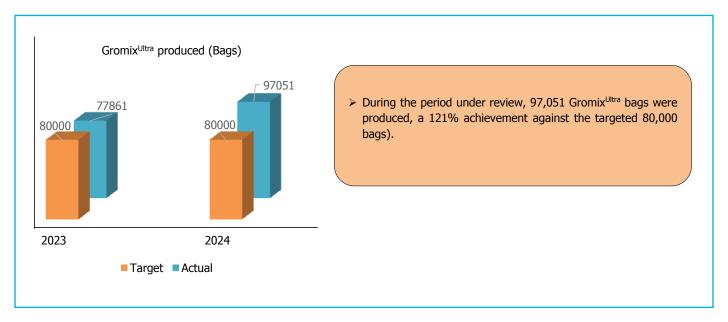


Fig 2.2.1.1b: GromixUltra production for the year 2023 and 2024



2.2.1.1.1 Quality control

To improve the quality of the GromixUltra at Kutsaga, a production shed was constructed (Fig. 2.2.1.1.1). This reduced contamination increased efficiency and productivity as well as the ambience of this production site. Moreover, a heat treatment process has been implemented to improve the quality of the product, killing pathogens that had affected the performance of the media during seedlings production in the float trays.



Fig 2.2.1.1.1: The new Gromix shed at Kutsaga

2.2.1.2 Float Tray Production

The facility is dedicated to making high quality trays for seedlings production thus in support of sustainable production and horticulture recovery growth plan, tobacco value chain transition process and food security. In the reporting, 213,945 trays were produced against a target of 300,000 (Fig. 2.2.1.2a & b). The target was not met because of delayed arrival of raw material from Europe and also breakdowns cause by old software that control the pre-expander machine which was later resolved.

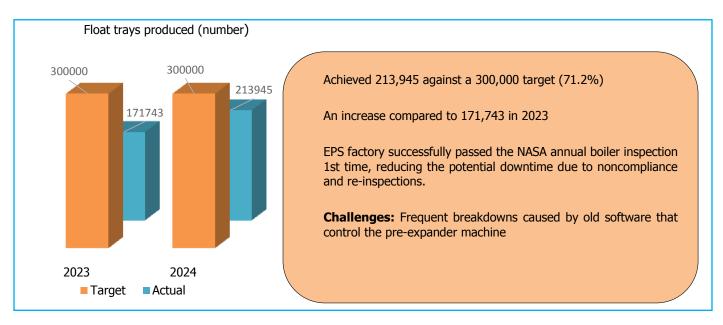


Fig 2.2.1.2a: Float tray production for the year 2023 and 2024





Fig 2.2.1.2b: Kutsaga float trays in storage

1. Insights from the benchmarking trip (South Africa)

In order to explore alternative materials in float tray production and Gromix automation, a visit to South Africa was undertaken by the team to appreciate the plastic tray manufacturing plant and the Gromix production processes. Information gleaned from this will be used to benchmark the modernization of the EPS float tray manufacturing plan and automation of the GromixUltra production process.



Fig 2.2.1.2.1a: A Kutsaga artisan being shown how a plastic tray mould machine works (left) and a modern float tray plant (right)







Fig 2.2.1.2.1b: Two Kutsaga officers discussing plastic tray making technology (left) and Automation of GromixPlus production at a plant in South Africa (right)

2.2.1.3 Trichoderma and Gnatbusters Production

Trichoderma (Kutsaga T77) is a soil-dwelling fungus microbe formulation developed by Kutsaga, and is renowned for its biocontrol properties against plant pathogens. It effectively suppresses pathogens such as Fusarium, Pythium, and Rhizoctonia by producing antibiotics and enzymes, while also enhancing root growth and nutrient uptake, increasing resistance to abiotic stresses like drought and salinity, and boosting crop yield, hence making it a valuable asset in agriculture. Trichoderma production focuses on cultivating high-potency strains that enhance soil health, improve nutrient uptake, and promote disease resistance in plants.

Gnatbusters are physical non-toxic yellow traps designed to monitor and control the population of fungus gnats, white flies, and aphids which reduce productivity and quality of seedlings.

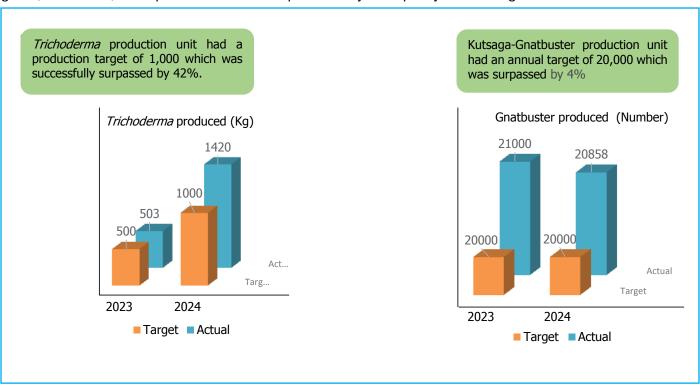


Fig 2.2.1.3a: Trichoderma production and Gnatbuster for the year 2023 and 2024



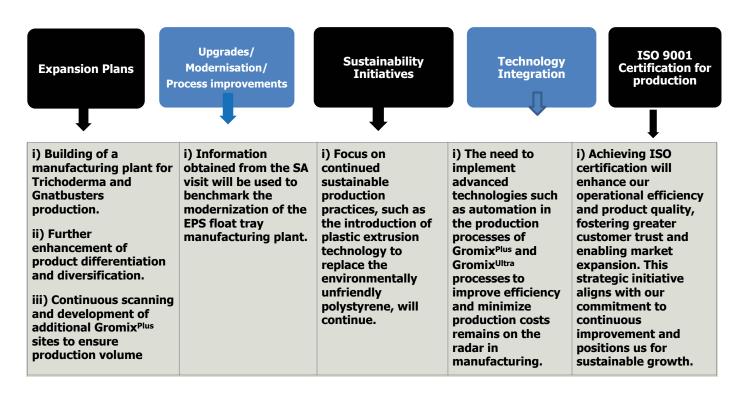
Recognizing the importance of compliance with regulatory standards, product registration was completed thus enhancing the product marketability and building of consumer trust. Additionally, a new biodegradable packaging was introduced with an embedded label, reflecting a commitment to sustainability.



Fig 2.3.1.3b: A Trichoderma registration certificate (left); Trichoderma packaged in biodegradable material (right)

The products GromixPlus, GromixUltra, Float trays, Trichoderma and Gnatbusters, contribute towards the Sustainable Development Goal #2 on food security and nutrition as well as the Tobacco Value Chain Transformation Plan which seeks to increase production of tobacco to 300 million kilogrammes of leaf annually.

2.2.1.4 Future Outlook





2.3. FIELD SERVICES DIVISION

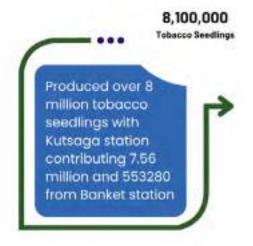
The Field Services Division is mandated to generate revenue for the board by producing tobacco, eucalyptus, maize and seed potato commercial crops. The division comprises three stations namely Kutsaga, Banket and Oriental.

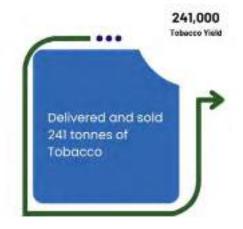
Team Structure

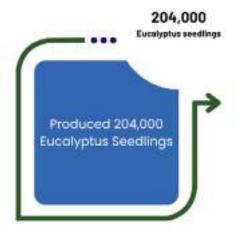


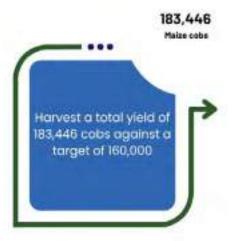


Summary of Outcomes









2.3.1 Rainfall

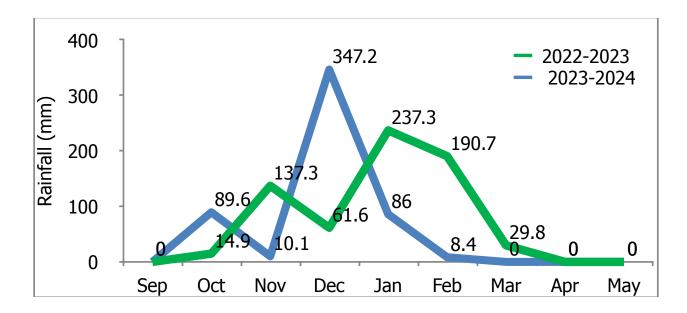


Fig 2.3.1: Rainfall received in 2022-2023 and 2023-2024 for Kutsaga Station



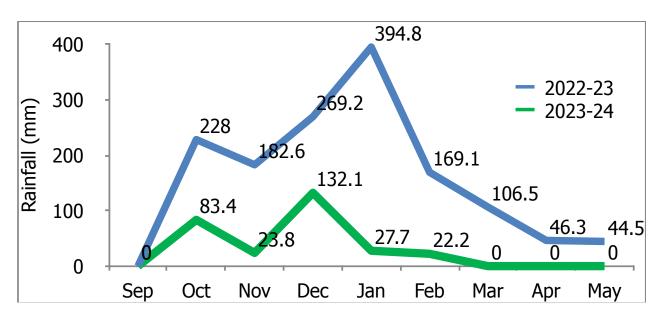


Fig 2.3.2: Rainfall received in 2022-2023 and 2023-2024 for Banket Station

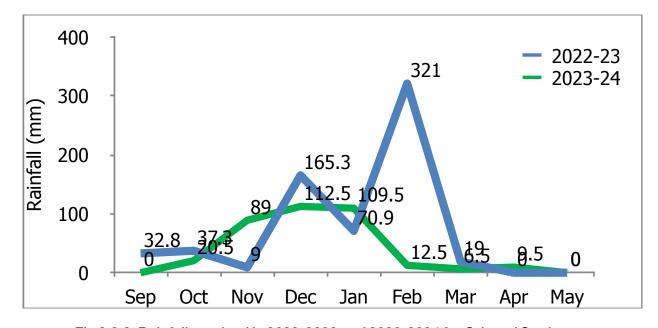
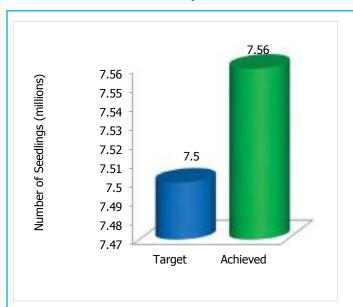


Fig 2.3.3: Rainfall received in 2022-2023 and 2023-2024 for Oriental Station



Fig 2.3.3 shows total rainfall received during the season 2022-2023 and 2023- 2024. Kutsaga farm received 541 mm which was 63.68 % of the long-term average of 850 mm. This was lower than 671.6 mm received in the same period in 2022 - 2023. There was a delay on the onset of rains with 14.9 mm received in November and a substantial amount of 347 mm received in December after which 8.4 mm was received in March. Poor quality rainfall had significant impact on production plans, such as late establishment and consequently reduction in yields. Fig 2.3.2 shows total rainfall received during the season 2022-2023 and 2023- 2024 at Banket station. Substantial amount of rainfall was received in the 2022- 2023 season (1022.2 mm) compared to the 2023-2024 season (502.8 mm). The 2023- 2024 season was characterized by very low rainfall which was 62.8% of the long-term average of 800 mm. This was attributed to the El Nino induced drought and resulted in severe crop failure. During the 2022-2023 season Oriental station received a total of 655.3mm compared to 360 mm received in 2023 -2024. Fig 2.3.3 shows total rainfall received during the season 2022-2023 and 2023- 2024. The 2023- 2024 season was characterized by very low rainfall which was 62.8% of the long-term average of 650 mm. This resulted in reduction in the yields of crops and the quality of seed potato tubers.

2.3.2 Commercial Projects



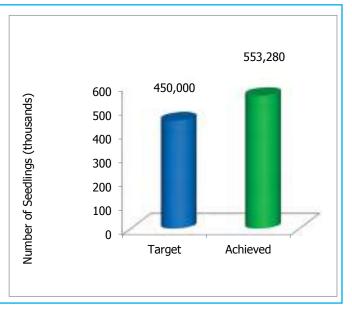


Fig: 2.3.2.1: Commercial tobacco seedlings produced in 2023 and 2024 for Kutsaga Station

Fig: 2.3.2.2: Commercial tobacco seedlings produced in 2023 and 2024 for Banket Station

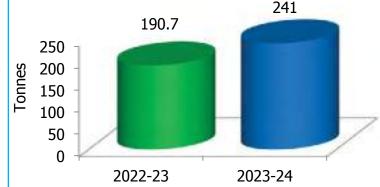
2.3.2.1 Commercial Tobacco Seedlings

A total of 8,113,280 of flue cured commercial tobacco seedlings were produced at Kutsaga and Banket Station against a set target of 7.9 million seedlings, this is 102.7% achievement. The seedlings were produced for revenue generation for the Board and to support growers who were unable to establish their own seedbeds. Of this, Kutsaga farm produced a total of 7.56 million seedlings (108% achievement) and

0.553 million seedlings were produced at Banket station and this is 122% achievement.

2.3.2.2 Commercial Tobacco Crop

For the 2023/24 season, a total of 76 ha of commercial tobacco were established. From this hectarage, 241 tonnes were produced and sold at an average price of \$3.65 per kg generating revenue for Board. Further the revenue was utilized to purchase critical equipment.





2.3.2.3 Seed Potato Production

A total of 520,536 tubers were produced against a set target of 843,370 tubers. This was 61.7% achievement. Of this Banket Station produced 329 723 against a target of 331,370 tubers and Oriental Station produced 190 808 against a set target of 512 000 tubers. Failure to meet the set target was mainly attributed to severe attack by Potato Tuber Moth at harvesting. The performance of the seed potato crop was negatively affected by the poor quality of the season. Extended power cuts hampered timeous irrigation cycles and caused low moisture at the establishment. Banket station has been developed as a dedicated centre for seed potato production during the period under review.

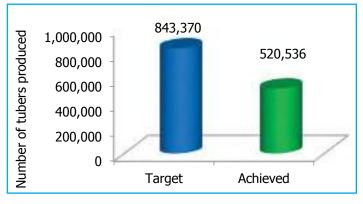


Fig 2.3.2.3 : Number of seed potato tubers produced in 2024

2.3.2.4 Commercial Maize Project

The target was to produce 70 tonnes of maize grain from 10 hectares however the project realized 3.3 tonnes of maize grain as a result of El Nino induced drought. The crop could not be salvaged by irrigating as the station was under intense load shedding and the generator could not cope to irrigate the entire crop.

