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RESEARCH AND TRAINING DIVISION

Annual Report 2024



Forestry Commission of Zimbabwe

Advancing Zimbabwe's Forestry Sector Through
Evidence-Based Research and Skills Development

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EXECUTIVE SUMMARY

The Research and Training Division achieved significant milestones in 2024, demonstrating strong performance across forestry research, training, and capacity building initiatives. Despite funding constraints and operational challenges, the division maintained its commitment to advancing Zimbabwe’s forestry sector through evidence-based research, skills development, and international collaboration.

Key Highlights:

- 1. Established 6 permanent monitoring plots under the GEF-7 project
- 2. Produced 19 scientific publications and key reports
- 3. Graduated 119 forestry professionals with a 97% pass rate
- 4. Collected and processed 1,125kg of tree seeds (94% of target)
- 5. Secured €1.5 million funding for the Zimbabwe-Mozambique Miombo project
- 6. Successfully hosted a Regional Forest Conference

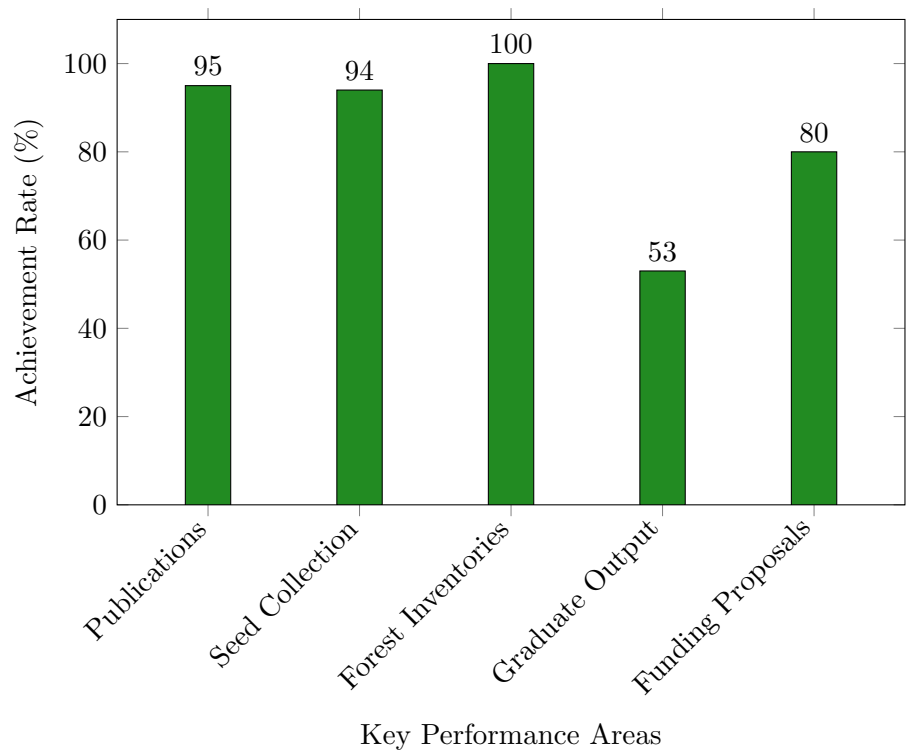


Figure 1: Overall Performance Summary - Key Performance Indicators Achievement Rates for 2024

1 DIVISION OVERVIEW

1.1 Organizational Structure

The Research and Training Division operates through two main sub-programmes: (1) Research and Development, and (2) Forestry Skills Training.

Research and Development sub-programme:

- Four (4) research stations and two (2) satellite sites (Ngungunyana and Mtao)
- Focus areas include tree improvement, forest mapping and inventory, forest health, tree seed production, forest statistics and silviculture

Forestry skills training sub-programme:

Zimbabwe College of Forestry (ZCF) offers certificate and diploma programs in forestry and primary wood processing specializations. The College also offers conventional and tailor-made short courses in various forest disciplines including nursery management, firefighting and sustainable forest management.