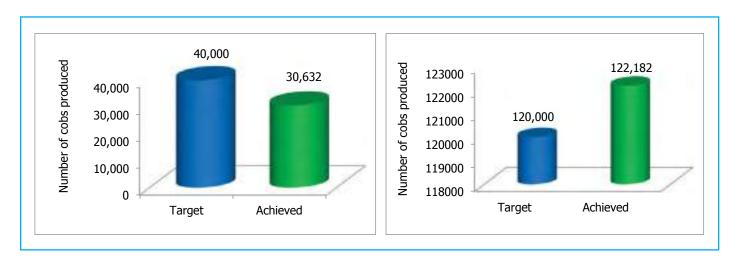


Fig 2.3.2.5 Graph showing number of cobs produced vs. target for Oriental Station (left) & Banket Station (right)

During this period Banket and Oriental station produced and sold a total of 152,814 cobs of green mealies against set target of 160,000 cobs. At Banket station a total of 122, 182 cobs were produced and sold, this translated to 101.8% achievement For Oriental station a total of 30,632 cobs were produced against a set target of 40,000 cobs and this translated to a 77% achievement. Failure to meet targets was due to power cuts that led to inadequate supply of irrigation water to complete the planned irrigation cycle.



2.3.2.5 Capital items acquired



Fig 2.3.2.7 Some of the capital items acquired

In an effort to capitalize Kutsaga Station 3 new tractors, dam scooper, boom sprayer, Monosem double row ridger, lime spreader, 5000 lt water bowser, travel irrigator and two universal trolley trailers were acquired. The tunnel barn was also fitted with new cromadec ceiling sealed with foam for curing efficiency improvement. For Banket Station a potato digger, boom sprayer (600L), tractor and borehole solarization were acquired



during 2024 in order to improve the efficiency and productivity of the farm. For Oriental Station, the challenge of limited water storage from portable bladders (100 m3) was addressed through the construction of a new earth reservoir (2000m3) lined by a 500-micron geomembrane. The three boreholes at the station including the solarized boreholes sustained a two-and-half-hectare crop of green mealies and seed potato crop during persistent power outages.

2.3.2.6 Corporate Social Responsibility

A total of 12 inmates and two officers from the Zimbabwe Prisons and Correctional services based at the station were trained in various aspects of tobacco production and graduated during the period under review. However, the Zimbabwe Prisons and Correctional Services are set to relocate from Banket Station in April 2025.





Vision

To be a premier supplier of superior micro-propagated plantlets and seedlings, playing a vital role in advancing agricultural development and preserving biodiversity.

Mission

To produce and distribute high-quality, disease-free planting material to farmers, leveraging innovative tissue culture techniques ensuring sustainability and agricultural productivity.

Goals

To offer plant tissue culture and micropropagation and seedling production services (pathogen, disease free planting material) for agricultural productivity.

To carry out optimization of tissue culture protocols for selected crop species.

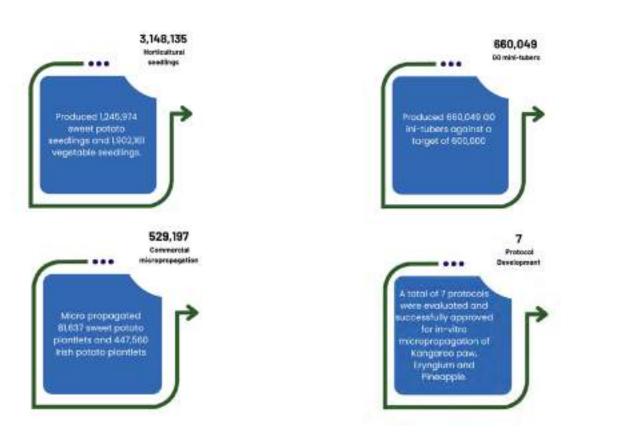
Objectives

- Determine high-value crops that have the potential to generate revenue for the board and implement their commercial micro-propagation.
- Produce good quality seedlings and G0 mini-tubers.
- Enhance laboratory infrastructure by acquiring new equipment that improves efficiency and aligns with new crops.





Summary of Outcomes





2.4.1 Horticulture Plant Propagation Unit Projects

2.4.2.1 Sweet potato seedling production

As part of the Presidential Rural Development Program, Kutsaga has been actively involved in the production and distribution of disease and virus-free sweet potato seedlings (Fig 2.4.1) across Zimbabwe. Since 2022, Kutsaga has distributed over 3 million seedlings benefiting 60,000 households across all the provinces in the nation.

Kutsaga produces five elite sweet potato varieties which include Chingovha and German II (white-fleshed), Alisha, Beauregard and Delvia (biofortified orange-fleshed) varieties rich in vitamin A.

In 2024 In 2024, Kutsaga produced 1,245,974 seedlings (Fig 2.4.2), surpassing the target of 1,000,000 seedlings and achieving an 8% increase compared (Fig 2.4.2), surpassing the target of 1,000,000 seedlings and achieving an 8% increase compared to the previous year.



Fig 2.4.1: Sweet potato sweet seedlings at 3 weeks after nodal cutting



2.4.2 Horticultural seedling production

In support of the Horticulture Recovery and Growth Plan and the National Development Strategy (NDS1) vision of becoming an upper-middleincome economy by 2030, Kutsaga has significantly contributed to this goal by supplying a total of 1,902,161 different vegetable seedlings (Fig 2.4.4) to farmers across Zimbabwe against a target of 2,000,000, resulting in a 24.8% increase in production in comparison with the previous year (Fig 2.4.3). This initiative plays a crucial role in promoting food security, increasing agricultural productivity and empowering farmers to enhance their livelihoods.

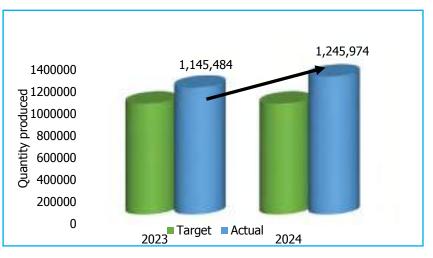
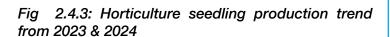


Fig 2.4.2. Sweet potato seedlings production trend from 2023 & 2024

1200000

1000000

1,902,161







2.4.3 Commercial Micropropagation



Fig 2.4.5: Micropropagation of Irish potato in the laboratory.

The agricultural sector continues to evolve, and plant tissue culture stands out as a key plant propagation method, enabling the efficient production of high-quality, disease-free plantlets on a commercial scale. Kutsaga takes great pride in being at the forefront of this transformative technology, by producing sterile plant material for both local and external farmers. The state-of-the-art laboratory at Kutsaga has a growth room that can accommodate 1, 000, 000 plantlets. As a commercial laboratory, the aim is focused on enhancing sustainable agricultural practices and advancing the field of plant biotechnology. The most important commercial plants produced in the laboratory are sweet potato plantlets and Irish potato (Fig 2.4.5). Research has successfully micro-propagated a range of plant species, including Eryngium and Kangaroo paw.

2.4.3.1 Laboratory Production

The tissue culture laboratory has focused on the micropropagation of Irish potatoes and sweet potatoes as its primary activity. In 2024, the laboratory achieved a significant milestone by micro propagating 81,637 different sweet potato plantlets varieties, such as Delvia, German II, Brondal, Chingovha, M. Beauregard, SA Beauregard, Alisha (Fig 2.4.6) as well as, 447,560 Irish potato plantlets (Fig 2.4.7). This accomplishment reflects the laboratory's technical capacity and commitment to agricultural innovation, as the mass production of disease-free, high-quality planting material contributes to enhanced food security, improved crop yields and better nutrition to the nation.



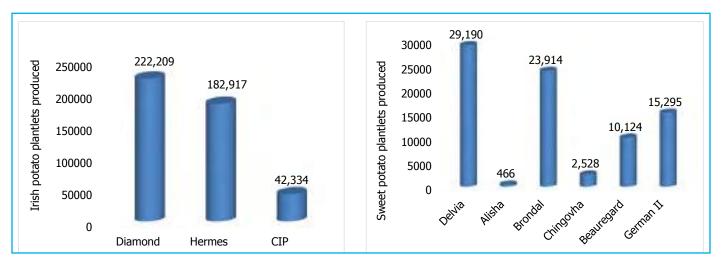


Fig 2.4.6: Irish potato tissue culture plantlets 2024 production.

Fig 2.4.7: Sweet potato tissue culture plantlets 2024 production.

Kangroo Paw

- »Two distinct protocols were evaluated during the year.
- »One (1) protocol gave a favorable outcome and can successfully be used invitro
- »A significant challenge during the year was elevated contamination rates due to the plant material $\mathbf{0}$



Eryringium

- »Sixteen (16) protocols for micropropagation were evaluated, comprising eight (8) for rooting and another eight (8) for optimization.
- »From the 16 protocols, results indicate that Eryngium can be successfully initiated in-vitro using two (2) distinct protocols, and rooted in-vitro through three (3) different protocols.



Pineapple

- »Two distinct plant parts were examined for initiation, the fruit and shoot.
- »Six micropropagation protocols were evaluated. From the protocols tested, one (1) was success and can be ised for micropropagation in-vitro.



Fig 2.4.8a: Successfully micro propagated Kangaroo paw plantlet. Fig 2.4.8b: Eryngium plantlets. Fig 2.4.8c: Pineapple plantlets.



2.4.4 Protocol Development

As a centre of excellence, Kutsaga's protocol development achievements represent a key milestone with far-reaching benefits, which include crop diversification by enabling the production of plant species that are difficult to propagate through conventional means. This innovation not only strengthens national food systems but also serves as a pathway for sustainable revenue generation for the institution through the commercialization of tissue culture plantlets. Protocol development enhances the institution's reputation in plant tissue culture research, training and innovation.





2.5. MATERIALS & SERVICES

2.5.1 Who are we?

Materials and Services is a section that plays a crucial role in all of Kutsaga's divisions by providing the management, maintenance, and improvement of engineering systems and infrastructure. Its primary functions include maintenance and repairs, project management, fleet management, technical support, and design and development.

It comprises the plumbing, building, carpentry, painting, motor vehicle workshop, electricity workshop, and machine shop.

Vision

To be a one-stop shop for all Kutsaga's repairs and maintenance services.

Mission

To provide fabrication, repairs, maintenance and fleet management services.

Purpose

To ensure the smooth flow of all Kutsaga operations.



Team Structure



Achievements

2.5.2 FABRICATIONS

The team worked on several and successful fabrication projects to enhance productivity and efficiency in various areas of production. These include the fabrication of the Sheba buck and troll mill (Fig 2.5.1) required at the production site and also maintenance of buildings to improve the aesthetics of all Kutsaga stations. The team expects to continue automating and making timely repairs of machinery to ensure the Kutsaga's objectives are met.



Fig 2.5.1 Sheba troll mill



2.5.2.1 Installations

A total of 12 solar systems were installed;

- 6 systems at Kutsaga Harare, Fig 2.5.2 shows the adminitration block solar array.
- 4 at Banket station including solaristion of 3 boreholes aimed at increasing irrigation capacity for this station
- 2 at Masvingo (Oriental) station for powering boreholes.



Fig 2.5.2 The spectacular Kutsaga solar 78 solar panel carport – 48KW system powering the two Administration block floors

2.5.2.2 2025 PLANS

The institutions plan to install the following systems:

- A 30 KVA system for the Banket cold rooms and data centre
- A 40 KVA system for the new seed potato storage facility
- Solarization of all Kutsaga
- A 10 KVA system for Oriental Station
- In terms of energy savings, all ballast light tubes will be replaced with LED tubes across all Kutsaga

2.5.3 Fleet Management Capacitation Trainings

The Division held two training sessions this year:

- 1. The artisans underwent Basic Workshop Skills training, during which they had a refresher session on the workshop rules and regulations, as well as basic risk reduction measures.
- 2. The fleet officers and drivers participated in a Basic Vehicle Care and Maintenance course, which enables drivers to gain a fundamental understanding of their vehicles and equips them with essential vehicle maintenance skills for the proper care of the vehicles under their charge. In addition, the fleet officers then took part in Fleet Management training.

The training culminated in a comprehensive fleet performance assessment, that was conducted toward end of the year, resulting in the recommendation to implement a centralized fleet management system, which will allow the board to fully benefit from the fleet. A fleet manual detailing how the system should operate will be produced.

These sessions were beneficial, as evidenced by improved vehicle care and a stronger sense of ownership among the drivers. Incidents and accidents have since reduced by almost 95% ever since the Basic Workshop Skills training was completed for all artisans.



2.5.3.1 Fleet Improvement

The year concluded with the arrival of the long-awaited staff bus, a 36-seater Eicher Skyline-Pro (Fig 2.5.3). This bus will ease staff transport challenges in the institution and ensure a relief vehicle is available during repairs and servicing. Significant cost savings will be achieved, as hiring was previously the only solution when one of the buses was out of service.

CONSTRUCTION WORK



CHALLENGES



2025 PLANS

A total of 4 construction projects highlighted below were completed.

- 1. Float tray factory ablution facility,
- 2. Two Mega-litre water reservoirs at Oriental station,
- 3. 60-tone coal bunker and
- 4. Gromix mixing and packing shed.

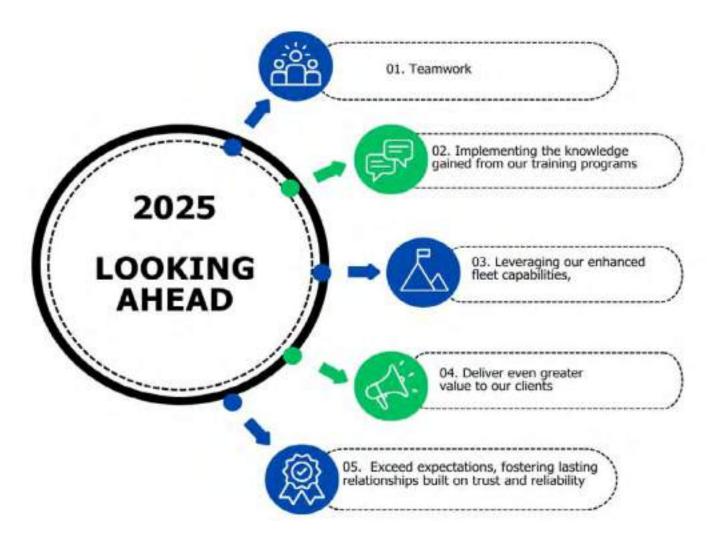
Several challenges were faced which included:

- Cost overruns due to the unstable economic environment.
- Delays in project timelines due to procurement delays, bad weather conditions and unforeseen site conditions, and design changes.
- ✓ Completion of seed potato storage facility shed.
- ✓ Construction of the Business Development shop at the Marondera Agricultural Showgrounds.
- √ Construction of the Float tray factory offices.
- ✓ Construction of dog kennels.
- ✓ Construct water tank platforms at the seed potato storage facility, the float tray factory, and the administration block for firefighting water tanks.