1.2 Strategic Focus Areas

The division operates across eight key thematic areas:

1. Tree improvement and genetic resources
2. Forest monitoring and assessment
3. Forest health management
4. Germplasm production and seed supply
5. Forestry skills training and education
6. Resource mobilization and partnerships
7. Climate change mitigation and adaptation
8. Knowledge dissemination and technology transfer

2 PERFORMANCE FRAMEWORK

2.1 Key Performance Indicators (KPIs)

Table 1: Key Performance Indicators Framework

Outcome	Key Outputs	Performance Indicators
Enhanced Forest Information and Technology	Research trials, publications, technological innovations, seed collection, mapping products, forest inventories	Publications, Seed collected (kg), Maps produced, Forest inventories completed
Strengthened Resource Mobilization	Project proposals, research partnerships, collaborative agreements	Funding proposals developed, Partnership agreements
Improved Human Resource Capacity	Trained graduates, skilled professionals	Forestry graduates produced

2.2 Performance Summary

Overall Performance Rating: 85%

Table 2: 2024 Performance Achievement Summary

KPI	Target	Achievement	Rate (%)	Status
Publications	20	19	95%	Excellent
Seed Collection (kg)	1,200	1,125	94%	Excellent
Forest Inventories	8	8	100%	Excellent
Graduate Output	225	119	53%	Below Target
Funding Proposals	10	8	80%	Good

**Graduate output affected by external enrollment factors*

3 MAJOR ACHIEVEMENTS AND MILESTONES

3.1 Forest Monitoring, Restoration, and Climate Reporting

3.1.1 Permanent Monitoring Network Expansion

Under the GEF-7 Save-Runde Catchment project, six (6) permanent monitoring plots were established in Buhera and Masvingo districts. These plots serve multiple purposes:

1. Quantification of Forest Genetic Resources
2. Assessment of ecosystem services contribution
3. Carbon sequestration monitoring
4. Biodiversity conservation evaluation

3.1.2 Climate Commitments and International Reporting

UNFCCC Forest Reference Emission Level (FREL)

A technical workshop in Bulawayo addressed UNFCCC comments on Zimbabwe’s inaugural FREL submission (April 2024). Key outcomes included:

1. Refined national greenhouse gas accounting methodologies
2. Enhanced credibility of forest carbon reporting under the Paris Agreement
3. Strengthened technical capacity for climate reporting

Restoration Impact Assessment

Under the GEF-6 project, permanent plots in the Lower Zambezi Valley were re-measured, providing critical data on:

1. Forest regrowth patterns
2. Biomass accumulation rates
3. Ecosystem recovery indicators
4. Restoration intervention effectiveness

3.1.3 Advanced Mapping and Spatial Analysis

Four comprehensive mapping products were developed:

1. GEF-7 Land Cover Map - Detailed land use classification for project areas
2. Temporal Analysis Maps (2016 and 2022) - Probability maps for land cover change assessment
3. National Vegetation Type Map - Updated classification of Zimbabwe's forest and vegetation resources
4. Targeted Restoration Maps - Woodland areas identified for conservation in Chipinge, Chimanimani, Buhera, Shurugwi, and Masvingo districts

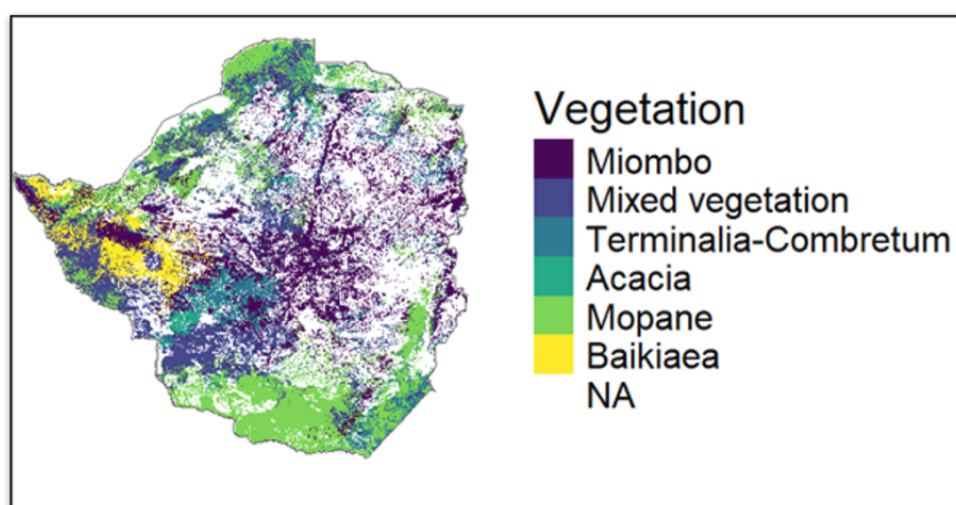


Figure 2: Updated National Vegetation Type Map (2024) showing the comprehensive classification of Zimbabwe's diverse forest and vegetation resources. The map displays major vegetation types including Miombo woodland, Mixed vegetation, Terminalia-Combretum savanna, Acacia woodland, Mopane woodland, and Baikiaea forests. This updated classification was developed through advanced remote sensing techniques combined with extensive ground-truthing activities, providing crucial baseline data for forest management, conservation planning, and climate change monitoring across Zimbabwe's diverse ecological zones.

3.2 Tree Improvement and Genetic Resources

3.2.1 Research Infrastructure Management

Existing Trial Maintenance:

- 14 research trials maintained across 33.3 hectares
- Activities included thinning, pruning, label replacement, slash weeding, fire protection

New Trial Establishment:

Three new trials established covering 6.1 hectares as detailed in Table 3.

Table 3: New Research Trials Established in 2024

Species	Location	Area (ha)
<i>Pinus taeda</i>	John Meikles Forest Research Station	3.0
<i>Pinus tecunumanii</i>	John Meikles Forest Research Station (Nyangui)	2.0
<i>Eucalyptus tereticornis</i>	Forest Research Centre (Mtao)	1.1
Total		6.1

3.2.2 Seed Production and Quality Assurance

The seed production program demonstrated remarkable resilience and efficiency in 2024, building upon the previous year’s achievements while adapting to challenging environmental conditions. This critical component of the Division’s mandate supports both national reforestation efforts and commercial forestry operations across Zimbabwe.

Collection Performance

Seed collection achieved 1,125kg (94% of 1,200kg target), representing a 6.84% increase from 2023 achievement of 1,053kg. This performance demonstrates the Division’s commitment to maintaining genetic diversity and ensuring sustainable forest regeneration.

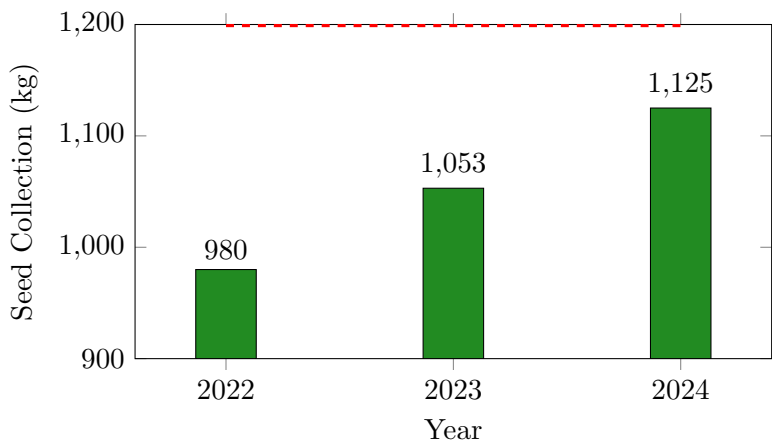


Figure 3: Seed Collection Performance Trends (2022-2024) showing consistent improvement towards target achievement with a 6.84% increase from 2023 to 2024

Table 4: Station-wise Seed Collection Performance in 2024

Station	Primary Species	Total (kg)
CFRS	<i>Eucalyptus camaldulensis</i>	185.0
FRC	<i>Eucalyptus grandis</i> , <i>Brachystegia spiciformis</i>	196.5
JMFRS	<i>Pinus patula</i> , <i>Eucalyptus grandis</i> , <i>Pinus taeda</i>	557.7
MFRS	<i>Khaya anthotheca</i> , <i>Pinus elliottii</i>	185.8
TOTAL		1,125.0

3.3 Digital Innovation and Knowledge Management

3.3.1 Technical Innovations

Emission Factors Development

Collaboration with the University of Edinburgh and CBIT project produced vegetation-type specific emission factors for land use change analysis, enhancing Zimbabwe’s greenhouse gas accounting capacity.