Fig 2.5.3. The 36-seater Eicher skyline-pro staff bus received at the end of 2024







3. HUMAN RESOURCES DIVISION

STRATEGIC ISSUE

1. HUMAN RESOURCES

Mission: To provide human resources and administrative support to the Tobacco Research Board and to attract, develop and retain competent staff that drive and sustain innovations.

1.1. INTRODUCTION

The TRB has remained resilient in a challenging macro-environment, despite these effects, we are encouraged by the solid underlying operational and business momentum, as well as progress in key strategic initiatives. We believe we are well positioned to continue delivering on our growth

ambition. Employee Engagement improved by a commendable increase of 7% to 70%. In addition, successful job evaluation and salary restructuring were successfully implemented.

The year 2024 was particularly pleasing in progressing our strategy, our ability to leverage employee engagement through quarterly staff briefs, and Works Council Meetings to enable faster scaling up employee relations growth drivers in line with our Human Resources inclusivity philosophy. We will continue to look for strategic staff engagements to accelerate the execution of the transformation, with our priority to simplify and transform employee experience.



Team Structure



2. OUR TRANSFORMATION JOURNEY

2.1. The Institution conducted a comprehensive review of its operations, evaluating everything from its services to its organizational structure. This led to structure consolidations, streamlining operations, although the process was difficult, the institution made sure that there was no loss of full-time employment. However, it is now agile and a more focused organization, filled with grit and better positioned for sustainable growth.

3. PATTERSON JOB EVALUATION EXERCISE

- 3.1. A job evaluation exercise was commissioned during the review period. The scope of the project included the following:
- To review the current (106) job descriptions and update them in line with current or proposed tasks/responsibilities.
- b. To review the current job grading structure and make justifiable recommendations.

- c. To grade all the jobs using the Patterson job evaluation system.
- 3.2. The results of the evaluation were implemented with effect from 1 November 2024.

4. LEARNING AND DEVELOPMENT

- 4.1. The industry is evolving so quickly that it is tough to keep up the pace. This also keeps us busy building our talent pipeline, growing a mindset of continual improvement, and learning is essential. Navigating the delicate balance between business needs and employee well-being is at the core; it is about finding a business with strong people-centric leaders and then contributing to building a culture of trust, performance, and care.
- 4.2. Capacity development remains a top priority for the institution, with a range of effective training initiatives successfully executed. We conducted several key training courses, including the HIV and Aids Health Expo, NSSA Occupational Health



training, comprehensive OSHE Training for all staff, Fire Drills, High-Performance Culture workshops, First Aid training, and OSHE Training focused on Worker Leadership. Fig 1.

- 43. The development agenda recognises that not everyone learns or grows at the same pace. This is why the layered learning approach is pursued. We consistently coached, upskilled, and provided opportunities so that team members have a chance to shine when it's the right time for them.
- 4.4. Additionally, our approach is grounded in continuous learning and adaptability, which is integral to our culture change efforts as part of the ongoing restructuring initiative. These initiatives not only enhance our workforce's skills and knowledge but also foster a positive and proactive organizational culture.



Fig 1. Workers Committee Training

5. EMPLOYEE RELATIONS

- 5.1. The employee relations environment has shown a commendable level of stability, despite facing challenges due to economic instability. It is all about teamwork, willingness to learn, and the can-do attitude.
- 5.2.The persistent inflationary pressures, exacerbated by a devaluation of the ZIG by 42.55% in September 2024, have understandably impacted the disposable earnings of staff. In response, the institution has proactively implemented a comprehensive salary restructuring in November 2024 aimed at alleviating these financial strains and supporting the employees.
- 5.3. Our Worker Representative Committee were instrumental in fostering a constructive dialogue

with Management. The Board Human Resources Committee inspired the Workers Committee to take any situation as a learning journey, in their quarterly discussions, which were essential in enhancing the overall industrial relations and ensuring that employee voices are heard.

- 5.4. The Workers Committee mentorship opportunities through their interactions with the Human Resources Board Committee members was instrumental in inculcating the solid employee relations climate.
- 5.5. Our teams demonstrated inclusive behaviour specifically by our leaders because they run diverse teams.

6. EMPLOYEE ENGAGEMENT

- 6.1. Our employee engagement survey results for 2024 improved scores across all the survey elements and we hope to keep the same momentum for 2025. The overall score moved from 63% to 70%.
- 6.2. The results reflect the efforts of all staff as any little improvement we made was noticed because we focused on foundation building, and a proper back-to-basics approach in terms of everything operational. This meant staff had to be very operationally involved, very hands-on, in all institutional programs.

7. GENDER MAINSTREAMING

- 7.1. Gender mainstreaming is important to the Tobacco Research Board's values, and we continue to advance gender equality. In 2024, women represented 47.22% of our workforce. We also closely track women in leadership, which was 42.86% in 2024.
- 7.2. We remain fixated on nurturing an environment where women are meaningfully supported to thrive, grow and contribute to our collective success of the Tobacco Research Board.

8. EMPLOYEE WELLNESS PROGRAM

8.1. In 2024, the Employee Wellness Program was enhanced to encompass a wider range of initiatives, including the DR Kuts Run/Walk and wellness programs focused on Gender-Based Violence awareness, work-life balance strategies, stress management techniques, financial wellness support, physical fitness activities, drug and substance abuse prevention, mental health support and nutritional guidance.



8.2. These new offerings complement the existing programs focused on ZUMBA sessions and HIV/AIDS management that the institution has traditionally provided. HIV/AIDS management that the institution has traditionally provided.



Fig 2: Dr Kuts run/Walk



Fig 3: Zumba

9. PRESIDENTIAL CLEAN-UP CAMPAIGN

As part of our Social Responsibility, the TRB has consistently demonstrated its commitment to community improvement by actively participating in the Monthly Presidential Clean-Up Campaign in and around all our Stations.





Fig 4. Kutsaga Clean-up Campaign

10. KEY HUMAN RESOURCES STATISTICS

Head Count	Engage- ments	Contract Extension	
358	59	60	
Resignations	Dismissal	Death	
2	6	0	
Retirement	Promotions	Work-Related Accidents	
7	6	3	

Fig 5. Permanent and Fixed Term



11. EXECUTIVE RETIREMENT

11.1. The Executive Director Finance and Administration, Mrs. Theresa Madziva retired in November 2024 after having served the Board for 22 years. Mrs Madziva's outstanding leadership and financial expertise have been integral to TRB's success. Her contributions have strengthened our operations and inspired excellence across the organisation.

12. HEADCOUNT

12.1. The headcount for December 2024 was 226 permanent, 115 fixed-term contract, 552 NEC graded staff, 17 Graduate trainees and 41 students on work-related learning. During the same period last year, the headcount was 218 permanent, 103 fixed-term contracts, 658 NEC graded staff and 29 students on work-related learning as shown in the graph left.

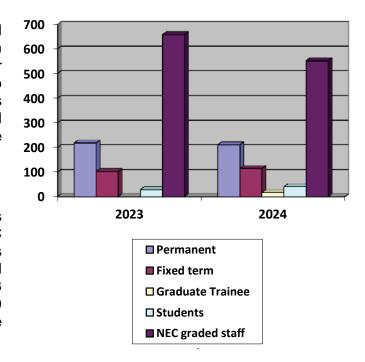


Fig 7: Headcount

13.PERSONAL ACCOLADES

13.1. The following awards have been presented in recognition of the outstanding contributions made by the TRB employees:

Table 1: Personal Accolades

Name of the employee	Position	AWard
Dr Frank Magama	Chief Executive Officer	CEO of the year - Agribusiness by CEO Africa Round Table
Mrs. Rhoda Mavuka	Executive Director Production and Operations	Outstanding Women in Agricultural Development Outstanding woman in Pinnacle Leadership
Mr Batanai Trivamwe Chokuda	Company Legal Secretary	Company Secretary of the year

14.Emerging ISSUES

- 14.1. All has emerged as key to potentially reshaping the Human resources space and the employee experiences platforms. There is a need to adopt and adapt to the new way of Human Resources Management.
- 14.2. We recognise the need to harness the power of digital technologies responsibly, ensuring that our actions contribute positively to environmental sustainability in a socially progressive way. We need to adapt and develop Al policy and practices, which will continue to evolve to reflect high standards guided by ethical guidelines, data privacy, and human
- 14.3. Resources governance principles.



OUR MISSION

Our mission is to drive business growth and elevate brand excellence. We aim to foster strong customer relationships and collaborate with cross-functional teams to align marketing efforts with business goals.

OUR PURPOSE

- i. To increase revenue for the Board products and services.
- ii. To coordinate all commercial activities.
- iii. To disseminate knowledge, information and technology.
- iv. To market and sell Kutsaga products and services.
- v. To continuously improve relationships with stakeholders through a participatory approach.





Team Structure



Portfolio of works





1. BUSINESS DEVELOPMENT & MARKETING

1.1 SALES PERFORMANCE HIGHLIGHTS

Our sales strategy in the year 2024 focused on enhancing customer relationships and fostering personalized interactions following suggestions and recommendations from year 2023 customer satisfaction survey resulting in significant growth in key product lines. Kutsaga products (table 1.1) were sold to the target market through Kutsaga Shops and Kutsaga Agents dotted around the country.

Tabla 1: Kutsaga Products & Services - Sales Report 2024

Product	Sales Comparison Unit	Year 2024 Sales Volume	% Increase in Comparison with Year 2023
Tobacco Seed	kg	1 292	26
Float Trays	Trays	212 552	54
Gromix	Bags	62 395	-3
Floatfert	Litres	42 910	-17
Trichoderma	kg	285	33
Tobacco Seedlings	Seedlings	530	121
G4 Seed Potato	Tubers (Million)	3.5	-45
Sweet Potato Seedlings	Seedlings	1.3	-51
Horticulture Seedlings	Seedlings	1.4	72
Gnatbuster		20 673	+32

1.2 Market surveys

The institution made commendable strides in ensuring customer satisfaction and fostering confidence in its staff's expertise. An 81.97% satisfaction index was recorded in the year, which is a strong indicator of success. The high mean score of 4.46, with a relatively low standard deviation of 0.582, recorded in the results further highlights the consistent performance and professionalism among staff.

Continuous improvement initiatives, including staff training, enhancements of feedback mechanisms, and process streamlining, are being implemented to sustain and further elevate these results.

1.3 Empowering Excellence:" Boosting Customer Satisfaction through Staff Training".

The Division conducted internal marketing initiatives targeted at staff, focused on fostering a motivated, informed, and unified workforce. By leveraging effective communication strategies and engagement programs, the Division facilitated staff training to improve brand awareness, sales performance, and operational efficiency across the organization. Kutsaga staff were trained on customer care, product knowledge on all Kutsaga products and services, tobacco seed varieties, and industrial hemp.

1.4 EXPORT MARKET

During the year, exports saw a significant increase, driven by the superior quality of Zimbabwe Kutsaga tobacco seeds. Key export destinations included Mozambique, South Africa, Zambia, Uganda, Malawi, and Rwanda. This growth underscores the Board's strategic focus on enhancing international market presence. Total revenue generated from exports increased by 52% compared to the previous year. Figure below shows how product sales increased during the year.





Figure 1.1. Export sales data of key tobacco production inputs

With regards to tobacco seed, more than half of the exports were BRK4, as shown in the chart below, this variety alongside KRK26R are famous in the region for their quality cured leaf, which and are highly sought after by merchants operating in the SADC region. A 5-year cover supply for tobacco seed is maintained to ensure seed security.

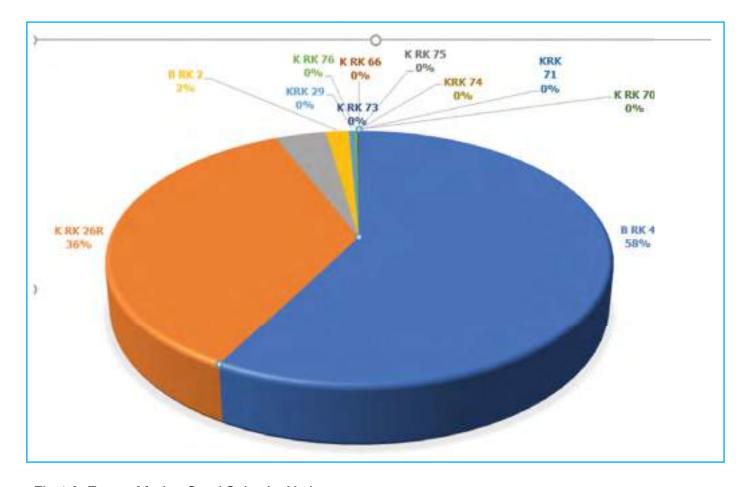


Fig 1.2: Export Market Seed Sales by Variety



Tobacco seed was exported across eight African countries, with **Mozambique** and **South Africa** dominating 70% of total exports. The Board shipped a total **1,174,748 grams** of tobacco during the year, reflecting a strong focus on key markets while maintaining smaller-scale operations in emerging regions as shown in the table below. Thus the Tobacco Research Board has a strong regional footprint on tobacco seed.

Table 1.2. Tobacco Seed Sales by country

Destination Country	QUANTITY (G)	PROPORTION	RANK
Mozambique	521,500	44%	1
South Africa	300,000	26%	2
Malawi	180,248	15%	3
Zambia	90,485	8%	4
Tanzania	75,000	6%	5
Rwanda	3,300	0.28%	6
Madagascar	2,900	0.25%	7
Angola	1,315	0.11%	8
Total	1,174,748	100%	

For 2024 and beyond, the Division's key priorities will be on expanding into emerging markets while maintaining strong relationships with key partners and increasing the efficiency of logistics to reduce costs and improve turnaround times. These activities are aligned with the Tobacco Value Chain Transformation plan to increase the tobacco economy to five (5) billion.

1.5 EXPORT Market EXPANSION DRIVE

In pursuit of expanding our global presence and diversifying market reach, the division augmented its regional marketing efforts by inviting clients and agents in the region to engage with our offerings. Our focus was to build trust, demonstrate value, and foster long-term partnerships, ultimately driving revenue growth

Clients and Agents were invited to our facilities for hands-on product experiences, showcasing quality and innovation.



Representatives from Makeni Seedlings from Zambia appreciating Kutsaga innovations



2. PUBLIC RELATIONS AND MARKETING

This unit's primary goal has been to strengthen the organization's reputation, enhance communication with stakeholders, and increase visibility across various platforms. Some of the highlights in the year are as follows;

2.1 EVENTS AND EXHIBITION

Kutsaga participated in 30 exhibitions within Zimbabwe, including the World Tobacco Africa Conference held in Harare, ADMA in Borrowdale, Zimbabwe Agricultural Show in Harare, ZFU Annual Congress, Research Council of Zimbabwe 13th Zimbabwe International Research Symposium, Zanu PF Business Expo in Bulawayo among other events, workshops, conferences and field discussion days.



Kutsaga products & Service being show cased at ADMA

Kutsaga products & Service being show cased at Zimbabwe Agric Show





2.2 DIGITAL MARKETING

During the year, the division expanded the Board's presence across Twitter, Facebook, LinkedIn, Instagram, and YouTube, reaching over 500,000 users and achieving an engagement rate of 5%. The institution launched targeted online campaigns, resulting in a 15% increase in website traffic.

2.3 STAKEHOLDER ENGAGEMENT

The institute undertook a range of initiatives aimed at strengthening partnerships, promoting community engagement, and driving sustainable growth, including hosting a Ministry of Lands, Agriculture, Fisheries, Water and Rural Development (MLAFWRD) Heads of parastatals working group meeting on Thursday, 5 December 2024.

Furthermore, a total of 39 institutions were represented by guests who visited Kutsaga from the Government, the media, foreign dignitaries not limited to Professor Obert Jiri the Permanent Secretary in the MLAFWRD, Curverid Tobacco, Dr Fisher of University of Kentucks, Premium Leaf Tanzania, Zimbabwe Sugar Association, Transformation Tobacco Italia, CGTN, Mrs Chibuula, Makeni Seedlings Zambia, TIMB Board, Industry players, among others.

2.4.1 CORPORATE SOCIAL RESPONSIBILITY

During the year, the institution made progress on its Corporate Social Responsibility (CSR) initiatives. The commitment of the institution is to foster positive change within the community aimed at addressing key social and environmental challenges.

2.4.1.1 DONATION TO CHILDREN'S HOME

One of the highlights of our CSR efforts during the year was providing support to Tariro Children's Home in Kadoma. Recognizing the need to enhance the well-being of children, the division organized a donation drive with Kutsaga staff, providing essentials such as food, clothing, school supplies, and hygiene products. In addition, memorable experiences for the children, including having fun and lunch with the children were created. The home, houses 26 children boys and girls aged between 10 months and 17 years, providing not only shelter but also a nurturing environment for the disadvantaged.



Founder of Tariro children's home receiving goods from Kutsaga



2.5 PUBLICATIONS

An average of 88 articles were published between during the year in Zimbabwe (public and private newspapers), SADC, and international mainstream media profiling the Kutsaga products and services in the form of information, education, and communication (IEC) material. This makes a significant contribution of the NDS1 towards a knowledge driven economy.

AWARDS & ACCOLADES

Kutsaga had a bountiful year in terms of awards and accolades closing the chapter with a total of 19 awards.

INDIVIDUAL AWARDS

- 1. 1. Golden Leaf Award Mr Aaron Denenga (Board Chairperson), Federation of Young Farmers Club Zimbabwe, (November 2024)
- 2. CEO of the Year Agribusiness Award Dr Frank Magama (Chief Executive Officer), CEO Africa RoundTable (December 2024)
- Silver Medal Dr. Susan Dimbi (Executive Director, Research, Development and Extension), Significant contributions to the Cooperation Centre for Scientific Research Relative to Tobacco (CORESTA) (October 2024)
- 4. Silver Award Tatenda Mugabe (PR and Communications Officer), Best Public Relations Practitioner, Marketers Association of Zimbabwe (September 2024)
- 5. Pacesetter in Agriculture Innovation, Tobacco Harvester Tatenda Magushu (Engineering Graduate Intern), Federation of Young Farmers Club Zimbabwe (November 2024)

GENERAL AWARDS

- Gold Leaf Award Most Impressive Contribution in Sustainability, BNG and Tobacco Reporter, (October 2024)
- Platinum Award Best Corporate Social Responsibility in the Public Sector, Institute of Public Relations and Communication Zimbabwe (IPRCZ) (November 2024)
- 3. Platinum Award Best Public Relations initiatives in the Public Sector, Institute of Public Relations and Communication Zimbabwe (IPRCZ) (November 2024)
- First Prize Outstanding Performance Government Parastatals Agriculture, Masvingo Provincial Show Society (September 2024)
- 5. Best Research Institution Stand Manicaland Agricultural Show (September 2024)
- Second Runner Up Best Innovating Research and Development Institution, Presidential Innovation Fair Awards (September 2024)
- 7. First Prize Tobacco Industry participants, Mashonaland East Agricultural Show (September 2024)
- 8. Best Organisation Exhibiting Sustainable Conservation Practices, Zimbabwe Agricultural Show (ZAS) (August 2024)
- 9. Second Runner-Up Overall Best Exhibitor, Zimbabwe Agricultural Show (ZAS), (August 2024)
- 10. Fourth Overall Winner Best Companies Exhibition, Mashonaland Central Agricultural Show, (August 2024)
- 11. First Runner Up National Business Innovation of the Year Award, Zimbabwe National Chamber of Commerce (ZNCC) (June2024)
- 12. Winner's Certificate of Achievement Companies, Mhondoro-Ngezi Show Society (June 2024)
- 13. Winner's Certificate Innovation of the Year Award, Zimbabwe National Chamber of Commerce (ZNCC) Mashonaland Region, (May 2024)
- 14. Agricultural Inputs Exporters Award, ZimTrade, (May 2024)

These awards are a testament to the collective effort by all and sundry in Kutsaga hierarchy of manpower towards a revitalised organisation, in the aftermath of its recent rebranding and staff reassignments across the various divisions.



MISSION:

To provide independent and objective assurance, management advisory services and insight with continuous evaluation and improvement in risk management, control and governance processes to enhance and protect organizational value.

ABOUT US

The internal audit function delivers assurance and advisory services to the institution through a range of audits, assurance reviews, and advisory assessments. These services are shaped by the specific processes being examined and the client's needs.

The control environment for Kutsaga encompasses its policies, procedures, and operational systems, which include mechanisms for establishing and monitoring the attainment of the Kutsaga's objectives. It also aids in creating

policies and making decisions, ensures that resources are used economically, effectively, and efficiently, confirms compliance with existing policies, procedures, laws, and regulations, and safeguards Kutsaga's assets and interests against possible losses. The institution faces significant risks that require ongoing reviews to ensure alignment with its strategic objectives. The Global Internal Standards and plays a critical role in guiding our audit engagements, along with various public companies' legislation. The internal audit's work plan is crafted through a flexible risk assessment process.

Overall, the internal control framework of Kutsaga is deemed to have functioned effectively throughout the year. Although we identified some instances of inadequate compliance with key controls, none of these issues are considered to have significantly affected the operations of Kutsaga.





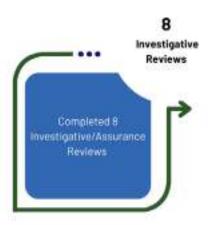
TEAM STRUCTURE



Summary of Outcomes







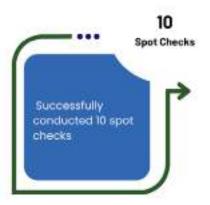
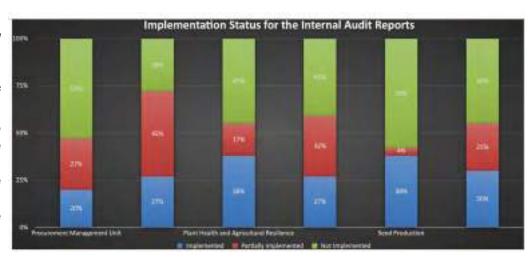




Table 1: Implementation Status for the Internal Audit Reports

The adaptable nature of the risk-based audit plan allows for modifications to the original strategy while preserving its overarching goals. As shown in the table above, all planned engagements were successfully completed, achieving a 100%



fulfilment rate, which contributed to a 63% completion rate for the total routine audits conducted throughout the year. The spot checks were conducted for the shops and kiosks during the most active quarters of April to August. Follow-up audits were conducted based on the audits from the previous year. Table 1 below outlines the implementation of the internal audit recommendations.

In addition, the internal audit division executed several investigative engagements, which involved overseeing the opening of anonymous boxes and investigating the letters received. This benefited the institution in cultivating a transparent and ethically sound workplace culture as well as enhance employee satisfaction. The Figure 1 below portrays the distribution of the total engagements executed;

Internal Audit Engagements-2024

Figure 1: Proportion of routine audits to investigative engagements

The work programs outlined the following objectives;

- a. To ensure that risks are properly identified and managed
- To confirm that control systems are established and function effectively to optimize the use of resources in an economical, efficient, and effective manner
- To evaluate the robustness, adequacy, and implementation of the entire internal control system
- d. To determine the level of compliance with established policies, procedures, laws, and regulations
- e. To verify that both physical and intellectual institutional assets, as well as records and data, are adequately protected
- Sect checks

 Routive Audits

 Sect checks

 Routive Audits

 Sect checks
- f. To ensure that resources are procured in a cost-effective manner and utilized efficiently
- g. To guarantee that financial, managerial, and operational information is accurate, reliable, and delivered in a timely fashion.

CONTINUING PROFESSIONAL DEVELOPMENT

In order to stay updated with the latest technologies and advancements in Internal Audit and the Public Sector, the division participated in training sessions on International Public Sector Accounting Standards (IPSAS), unpacking and interpreting the Institute of Chartered Loss Control and Private Security Management Act, and a course facilitated by the Institute of Internal Auditing of Tanzania covering the Fundamentals of Risk-Based Auditing and Report Writing.







Executive Summary

The Procurement Division successfully navigated the turbulent supply market landscape of the year 2024, mainly focusing on strategic sourcing, value for money, supplier relationship management, and regulatory compliance. This report highlights our key objectives, accomplishments, financial performance, and strategic initiatives that enhanced our internal processes in the pursuit of supporting the Board's overall operations.

Key Objectives

- Cost Reduction: To provide for the fair and equitable treatment of all bidders, leading to procurement contracts that represent good value for money.
- Sustainability: Implement sustainable procurement practices to reduce environmental impact.
- Transparency: To ensure fair and open competition, promote ethical conduct, and maximize the value of public funds through strategic sourcing and responsible contract management
- Support organisational operations: To provide timely, cost-effective, and compliant procurement services that support the institution's mission and strategic objectives.
- Collaboration: To collaborate with stakeholders to identify procurement needs, develop innovative solutions, and foster strong relationships with suppliers.
- Continuous Improvement: To continuously improve our processes, embrace best practices, and invest in the professional development of our staff to deliver exceptional procurement services.

Team Structure





Procurement Performance Overview

The total procurement expenditure for the year 2024 stood at USD\$ 4.8 million. This value included both capital (Capex) and operational (Opex) expenditure for the year.

The table below shows a highlight of high-value procurements conducted during the year under review.

SELECTED HIGH-VALUE PROCUREMENTS

PROCUREMENT DESCRIPTION	QUANTITY	SUPPLIER	VALUE	STATUS
Supply and delivery of a 36-seater staff bus	1	Duly's	US\$69,838.00	Delivered
Supply and Delivery of 90 hp tractors	2	Agriforce PVT LTD	US\$48,000.00	Delivered
Supply and installation of a Solar System	1	Pristine Power PVT LTD Solution: Lot 1 Mwenje Technology PVT LTD: Lot 2	US\$78,125.75 US\$89,752.24	All completed and commisioned
Supply and Installation of a cold room in Banket	2	Evergas PVT LTD	US\$23,000.00	Completed and commissioned
Supply and delivery of Toyota Hilux GD6 double-cab vehicles	7	Exquisite Cars PVT LTD	US\$430,291.54	5 vehicles de- livered as at 25 April 2025
2.5-ton forklift	1	Eurostar Electric PVT LTD	US\$28,000.00	Delivered
Expandable Polystyrene raw material	15 metric tonnes	Eurostar Electric	US\$65.636.25	Delivered
Water bowser on wheels (5000 lts)	1	Bain New Holland	US\$ 8,731.00	Delivered
Reversible plough (2 disc)	1	Bain New Holland	US\$5,600.00	Delivered
Expandable Polystyrene raw material	68 tons	Loyal Crown- China	US\$224,060.00	Delivered
Construction of a 2 Mega litres Water surface reservoir with a dam liner for Oriental Station	1	Zimdam PVT LTD	US\$19,370.00	Completed and commissioned
Construction of an ablution facility, fix and supply	1	Tasishi Projects PVT LTD	US\$19,956.00	Completed and commissioned
Construction of a fireproof Data Centre at Banket Station, fix and supply.	1	Tasishi Projects PVT LTD	US\$7,985.00	Completed and commissioned
Solarisation of Banket station offices and boreholes	2	Shinko Africa PVT and Davis Sheriff	US\$13,500.00	Completed and commissioned



Commercial Borehole drilling, capacitation and full solarisation-Banket station	1	Scorefield Enterprises	US\$18,092.00	Completed and commisioned
Supply and installation of a clear-view fence around the main Administration complex perimeter	670 meters	RealQuote Investment	\$26,991.00	Installed and Completed
Mobile travelgator irrigators	2	Waterwright Irrigation	US\$19,126.90	Delivered

Regulatory compliance

To ensure full compliance with procurement regulations in the country, we embarked on the following activities:

Digital Transformation:

• We adopted and implemented the use of the new electronic government procurement system (e-gp) platform that streamlines processes and improves the transparency of public procurement.

Statutory reporting:

The following statutory reports were submitted on time to our regulator Procurement Regulatory Authority of Zimbabwe (PRAZ), as stipulated by the Public Procurement and Disposal of Public Assets Act Chapter 22.23

- TRB Annual Procurement and Disposal Plan for the year 2024
- Annual Procurement Return for the year 2024
- Twelve (12) Monthly Procurement Returns for the year 2024

Future Outlook

The Procurement Division aims to focus on:

- Enhanced Technology Use: Integration of AI, data analytics, and our current procurement systems for better decision-making.
- Strengthening Supplier Relationships: Building collaborative partnerships for innovation and risk management.
- Continuous Improvement: Regularly reviewing procurement processes for efficiency and effectiveness.
- Regulatory Compliance: We aim to maintain and consolidate total compliance with all the public procurement regulatory frameworks in the country.



MISSION

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To provide accurate and timely information to enable decision making by all stakeholders.

To provide efficient and effective support services in Information Technology and Security Services.

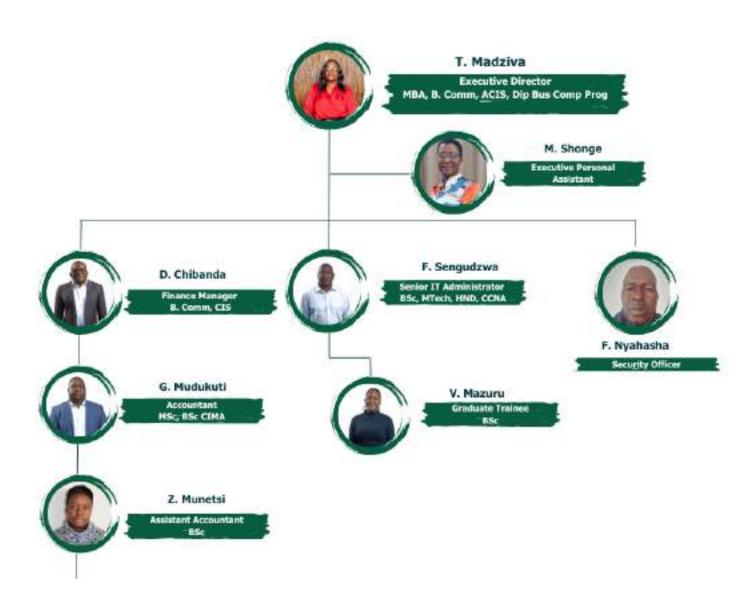
EXECUTIVE SUMMARY

400

In 2024 Tobacco research board achieved a surplus of ZWG226 million which shows a significant improvement of 58.5% from ZWG142 million achieved in 2023. This growth reflects improved operational efficiency and effective cost management despite inflationary pressures. Cash reserves for 2024 stood at ZWG90 million in comparison with ZWG7 million in 2023, the substantial growth demonstrates strong liquidity management.



Team Structure





FINANCIAL PERFORMANCE

1. REVENUE

The revenue for the year 2024 declined by 16% in historical terms from ZWG405 million in 2023 to ZWG340 million in 2024. In inflation adjusted terms revenue declined by 22%.

Revenue for Tobacco Research Board is made up of tobacco levy and income from its own projects. Receipts from the tobacco levy declined significantly from ZWG136.7 million in 2023 to ZWG87.4 million in 2024 representing a decrease of 36.1%

2. REVENUE CONTRIBUTION



Figure 1: Revenue contributions for the year 2023 & 2024 Historical

Tobacco levy contributed 26% of the total revenue for 2024 and 74% of the revenue was generated through TRB's commercial projects. In 2023 Tobacco levy contributed 20% of the total revenue and 80% came from TRB's commercial projects.

The major revenue lines from commercial projects is made up of Tobacco seed, Gromix, Float trays, Seed Potato production, Float Fert and Horticulture seedlings.

3. RECURRENT EXPENDITURE

Staff costs in increased by 35.4% from ZWG129 million to ZWG174.6 million in 2024 the composition of recurrent expenditure is detailed in Figure 2, the increase is mainly attributed to the inflationary environment in 2024. Administration expenses increased by 13% from ZWG77.4 million to ZWG87.4 in 2024. Operating expenses declined by 16.9% from ZWG19.3 million in 2023 to ZWG16 million in 2024. Projects expenditure declined by 20.4% from ZWG35 million in 2024 to ZWG27.8 million in 2024.

In the year 2024 57% of recurrent expenditure went into staff costs, 29% went into Administration costs, 9% went into projects costs and 5% was for operating expenditure.



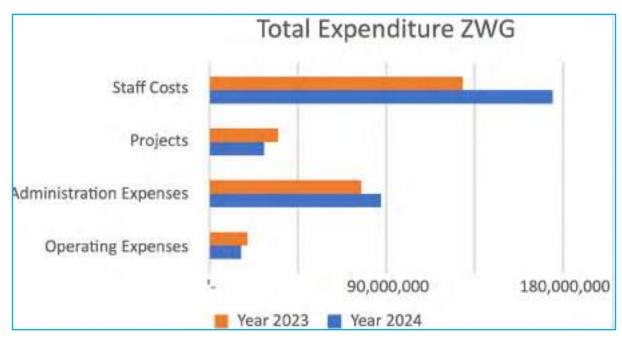


Figure 2: Total expenditure for the year 2023 & 2024 Historical

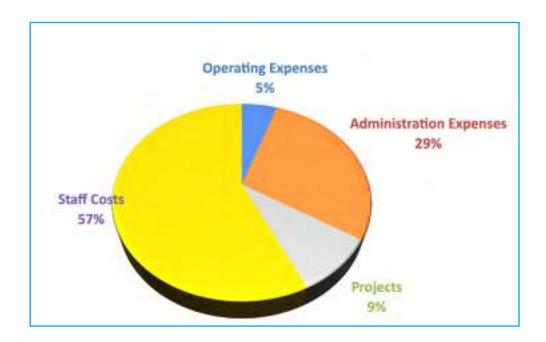


Figure 3: Percentages of recurrent expenditure as at 31/12/2024

STATEMENT OF FINANCIAL POSITION AS AT 31 DECEMBER 2024

The financial position of the organization strengthened significantly in 2024, with total assets growing by 115.1% (from ZWG 249.5 million to ZWG 536.6 million). Non-current assets increased by 7.3%, current assets increased significantly by 234.2% with major increases noted in Trade receivables, inventories and Cash and cash equivalents.

Reserves and Equity increased by 96.9% due to a significant increase in accumulated surplus. Current liabilities increased by 372.6% and it comprised of trade payables, provisions and short-term loans.



STATEMENT OF CASHFLOWS AS AT 31 DECEMBER 2024

The year 2024 closed with a very healthy cashflow position which showed an increase of 1 108% from the position held in 2023.

A. INFORMATION TECHNOLOGY

The Information Technology (IT) Department plays a pivotal role in delivering efficient, effective, and secure Information and Communication Technology (ICT) services to the Board. Over the past year, the department successfully maintained critical ICT infrastructure, provided essential support services, ensured the reliability of applications and networks, and upheld robust data security measures. Among its key achievements was the successful development and deployment of electronic applications, further enhancing the Board's operational efficiency and service delivery.

1. ICT PROJECTS

Point of Sale Applications (PoS)

A point-of-sale application (PoS) was developed to facilitate and simplify the payment process for farmers and sales agents. The application has a user-friendly interface on the Point of Sale (POS) terminal, which displays all products available in stock. The application accepts all forms of payment, like payment by a bank card, mobile money transfer, and cash. All sales are monitored remotely from the head office (Kutsaga) in real time. The head office users have access to a web application to view the dashboard for sales and generate reports by location, product type, payment type, etc.

The application is integrated with the accounting system (Sage Evolution), where all invoices are seamlessly posted into the accounting system.

Analytical Chemistry Services Automation

An application was developed to automate the processes in the analytical chemistry lab. The processes that were automated include client sample receiving, generation of proforma invoices, analysis of samples within the laboratory, and generation of reports. The application is integrated with the Lime & Fertiliser application to allow seamless processing of Lime & Fertiliser recommendations.

Policy Documents application

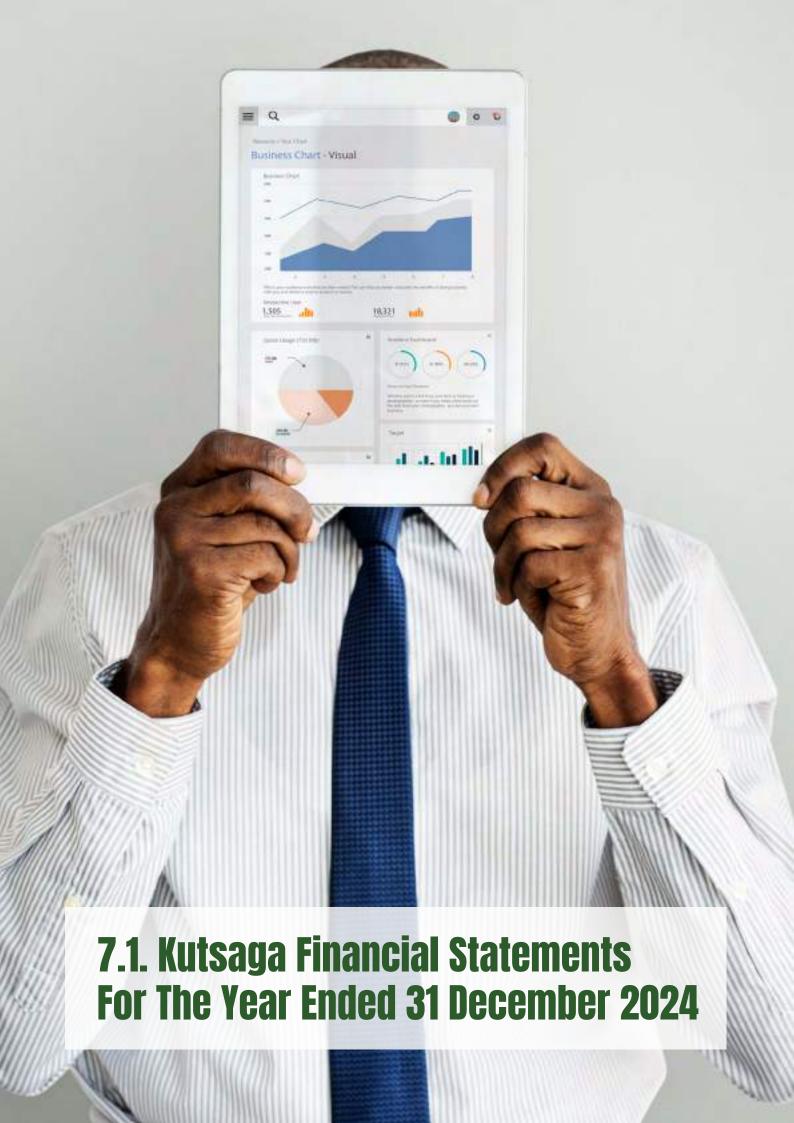
The policy document application was developed to manage company policy documents within the organization. Employees are required to read and understand such documents, and the system keeps track of employees who have done so. Administrators can update such documents and ensure that the updates are accessed by employees.

These applications were developed to automate office operations and improve accountability, document tracking, transparency, accessibility, and turnaround time.

2. BANKET DATA CENTRE

Following the 2019 ICT external audit conducted by the Auditor General's office, it was observed that the Tobacco Research Board (TRB) lacked a Disaster Recovery Site (DRS). To address this gap, the auditors recommended the establishment of a DRS to safeguard critical data and ensure operational resilience. Banket Station was identified as the optimal location for this facility.

The construction of the Data Centre was successfully completed during the 2024 financial year. This strategic infrastructure enhances the TRB's capacity for business continuity by enabling rapid data and system recovery in the event of disruptions—including natural disasters, cyberattacks, or hardware failures. The implementation of this site underscores the Board's commitment to robust risk management and uninterrupted service delivery.





TOBACCO RESEARCH BOARD GENERAL INFORMATION

Financial Statements for the year ended 31 December 2024

Country of incorporation and domicile Zimbabwe

Nature of business and principal activities The Tobacco Research Board (the "Board") develops and

provides elite varieties and innovative agro-based technical services and products in order to maximize economic value from

sustainable tobacco production.

Directors Mr. A. Denenga Chairman

Prof.F.Mtambanengwe
Air Vice Marshal (Rtd). I. R. Chiganze
Mr. S. Mutepfa
Board Member
Dr D. Kutywayo
Board Member
Ms C. Garise – Nheta
Board Member
Mrs. F. Miti
Board Member

Dr. F. Magama Chief Executive Officer

Registered office Airport Ring Road,

P. O. Box 1909 Harare,

Zimbabwe

Bankers Standard Chartered Bank

CBZ

Auditors Baker Tilly Chartered Accountants (Zimbabwe)



for the year ended 31 December 2024

The directors are required in terms of the Tobacco Research Act [Chapter 18:21] to maintain adequate accounting records and are responsible for the content and integrity of the financial statements and related financial information included in this report. It is their responsibility to ensure that the financial statements fairly present the state of affairs of the Board as at year end of the financial year and the results of its operations and cash flows for the period then ended, in conformity with the requirements of the International Financial Reporting Standards.

The financial statements are prepared in accordance with International Financial Reporting Standards and are based upon appropriate accounting policies consistently applied and supported by reasonable and prudent judgements and estimates.

The directors acknowledge that they are ultimately responsible for the system of internal financial control established by the Board and place considerable importance on maintaining a strong control environment. To enable the directors to meet these responsibilities, the board of directors sets standards for internal control aimed at reducing the risk of error or loss in a cost effective manner. The standards include the proper delegation of responsibilities within a clearly defined framework, effective accounting procedures and adequate segregation of duties to ensure an acceptable level of risk. These controls are monitored throughout the organisation and all employees are required to maintain the highest ethical standards in ensuring the Board 's business is conducted in a manner that in all reasonable circumstances is above reproach. The focus of risk management in the organisation is on identifying, assessing, managing and monitoring all known forms of risk across the organisation. While operating risk cannot be fully eliminated, the Board endeavours to minimise it by ensuring that appropriate infrastructure, controls, systems and ethical behaviour are applied and managed within predetermined procedures and constraints.

The directors are of the opinion, based on the information and explanations given by management, that the system of internal control provides reasonable assurance that the financial records may be relied on for the preparation of the financial statements. However, any system of internal financial control can provide only reasonable, and not absolute, assurance against material misstatement or loss.

The directors are satisfied that the Board has access to adequate resources to continue in operational existence for the foreseeable future.

The external auditors are responsible for independently auditing and reporting on the Board's financial statements. The financial statements have been examined by the Board's external auditors and their report is presented on pages 4 to 6.

The	financial statements set out on pages 7 approved by the board of directors on	to 31	which hav	ve been	prepared	on the	going concern	basis,
were	approved by the board of directors on	15	105 17	Mild wer	e signed -	on their	r behalf by:	

Approval of financial statements

Director

Director





Chartered Accountants 15 Connaught Road Avondale, Harare Zimbabwe

T: +263 242 369 017, 369 486, 301 598, 301 537

enquiries@bakertilly.co.zw www.bakertilly.co.zw

INDEPENDENT AUDITOR'S REPORT

To the Members of Tobacco Research Board

Report on the Audit of the Financial Statements

Opinion

We have audited the inflation adjusted financial statements of Tobacco Research Board set out on pages 7 to 31 which comprise the Statement of Financial Position as at 31 December 2024, the Statement of Profit or Loss and Other Comprehensive Income, Statement of Changes in Funds, Statement of Cash Flows for the year then ended, a summary of significant accounting policies and other explanatory notes to the financial statements.

In our opinion, the Inflation adjusted financial statements present fairly, the Statement of Financial Position of Tobacco Research Board as at 31 December 2024, and its financial performance and its cash flows for the year then ended in accordance with International Financial Reporting Standards ("IFRS")

Basis for Opinion

We conducted our audit in accordance with International Standards on Auditing (ISAs), Our responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of financial statements section of our report. We are independent of the board in accordance with International Ethics Standards Board for Accountants Code of Ethics for Professional Accountants (Parts A and B) (IESBA Code) and other independent requirements applicable to performing audits of financial statements in Zimbabwe. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Key Audit Matters

Key audit matters are those matters that, in our professional judgment were of the most significance in our audit of the financial statements of the current period. These matters were addressed in the context of our audit of the financial statements as a whole, and in forming our audit opinion thereon, and we do not provide a separate opinion on these matters. We determined the matters below to be key audit matters to communicate in our report.

ADVISORY • AUDIT • TAX • ACCOUNTING

Baker Tilly Chartered Accountants trading as Baker Tilly is a member of the global network of Baker Tilly International Ltd., the members of which are separate and independent legal entities.



Key audit matter

How our audit addressed the key audit matter

Hyperinflation Accounting (High risk area and significant judgement)

The board applied IAS 29 – Financial Reporting in Hyperinflationary Economies. Hyperinflationary accounting was determined to be a matter of most significance to the audit due to the complexity and subjectivity relating to the application of the Standard.

IAS 29 requires significant judgments to be made by management considering the guidelines provided in the standard. We obtained an understanding of the board's process for identifying hyperinflationary economies and evaluated the policy in relation to hyperinflation accounting. Our audit procedures included, among others:

- We assessed and tested the indicators of hyperinflation on the Zimbabwean economy by corroborating these with industry report and our own understanding of the economy.
- We recomputed and tested the hyperinflation workings prepared by management by evaluating the rationale for the economic indicators included (such as the inflation rate, cumulative inflation rate, consumer price indices from various sources).
- We tested the source data used by agreeing it to supporting schedules.
- We assessed the reasonability of the assumptions used by comparing these to externally available industry, financial and economic data; and;
- We tested restatement of the statement of financial position and income statement items for correct restatement in terms of IAS 29.

We found that the inflation adjustments were properly done in terms of IAS 29.

Responsibilities of the Directors for the Financial Statements

The directors are responsible for the preparation and fair presentation of the financial statements in accordance with International Financial Reporting Standards and the Tobacco Research Act [Chapter 18:21] and for such internal control as the directors determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the directors are responsible for assessing the board's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the directors either intend to liquidate the entity or to cease operations, or have no realistic alternative but to do so.

Auditor's Responsibilities for the Audit of the Financial Statements

The objectives of our audit are to obtain reasonable assurance about whether the financial statements as a whole, are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

As part of an audit in accordance with International Standards on Auditing, we exercise professional judgment and maintain professional scepticism throughout the planning and performance of the audit. We also:

Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that



- is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- ☑ Obtain an understanding of internal control relevant to the audit 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.
- Conclude on the appropriateness of the directors' use of the going concern basis of accounting and based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the board's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of the auditor's report. However, future events or conditions may cause the board to cease to continue as a going concern.
- Dobtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the board to express an opinion on the financial statements.
- We are responsible for the direction, supervision and performance of the audit. We remain solely responsible for the audit opinion.

We communicate with the directors regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

Report on Other legal and regulatory requirements

The financial statements of Tobacco Research Board have been drawn up in compliance with the requirements of the Tobacco Research Act (Chapter 18.21) and Public Finance Management Act (Chapter 22:19).

Partner: Fungal Nyagwaya

PAAB Practising Number: 0477

Buker Tilly Chartered Accountants (Zimbabwe)

15 Conneught Road, Avondale

Harare, Zimbabwe

Date: 20/05/2025



STATEMENT OF FINANCIAL POSITION

as at 31 December 2024

	IN	FLATION ADJ	USTED	HISTORIO	CAL COST
	Note	2024	2023	2024	2023
		ZWG	ZWG	ZWG	ZWG
Assets					
Non current assets		229 545 779	217 884 696	140 569 734	131 019 060
Property, plant and equipment	4	222 164 599	216 548 523	133 715 477	130 215 588
Financial assets at amortised cost	5	7 309 259	1 237 112	6 816 051	743 904
Biological assets	6	71 921	99 061	38 206	59 568
Current assets		418 409 616	197 082 082	396 225 245	118 509 970
Biological assets	6	9 799 918	26 350 327	9 799 918	15 845 055
Inventories	7	142 099 890	139 896 904	119 915 519	84 123 213
Trade and other receivables	8	176 846 627	18 487 539	176 846 627	11 116 981
Cash and cash equivalents	9	89 663 181	12 347 311	89 663 181	7 424 721
					<u> </u>
Total assets		647 955 395	414 966 778	536 794 978	249 529 030
Reserves and liabilities					
Reserves		566 204 335	387 685 346	459 261 016	233 124 080
Capital reserve		397 833	397 833	239 226	239 226
Revaluation Reserve		6 727 888	6 727 888	4 045 633	4 045 633
Accumulated surplus		559 078 614	380 559 625	454 976 157	228 839 221
					<u> </u>
Current liabilities		81 751 060	27 281 432	77 533 964	16 404 950
Trade and other payables	10	51 543 148	10 682 370	51 543 148	6 423 554
Provisions	11	22 289 030	14 749 510	18 809 306	8 869 218
Short-term loan	12	7 918 883	1 849 552	7 181 509	1 112 178
Total reserves and liabilities		647 955 395	414 966 778	536 794 978	249 529 030

2025.

Mr. D. Chibanda,

(Acting Executive Director-F(nance and Administration).

(Chief Excep (c Officer).

2025.



STATEMENT OF PROFIT OR LOSS AND OTHER COMPREHENSIVE INCOME

for the year ended 31 December 2024

		INFLATION	ADJUSTED	HISTORIC	CAL COST
	Note	2024	2023	2024	2023
		ZWG	ZWG	ZWG	ZWG
Revenue	13	379 157 834	446 885 342	252 521 055	268 722 394
Cost of sales	14	(36 022 808)	(58 138 589)	(27 829 815)	(34 960 066)
Gross profit		343 135 026	388 746 752	224 691 239	233 762 328
Government grant	15	146 327 933	227 397 680	87 359 378	136 739 435
Other income	16	289 914 583	271 486 400	214 130 582	163 250 992
Expenditure		(341 646 776)	(375 251 402)	(278 079 538)	(225 647 265)
Staff costs	17	(215 309 795)	(214 527 400)	(174 635 552)	(129 000 240)
Administration expenses	18	(104 288 403)	(128 665 835)	(87 421 181)	(77 369 714)
Operating expenses	19	(22 048 577)	(32 058 167)	(16 022 805)	(19 277 311)
Monetary loss		(231 166 315)	(281,429,952)	-	(169,230,278)
Surplus for the year before net finance incom	me	206 564 450	230 949 478	248 101 662	138 875 212
Net finance income	20	10 900 158	5 172 224	10 900 158	3 110 177
Surplus for the year		217 464 607	236 121 702	259 001 820	141 985 389
Other comprehensive Losses (translation)		(38 945 619)	-	(32 864 885)	-
Total comprehensive income for the year		178 518 989	236 121 702	226 136 936	141 985 389
<u>-</u>					



STATEMENT OF CHANGES IN FUNDS

for the year ended 31 December 2024

Inflation Adjusted	~			
	Capital reserve	Accumulated surplus	Revaluation Reserve	Total
	ZWG	ZWG	ZWG	ZWG
Balance at January 01, 2023	397 833	144 437 923	6 727 888	151 563 644
Surplus for the year	-	236 121 702	-	236 121 702
Balance as at December 31, 2023	397 833	380 559 625	6 727 888	387 685 346
Balance at January 01, 2024	397 833	380 559 625	6 727 888	387 685 346
Surplus for the year	-	178 518 989	-	- 178 518 989
Balance as at December 31, 2024	397 833	559 078 614	6 727 888	566 204 335
Historical Cost				
	Capital	Accumulated	Revaluation	Total
	reserve ZWG	surplus ZWG	Reserve ZWG	ZWG
Balance at January 01, 2023	239 226	86 853 832	4,045,633	91 138 692
Surplus for the year	-	141 985 389	-	141 985 389
Balance as at December 31, 2023	239 226	228 839 221	4 045 633	233 124 080
Balance at January 01, 2024	239 226	228 839 221	4 045 633	233 124 080
Surplus for the year	-	226 136 936	-	226 136 936
Balance as at December 31, 2024	239 226	454 976 157	4 045 633	459 261 016



STATEMENT OF CASH FLOWS

for the year ended 31 December 2024

		INFLATION	ADJUSTED	HISTORIO	CAL COST
	Note	2024	2023	2024	2023
		ZWG	ZWG	ZWG	ZWG
Cash flows from operating activities					
Net cash generated/(utilised) in operation activities	1	95 208 334	87 870 582	96 040 273	52 838 594
		84 308 176	82 698 358	85 140 115	49 728 417
Surplus for the year		178 518 989	236 121 702	226 136 936	141 985 389
Adjustment for:		25 490 483	19 650 733	15 405 537	11 816 436
Depreciation charge for the year	4	12 174 579	5 206 911	10 194 338	3 131 035
Increase in leave pay provision		7 539 520	34 524 853	9 940 088	20 760 585
(Profit) or Loss on Asset Disposal	18	126 132	14 347	126 132	8 627
Fair Value adjustment on Biological Assets	6	16 550 409	(14 923 154)	6 045 137	(8 973 634)
Interest received		(15 317 833)	(11 349 793)	(15 317 833)	(6 824 890)
Interest paid		4 417 675	6 177 569	4 417 675	3 714 714
Changes in working capital:		(119 701 296)	(173 074 077)	(156 402 358)	(104 073 407)
(Increase) in trade and other receivables		(158 359 088)	(89 791 127)	(165 729 646)	(53 993 462)
(Increase) in inventories		(2 202 986)	(103 319 983)	(35 792 306)	(62 128 673)
Increase in trade and other payables		40 860 778	20 037 033	45 119 594	12 048 727
increase in trade and other payables		40 800 778	20 037 033	43 119 394	12 048 727
		10 900 158	5 172 224	10 900 158	3 110 177
Interest received		15 317 833	11 349 793	15 317 833	6 824 890
Interest paid		(4417675)	(6 177 569)	(4417675)	(3 714 714)
Cash flows from investing activities					
_					
Net cash flow from investing activities		(23 961 794)	(77 929 506)	(19 871 144)	(46 860 797)
Acquisition of property, plant and equipment	4	(18 491 402)	(77 176 017)	(14 313 150)	(46 407 707)
Disposal of property, plant and equipment		574 615	477,060	492 790	286,867
Acquisition of biological assets	6	27 140	5 531	21 362	3 326
Interest Capitalised on long term Investments		(6 072 147)	(1 236 079)	(6 072 147)	(743 283)
Cash generated from financing activities					
Net cash generated from financing activities		6 069 331	1 716 903	6 069 331	1 032 412
Short term loans acquired		16 035 889	3 311 582	16 035 889	1 991 330
Repayment of short term loans		(9 966 559)	(1 594 679)	(9 966 559)	(958 917)
Net decrease in cash and cash equivalents		77 315 871	11 657 978	82 238 459	7 010 208
Cash and cash equivalents at the beginning of the		40.017.01	689 332		414 512
year		12 347 311		7 424 721	
Cash and cash equivalents at the end of the year	9	89 663 181	12 347 311	89 663 181	7 424 721



NOTES TO THE FINANCIAL STATEMENTS

for the year ended 31 December 2024

1 General information

The Tobacco Research Board (the "Board") was established in 1950 under the Tobacco Research Act [Chapter 18:21], with a mandate of directing, controlling and carrying out tobacco research in Zimbabwe.

2 Basis of preparation

2.1 Statement of compliance

The financial statements for the year ended December 31, 2024 have been prepared with the aim to comply with International Financial Reporting Standards (IFRS) as issued by the International Accounting Standard Board (IASB). The financial statements are prepared from statutory records that are maintained under the historical cost convention. The financial statements have been prepared in compliance with requirements of IAS 29. Comparative figures for the year ended 31 December 2023 have also been restated in accordance with the requirements of IAS 29.

Inflation indices used

The Board adopted the Zimbabwe consumer price index (CPI) compiled by Zimbabwe National Statistics Agency (ZIMSTAT) as the general price index to restate transactions and balances as appropriate. The indices and conversion factors used to restate these financials are given below.

Date	Indices	Conversion Factor
31 December 2024	166.30	1.00
05 April 2024	100.00	1.66
31 December 2023	65 703.43	9.0855
1 January 2023	13 819.67	43.1957

2.2 Basis of measurement

The financial statements are based on the statutory records that are maintained under the historical cost basis, except for property, plant and equipment which are measured at revalued amounts.



NOTES TO THE FINANCIAL STATEMENTS

for the year ended 31 December 2024

2.3 Functional and presentation currency

These financial statements are presented in Zimbabwean Gold currency (ZWG) which is the official functional currency. On the 5th of April 2024 there was a change in the functional currency from ZWL to ZWG, the exchange rate on this day was pegged at ZWL 2 498.7242 to ZWG 1. All the financial information presented has been rounded to the nearest dollar. The financial statements are presented in Zimbabwean Gold ("ZWG") in order to comply with laws and regulations particularly Statutory Instrument 60 of 2024, with which the Reserve Bank of Zimbabwe announced a new currency called Zimbabwe Gold ("ZWG").

2.4 Critical accounting judgments and key sources of estimation

In the application of the Board's accounting policies, which are described in note 3, the Directors are required to make judgements, 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 recognised on the period in which the estimates is revised if the revision affects only that period or in the period of the revision and future if the revision affects both current and future periods.

2.4.1 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 for 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 of the property, plant and equipment.

2.4.2 Impairment and allowances for credit loss policies

IFRS 9 the impairment model applies to financial assets measured at amortised cost (for example loans and advances, trade and other receivables, cash and cash equivalents) and corporate debt investments measured at FVOCI, but not to investments in equity instruments. As a consequence of the standard, the Board has revised its impairment methodology under IFRS 9 for each of these classes of assets. The impact of the change in impairment methodology on the Board's total funds and reserves.



NOTES TO THE FINANCIAL STATEMENTS

for the year ended 31 December 2024

The ECL impairment loss allowance is an unbiased, probability-weighted amount determined by evaluating a range of possible outcomes that reflects reasonable and supportable information that is available without undue cost or effort of past events, current conditions and forecasts of forward-looking economic conditions.

The ECL model is dependent on the availability of relevant and accurate data to determine whether a significant increase in credit risk occurred since initial recognition, the probability of default (PD), the loss given default (LGD) and the possible exposure at default (EAD). Of equal importance is sound correlation between these parameters and forward-looking economic conditions.

ECL reflects an entity's own expectations of credit losses. However, when considering all reasonable and supportable information that is available without undue cost or effort in estimating ECL, an entity should also consider observable market information about the credit risk of the particular financial instrument or similar financial instruments.

In the absence of sufficient depth of data, management apply expert judgment within a governance framework to determine the required parameters. The expert judgement process is based on available internal and external information. Estimates regarding credit risk parameters and the impact of forward-looking information used in the calculation of the ECL loss amount should be reviewed at each reporting date and updated if necessary. The ECL loss amount depends on the specific stage where the financial instrument has been allocated to within the ECL model:

- Stage 1: At initial recognition a financial instrument is allocated into stage 1, except for purchased or originated credit impaired financial instruments.
- Stage 2: A financial instrument is allocated to stage 2 if there has been a significant increase in credit risk since initial recognition of the financial instrument.
- Stage 3: A financial instrument is allocated to stage 3 if the financial instrument is in default or is considered to be credit impaired.

Under IFRS 9, impairment loss allowances are measured on either of the following bases:

- i. 12-month ECLs: these are ECLs that result from possible default events within the 12 months after the reporting date; and
- ii. Lifetime ECLs: these are ECLs that result from all possible default events over the expected life of a financial instrument.

The Board has elected to apply the IFRS 9 simplified approach in measuring expected credit losses. This uses a provision matrix when determining the lifetime expected loss allowance for all trade receivables. When determining whether the credit risk of a financial asset has increased significantly since initial recognition and when estimating ECLs, the Board considers quantitative and qualitative information, based on the Board's his torical



NOTES TO THE FINANCIAL STATEMENTS

for the year ended 31 December 2024

experience, credit assessment and including forward-looking information. The Board's assessment of a significant increase in credit risk from initial recognition consists of a primary and secondary risk driver as follows:

- i. The primary risk driver aligns to the quantitative credit risk assessments performed, such as the credit score, credit rating, probability of default or arrears aging of a financial instrument.
- ii. The secondary risk assessment considers a broad range of qualitative risk factors based on a forward looking view such as economic and sector outlooks. The secondary risk assessment can be performed on a portfolio basis as opposed to a quantitative assessment at a financial instrument level.

2.4.3 Growing crops

Growing crops are valued at the total cost of establishing the crop as at year end because the tobacco is not grown for commercial purposes but for the research and experimental purposes. Tobacco Research Board is not a commercial entity.

2.4.4 Valuation of tobacco seed inventory

Tobacco seed inventory is valued at standard cost using the best estimate of the average costs which are accumulated in the production process. This estimate is reviewed annually on the basis of the circumstances prevailing at each statement of financial position date and revised accordingly. The standard cost used was ZWG5.89.

2.5 ADOPTION OF NEW AND REVISED STANDARDS

2.5.1 New and revised standards that are effective for annual periods beginning on or after January 1, 2024

2.5.1.1 Amendments to IAS 1 and IFRS Practice Statement 2

Amendments to IAS 1 require that a Company discloses its material accounting policies instead of significant accounting policies. Further amendments explain how a Company can identify a material accounting policy. The developed guidance and examples to explain and demonstrate the application of the four-step materiality process.

A four step materiality process

- Step 1 Identify information that has the potential to be material
- Step 2 Assess whether the information identified in Step 1 is in fact material by considering quantitative (size) and qualitative (nature) factors.
- Step 3 Organise the information within the draft financial statements in a manner that supports clear and concise communication.



NOTES TO THE FINANCIAL STATEMENTS

for the year ended 31 December 2024

Step 4 – Assess the information provided in the draft financial statements as a whole by considering whether it is material both individually and in combination with other information.

2.5.1.2 IAS 8 Accounting policies changes in accounting estimates effective for annual periods beginning on or after 1 January 2024

A definition of accounting estimates (Amendments to IAS 8) to help entities to distinguish between accounting policies and accounting estimates.

The definition of accounting estimates, are monetary amounts in financial statements that are subject to measurement uncertainty.

Entities develop accounting estimates if accounting policies require items in financial statements to be measured in a way that involves measurement uncertainty.

Clarification was made on a change in accounting estimate that results from new information or new development is not a correction of an error. Furthermore, the effects of a change in an input or a measurement technique used to develop an accounting estimate are changes in accounting estimates if they do not result from the correction of prior periods errors.

A change in an accounting estimate may affect only the current period's profit or loss, or the profit or loss of both the current period and future periods. The effect of the change relating to the current period is recognized as income or expense in the current period. The effect if any, on future periods is recognized as income or expense in those future periods.

2.5.1.3 IFRS 9 Financial Instruments amendments effective 01 January 2024

The amendments to IFRS 9 clarify the treatment of fees when applying the 10% test for derecognition of financial liabilities. These changes aim to reduce diversity in practice and improve consistency in accounting and for modifications or exchanges of financial liabilities.

Under IFRS 9, if the terms of a financial liability are modified, an entity must assess whether the change is substantial by comparing the present value of the modified cash flows to the original liability's present value—a difference of 10% or more triggers derecognition.

The amendment specifies that fees paid by the borrower (e.g., prepayment penalties) must be deducted from the liability's carrying amount before applying the test, while fees



NOTES TO THE FINANCIAL STATEMENTS

for the year ended 31 December 2024

received by the borrower (e.g., waivers) must be added to the carrying amount. This ensures fees do not distort the assessment and promotes consistency in derecognition decisions. The change particularly impacts entities with frequent debt modifications, such as banks and corporates refinancing loans, by reducing structuring opportunities and improving comparability in financial reporting.

3 Summary of significant accounting policies

3.1 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 recognized 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.

3.2 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



NOTES TO THE FINANCIAL STATEMENTS

for the year ended 31 December 2024

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 recognized 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 recognized for the asset (or cash-generating unit) in prior years. A reversal of impairment is recognized 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.

3.3 Financial instruments

Financial instruments are contracts that give rise to financial assets or financial liabilities. Financial assets and financial liabilities are recognized on the Board's statement of financial position when the Board becomes a party to the contractual provisions of the instrument. These instruments are generally carried at their estimated carrying values.

Non-derivative financial instruments carried in the statement of financial position comprise: cash and cash equivalents, trade and other receivables, trade and other payables. These instruments are recognized initially at fair value plus any directly attributable transaction costs.



NOTES TO THE FINANCIAL STATEMENTS

for the year ended 31 December 2024

3.3.1 Financial assets

The Board's principal financial assets are trade and other receivables, treasury bills and cash and cash equivalents. Financial assets, for which fair value can be reliably determined with reference to an active market, are initially recognised 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.

3.3.2 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 realize 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.

3.3.3 Derecognition of financial liabilities

The Board derecognizes 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 derecognized and the consideration paid and payable is recognised in the revenue and expenditure statement.

3.4 Inventories

Inventories are stated at the lower of cost and net realizable value. Costs of inventories are determined on a weighted average basis.

3.5 Government grants

Government grants are not recognised until there is reasonable assurance 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 recognizes as expenses the related costs for which the grants are intended to compensate.



NOTES TO THE FINANCIAL STATEMENTS

for the year ended 31 December 2024

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.

3.6 Foreign currencies

The functional and presentation currency is Zimbabwe Gold (ZWG). 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 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.

3.7 Revenue from contracts with customers

Revenue from contracts with customers is recognised when control of the goods or services are transferred to the customer (that is, when the Board delivers its performance obligation under the contract) at an amount that reflects the consideration to which the Board expects to be entitled in exchange for those goods or services. There is no requirement to disclose information about remaining performance obligations as all contracts have an expected duration of less than one year.



NOTES TO THE FINANCIAL STATEMENTS

for the year ended 31 December 2024

3.7.1 Sale of goods

The Board's revenue from sale of goods is mainly from sale of tobacco seeds, tobacco crop and tobacco seedlings, pine bark and float trays. Revenue from sale of goods is recognised at the point in time when control of the asset is transferred to the customer, generally on delivery of the goods.

3.7.2 Rendering of services

Revenue from services rendered are mainly from laboratory analysis services. Revenue from sale of services is recognised at the point in time when the performance obligations are satisfied as services are rendered.

3.7.3 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.

3.8 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.

3.9 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, considering the risks and uncertainties surrounding the obligation. When a provision is measured using the cash



NOTES TO THE FINANCIAL STATEMENTS

for the year ended 31 December 2024

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.

3.9.1 Provisions 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.

3.9.2 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.

3.10 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.



NOTES TO THE FINANCIAL STATEMENTS

for the year ended 31 December 2024

3.11 Agricultural activities

The Board grows tobacco principally for research purposes. Agricultural produce, biological assets are measured at cost. This accounting treatment does not comply with the requirements of IAS 41 "Agriculture", because the tobacco is not grown for commercial purposes but for the research and experimental purposes. Tobacco Research Board is not a commercial entity.

3.12 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;
- bow 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.

3.13 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].



NOTES TO THE FINANCIAL STATEMENTS

Totals 2023 ZWG	145 056 476 178 499 802 (33 443 326)	77 176 017	(477 060) (551 439) 74 379	(5 206 911)	216 548 523 255 124 380 (38 575 857)
Totals 2024 ZWG	216 548 523 255 124 380 (38 575 857)	18 491 402	(700 747)	(12 174 579)	222 164 599 272 677 890 (50 513 291)
Work in Progress ZWG	1 728 955 1 728 955	1 138 178	(419 447)	1	2 447 687 2 447 687
Furniture and office equipment ZWG	8 359 082 11 858 485 (3 499 403)	4 445 710	(262 457) (330 006) 67 549	(1727577)	10 814 759 15 974 189 (5 159 430)
Motor vehicles ZWG	21 673 699 36 735 343 (15 061 644)	256 051	(18 844) (188 440) 169 596	(5 321 167)	16 589 738 36 802 954 (20 213 216)
Laboratory equipment ZWG	10 643 149 12 534 105 (1 890 956)	278 537	1 1 1	(900 219)	10 021 467 12 812 642 (2 791 175)
Farm plant and Laboratory machinery equipment ZWG ZWG	20 696 020 28 317 554 (7 621 534)	11 589 401	1 1 1	(2 277 363)	30 008 058 39 906 955 (9 898 897)
Land and F buildings ZWG	153 447 617 163 949 937 (10 502 320)	783 526	SI.	(1948254)	152 282 890 164 733 463 (12 450 573)
INFLATION ADJUSTED 4 Property, plant and equipment	Opening carrying amount Gross carrying amount Accumulated depreciation	Additions at cost	Disposals carrying amount Gross carrying amount Accumulated depreciation on disposals Revaluation	Depreciation for the year	Closing carrying amount Gross carrying amount Accumulated depreciation
I	•	024 ANNUAL	PEROPT		



NOTES TO THE FINANCIAL STATEMENTS

•									
4	rroperty, plant and equipment	Land and buildings ZWG	Farm plant and machinery ZWG	Laboratory equipment ZWG	Motor vehicles ZWG	Furniture and office equipment ZWG	Work In Progress ZWG	Totals 2024 ZWG	Totals 2023 ZWG
	Opening carrying amount	92 271 568	12 444 991	6 399 970	13 032 892	5 026 508	1 039 661	130 215 588	87 225 783
	Gross carrying amount Accumulated depreciation	98 586 853 (6 315 286)	17 027 994 (4 583 003)	7 537 045 (1 137 075)	22 089 803 (9 056 912)	7 130 779 (2 104 271)	1 039 661	153 412 135 (23 196 547)	107 336 021 (20 110 238)
	Additions at cost	783 526	9 286 600	183 556	154 538	2 944 460	960 470	14 313 150	46 407 707
	Disposals carrying amount Gross carrying amount Accumulated depreciation on disposal	1 1 1			(18844) (188440) 169596	(180 632) (227 010) 46 378	(419 447)	(618 923) (834 897) 215 974	(286 867) (331 593) 44 726
	Revaluation Depreciation for the year	(1 644 235)	(1 892 882)	(758 340)	(4 484 884)	(1 413 997)	ı	(10 194 338)	(3 131 035)
	Closing carrying amount Gross carrying amount Accumulated depreciation	91 410 859 99 370 379 (7 959 520)	19 838 709 26 314 594 (6 475 885)	5 825 185 7 720 600 (1 895 415)	8 683 702 22 055 902 (13 372 200)	6 376 339 9 848 229 (3 471 890)	1 580 684 1 580 684	133 715 477 166 890 388 (33 174 911)	130 215 588 153 412 135 (23 196 547)



NOTES TO THE FINANCIAL STATEMENTS

for the year ended 31 December 2024

INFLATION ADJUSTED

HISTORICAL COST

		INFLATION	ADJUSTED	HISTORIC	AL COST
		2024	2023	2024	2023
		ZWG	ZWG	ZWG	ZWG
5	Financial assets at amortised cost	2,,,	2,113	2,,,0	200
5.1	Long term investments				
3.1	CABS	1 198	1 091	763	656
	Imara	7 308 061	1 236 021	6 815 288	743 248
	Total	7 309 259	1 237 112	6 816 051	743 248
	Total	1 309 239	1 23/ 112	0 010 031	/43 904
	CABS investment for ZWG763 is held as security for	r mortgage loans	taken for 10 yea	rs.	
6	Biological assets				
6.1	Non-current biological assets				
	Horses	10 964	15 938	6 668	9 584
	Dogs	151 602	199 963	85 692	120 242
	Depreciation	(90 645)	(116 840)	(54 153)	(70 258)
	•	71 921	99 061	38 206	59 568
6.2	Current biological assets				
	Tobacco	9 799 918	26 350 327	9 799 918	15 845 055
		9 799 918	26 350 327	9 799 918	15 845 055
					_
7	Inventories				
	Tobacco seed	62 282 428	66 821 249	52 559 011	40 181 148
	Potato Seed	60,391,323	56 205 215	50 963 142	33 797 484
	Other consumables	19 353 959	16 820 679	16 332 455	10 114 660
	Chemicals	72 180	49 760	60 911	29 922
		142 099 890	139 896 904	119 915 519	84 123 213
8	Trade and other receivables				
U	Amounts owing for services and sales		_	_	_
	Seedling stop order receivables	127 033 797	18 212 449	127 033 797	10 951 563
	Value added tax refund	3 140 547	203 942	3 140 547	122 635
	Staff loans	1 334 500	165 926	1 334 500	99 775
	Other receivables	73 197 761	2 198 447	73 197 761	1 321 977
	Calc. 10001140100	204 706 605	20 780 764	204 706 605	12 495 950
	Less: Allowance for credit losses	(27 859 978)	(2 293 225)	(27 859 978)	(1 378 969)
	2000. Time maries for elegate roopes	(27 00)	(22)3223)	(2, 00)	(13/0/0)

176 846 627

18 487 539

176 846 627

11 116 981



NOTES TO THE FINANCIAL STATEMENTS

for the year ended 31 December 2024

		INFLATIONAL	L ADJUSTED	HISTORIC	CAL COST
		2024	2023	2024	2023
		ZWG	ZWG	ZWG	ZWG
9	Cash and cash equivalents				
	Cash at bank	84 750 933	11 634 795	84 750 933	6 996 269
	Cash on hand	34 417	5 355	34 417	3 220
	Money market investments	4 877 831	707 161	4 877 831	425 232
		89 663 181	12 347 311	89 663 181	7 424 721
9.1	Money market investments				
	Tetrad Investment Bank Limited	795 309	529	318	318
	CBZ Bank Limited	4 877 831	707 161	4 877 831	425 232
		5 673 140	707 691	4 878 149	425 551
	Allowance for impairment for Tetrad Investment	(795 309)	(529)	(318)	(318)
	-	4 877 831	707 161	4 877 831	425 232
10	Tundo and other navables				
10	Trade and other payables				
	m 1 11	51 542 140	10.602.270	51 540 140	C 100 551
	Trade payables	51 543 148	10 682 370	51 543 148	6 423 554
	Trade payables	51 543 148 51 543 148	10 682 370 10 682 370	51 543 148 51 543 148	6 423 554 6 423 554
11					
11	Provisions	51 543 148	10 682 370	51 543 148	6 423 554
11	Provisions Provision for Audit fees	51 543 148 550 282	10 682 370 664 450	51 543 148 464 373	6 423 554 399 549
11	Provisions Provision for Audit fees Provisions for leave pay	51 543 148 550 282 21 738 748	10 682 370 664 450 14 085 060	51 543 148 464 373 18 344 933	399 549 8 469 669
11	Provisions Provision for Audit fees	51 543 148 550 282	10 682 370 664 450	51 543 148 464 373	6 423 554 399 549
	Provisions Provision for Audit fees Provisions for leave pay Provisions	51 543 148 550 282 21 738 748	10 682 370 664 450 14 085 060	51 543 148 464 373 18 344 933	399 549 8 469 669
11	Provisions Provision for Audit fees Provisions for leave pay Provisions Short-term loan	51 543 148 550 282 21 738 748 22 289 030	10 682 370 664 450 14 085 060 14 749 510	51 543 148 464 373 18 344 933 18 809 306	399 549 8 469 669 8 869 218
	Provisions Provision for Audit fees Provisions for leave pay Provisions	51 543 148 550 282 21 738 748	10 682 370 664 450 14 085 060	51 543 148 464 373 18 344 933	399 549 8 469 669

The ZLT loan will be repaid in full from proceeds of sale of tobacco during the 2024/2025 tobacco marketing season before any payments are made to the Tobacco Research Board. Tobacco Research Board has a contract to grow and sell tobacco to ZLT.



NOTES TO THE FINANCIAL STATEMENTS

		INFLATION	N ADJUSTED	HISTORIC	CAL COST
		2024	2023	2024	2023
		ZWG	ZWG	ZWG	ZWG
13	Revenue				
	Sale of goods	368 529 376	423 236 896	244 194 721	254 502 041
	Rendering of services.	10 628 458	23 648 446	8 326 334	14 220 352
		379 157 834	446 885 342	252 521 055	268 722 394
	An analysis of the revenue for the year is as follo	ws;			
13.1	Sale of goods				
	Tobacco seed sales	248 467 357	285 898 673	154 547 763	171 917 422
	Tobacco crop sales	15 833 321	22 663 256	9 919 023	13 627 935
	Gromix	13 869 946	15 875 934	9 701 510	9 546 563
	Float trays	8 242 992	9 012 980	5 670 948	5 419 711
	Seedling production	4 834 366	2 782 933	3 476 284	1 673 441
	Gum seedlings	268 728	728 110	178 305	437 829
	Floatfert	6 449 057	6 289 805	4 780 161	3 782 204
	Horticultural products	947 871	825 378	735 321	496 319
	Sweet Potato	9 722	28 605	9 063	17 201
	Seed Potato	69 441 191	79 131 222	55 011 518	47 583 416
		368 364 551	423 236 896	244 029 896	254 502 041
13.2	Rendering of services				
	Laboratory analysis	10 628 458	23 648 446	8 326 334	14 220 352
		10 628 458	23 648 446	8 326 334	14 220 352
	Total revenue	378 993 009	446 885 342	252 356 230	268 722 394
14	Cost of sales				
14.1	Cost of goods sold	1 502 027	2 120 207	1.024.052	1 205 065
	Gromix	1 583 827	2 138 397	1 024 852	1 285 867
	Float trays	5 415 218	610 685	5 064 029	367 219
	Tobacco Seed production	2 027 617	3 768 930	1 363 281	2 266 344
	Tobacco Seedlings	-	- 21 255	-	12.701
	Gum seedlings	1 020 202	21,255	1 120 275	12 781
	Floatfert	1 839 282	3 299 066	1 130 275	1 983 804
		121 010	2 400	107 202	2 000
	Horticultural products	121 919	3 490	107 302	2 099
	Seed Potato	20 590 091	34 579 973	16 370 489	20 793 730
		20 590 091 3 180 550	34 579 973 11 544 623	16 370 489 1 935 046	20 793 730 6 942 046
14 2	Seed Potato Tobacco crop	20 590 091	34 579 973	16 370 489	20 793 730
14.2	Seed Potato Tobacco crop Cost of rendering services	20 590 091 3 180 550 34 758 504	34 579 973 11 544 623 55 966 419	16 370 489 1 935 046 26 995 274	20 793 730 6 942 046 33 653 890
14.2	Seed Potato Tobacco crop	20 590 091 3 180 550 34 758 504	34 579 973 11 544 623 55 966 419 2 172 170	16 370 489 1 935 046 26 995 274 834 541	20 793 730 6 942 046 33 653 890 1 306 176
14.2	Seed Potato Tobacco crop Cost of rendering services	20 590 091 3 180 550 34 758 504	34 579 973 11 544 623 55 966 419	16 370 489 1 935 046 26 995 274	20 793 730 6 942 046 33 653 890
14.2	Seed Potato Tobacco crop Cost of rendering services	20 590 091 3 180 550 34 758 504	34 579 973 11 544 623 55 966 419 2 172 170	16 370 489 1 935 046 26 995 274 834 541	20 793 730 6 942 046 33 653 890 1 306 176
14.2	Seed Potato Tobacco crop Cost of rendering services	20 590 091 3 180 550 34 758 504 1 264 304 1 264 304	34 579 973 11 544 623 55 966 419 2 172 170 2 172 170	16 370 489 1 935 046 26 995 274 834 541 834 541	20 793 730 6 942 046 33 653 890 1 306 176
14.2	Seed Potato Tobacco crop Cost of rendering services Laboratory analysis Government grant	20 590 091 3 180 550 34 758 504 1 264 304 1 264 304 36 022 808	34 579 973 11 544 623 55 966 419 2 172 170 2 172 170 58 138 589	16 370 489 1 935 046 26 995 274 834 541 834 541 27 829 815	20 793 730 6 942 046 33 653 890 1 306 176 1 306 176 34 960 066
	Seed Potato Tobacco crop Cost of rendering services Laboratory analysis	20 590 091 3 180 550 34 758 504 1 264 304 1 264 304	34 579 973 11 544 623 55 966 419 2 172 170 2 172 170	16 370 489 1 935 046 26 995 274 834 541 834 541	20 793 730 6 942 046 33 653 890 1 306 176 1 306 176



NOTES TO THE FINANCIAL STATEMENTS

		ADJUSTED	HISTORIC	
	2024	2023	2024	2023
16.00	ZWG	ZWG	ZWG	ZWG
16 Other income				
Rental	1 321 470	336 000	925 744	202 044
Royalties		11 029	.	6 632
Exchange Gains	287 861 125	260 619 297	212 511 916	156 716 354
Sundry	731 988	10 520 075	692 922	6 325 962
	289 914 583	271 486 400	214 130 582	163 250 992
17 Staff costs				
Salaries and allowances	141 111 486	158 860 835	107 946 962	95 526 660
NSSA	4 704 665	4 010 634	3 569 731	2 411 686
Pension costs	7 554 740	5 515 405	5 730 115	3 316 539
Standard levy	903 543	872 680	733 220	524 762
Medical aid	9 427 003	12 640 759	7 697 524	7 601 178
NEC	192 597	228 256	150 281	137 256
Leave pay Provision	22 590 830	17 252 668	21 283 306	10 374 425
Bonus provision	17 345 760	13 152 095	17 321 550	7 908 656
Other employment costs	11 479 171	1 994 067	10 202 863	1 199 078
	215 309 795	214 527 400	174 635 552	129 000 240
18 Administrative expenses				
Audit fees	567 447	664 450	464 373	399 549
Directors' emoluments	676 561	1 223 276	528 670	735 584
Depreciation charge for the year	12 188 364	3 642 153	10 205 910	2 190 110
Allowance for credit losses	26 481 009	18 470 843	26 481 009	11 106 941
Computers costs	770 553	1 988 025	530 801	1 195 445
Travelling	5 602 172	9 299 260	4 009 686	5 591 858
Repairs and maintenance	12 912 114	27 143 554	10 300 494	16 322 041
Staff training	2 864 151	5 007 756	2 175 848	3 011 279
Consultancy/ Legal fees	2 073 401	2 776 660	1 584 778	1 669 670
Utilities	6 195 498	7 254 508	4 579 263	4 362 302
Loss on Assets Disposal	126 132	14 347	126 132	8 627
Motor vehicle expenses	12 056 337	19 474 731	9 070 887	11 710 602
Insurance	3 533 478	2 776 967	2 459 324	1 669 854
Security	4 052 152	6 559 672	3 351 979	3 944 481
Telephone	4 227 228	7 203 155	3 187 882	4 331 422
Bank charges	2 258 622	5 123 174	2 258 622	3 080 682
Administration overheads	7 703 185	10 043 303	6 105 523	6 039 268
	104 288 403	128 665 835	87 421 181	77 369 714



NOTES TO THE FINANCIAL STATEMENTS

for the year ended 31 December 2024

		INFLATION A	ADJUSTED	HISTORIC	CAL COST
		2024	2023	2024	2023
		ZWG	ZWG	ZWG	ZWG
19	Operations expenses				
	Tobacco seed selling costs	78 744	654 000	60 967	393 265
	Tobacco selling costs	603 980	1 796 423	387 537	1 080 230
	Fumigants and Insecticides	2 566 104	851 353	1 706 505	511 938
	Periodical subscriptions	1 334 976	1 926 917	916 069	1 158 699
	Utilities	317 393	1 643 182	246 851	988 083
	Small equipment purchase	3 350 520	3 753 842	2 648 650	2 257 271
	Seedbed and Greenhouse costs	6 104 445	4 062 025	4 282 637	2 442 589
	Tractors costs-fuel, oil and grease	965 240	1 461 907	674 135	879 078
	Tractors repairs and maintenance	936 798	2 437 924	596 714	1 465 979
	Laboratory Costs	2 300 558	4 722 047	1 924 015	2 839 475
	Field Marketing	1 781 227	6 247 858	1 513 564	3 756 980
	Grower Services	551 886	353 124	343 882	212 341
	Agricultural show expenses	1 156 709	2 147 566	721 277	1 291 380
		22 048 577	32 058 167	16 022 805	19 277 311
20	Finance income/cost				
20.1	Finance income	15 317 833	11 349 793	15 317 833	6 824 890
	Interest on short term deposits	10 553 373	6 368 996	10 553 373	3 829 823
	Interest on cash and cash equivalents	4 764 461	4 980 796	4 764 461	2 995 067
20.2	Finance costs	(4 417 675)	(6 177 569)	(4 417 675)	(3 714 714)
	Bank interest	(4417675)	(6 177 569)	(4417675)	(3 714 714)
	Built interest	(1117-073)	(0 177 203)	(1 117 075)	(3 /11 /11)
	Net finance income	10 900 158	5 172 224	10 900 158	3 110 177
21	Related party transactions				
21.1	• •	13 722 064	82 974	6 250 656	49 894

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

21.2 Directors' remuneration	Total	Total	Total	Total
Chairperson	98 108	247 813	82 791	149 016
Board members	528 316	1 684 708	445 836	1 013 053
	626 424	1 932 521	528 628	1 162 069
21.3 Compensation to key management				
Salaries	17 935 810	36 616 885	15 135 704	22 018 572
Pension	1 414 179	2 160 778	1 193 400	1 299 325
Other benefits	1 603 617	7 585 148	1 353 263	4 561 123
	20 953 606	46 362 810	17 682 367	27 879 020



NOTES TO THE FINANCIAL STATEMENTS

for the year ended 31 December 2024

22 Retirement benefit plans

22.1 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 [Chapter 17:04].

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

Amounts charged in the Board's Revenue and Expenditure statement are as follows:

Tobacco Research Board Pension Fund National Social Security Authority

INFLATION	ADJUSTED	HISTORI	CAL COST
2024	2023	2024	2023
ZWG	ZWG	ZWG	ZWG
7 554 740	5 515 405	5 730 115	3 316 539
4 704 665	4 010 634	3 569 731	2 411 686
12 259 405	9 526 039	9 299 846	5 728 226

23 Risk management

23.1 Financial risk management

Tobacco Research Board defines risk as the possibility of losses which may be caused by internal or external factors. The Board provides oversight over the risk policies through the Internal Audit division. The Board regularly reviews its risk management policies and systems to reflect changes in operations.

23.2 Interest rate risk management

The only financial instruments that are sensitive to interest rate risk are money market investments, bank balances and cash. TRB is always on the lookout for the fluctuations in the prevailing levels of market interest rates.

23.3 Credit risk management

Credit risk refers to the risk that a counterpart will default on its contractual obligations resulting in financial loss to the Board. 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.



NOTES TO THE FINANCIAL STATEMENTS

for the year ended 31 December 2024

23.4 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.

24 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.

25 Commitments to expenditure

Commitments for the acquisition of property, plant and equipment

AL COST	HISTORIC	ADJUSTED	INFLATION	
ZWG	ZWG	ZWG	ZWG	
47 046 145	71 263 197	78 237 738	118 510 696	