Digital Data Collection

Deployed Open Data Kit (ODK) platform for Forest Genetic Resources Inventory in Buhera and Masvingo, modernizing data collection processes and improving accuracy.

3.3.2 Knowledge Products and Dissemination

The Division’s knowledge dissemination efforts reached new heights in 2024, reflecting our commitment to evidence-based decision-making and scientific excellence. This substantial increase in publication output demonstrates the Division’s growing research capacity and its role as a leading source of forestry expertise in the region.

20 Publications were produced in 2024, compared to 12 produced in 2023, representing a remarkable 67% increase. This achievement includes three flagship reports that significantly contributed to national policy frameworks and international commitments:

- 1. 2022 Plantation Statistics Report: Comprehensive data on Zimbabwe’s forest plantations
- 2. Forest Reference Emission Level (FREL) Report: Climate change mitigation benchmarks
- 3. SDG 15 Chapter (3rd National Voluntary Report): Progress on ”Life on Land” sustainable development goal

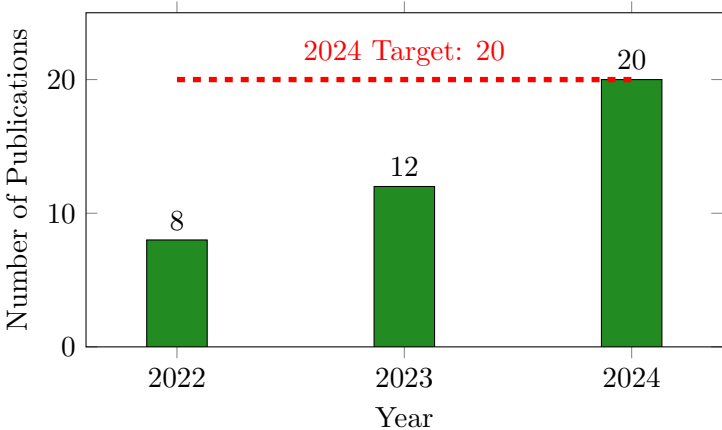


Figure 4: Publication Output Trends (2022-2024) demonstrating a consistent upward trajectory with a 67% increase from 2023, meeting the 2024 target and reinforcing the Division’s position as a leading research institution

The Division successfully hosted a Regional Forest Conference on October 30, 2024, bringing together experts, policymakers, and stakeholders for knowledge exchange on forest conservation and sustainable development. This high-profile event positioned Zimbabwe as a regional leader in forestry research and policy dialogue.



Figure 5: Regional Forest Conference 2024 hosted by the Forestry Commission on October 30, 2024. The conference brought together forestry experts, policymakers, researchers, and stakeholders from across the SADC region to share knowledge and best practices on sustainable forest management, climate change adaptation, biodiversity conservation, and regional cooperation in forestry development. This landmark event positioned Zimbabwe as a regional leader in forestry research and policy dialogue, fostering collaborative networks that will advance the sector's contribution to sustainable development goals.

3.4 Training Excellence

The Zimbabwe College of Forestry continued its tradition of academic excellence in 2024, adapting to evolving industry needs while maintaining high educational standards. Despite challenges in student recruitment, the College demonstrated its commitment to producing competent forestry professionals equipped with both theoretical knowledge and practical skills.

30th Graduation Ceremony Achievements

The 30th Graduation Ceremony marked a significant milestone in the College's history, celebrating not only individual student achievements but also the institution's three decades of contribution to forestry education in Zimbabwe and the region. The ceremony highlighted the College's role in building human capacity for sustainable forest management.

119 graduates successfully completed their programs in 2024, compared to 74 in 2023, representing a 61% increase in graduate output. Key achievements included:

1. 119 graduates successfully completed programs
2. 97% pass rate demonstrating academic excellence
3. Smooth academic year operations with no major disruptions

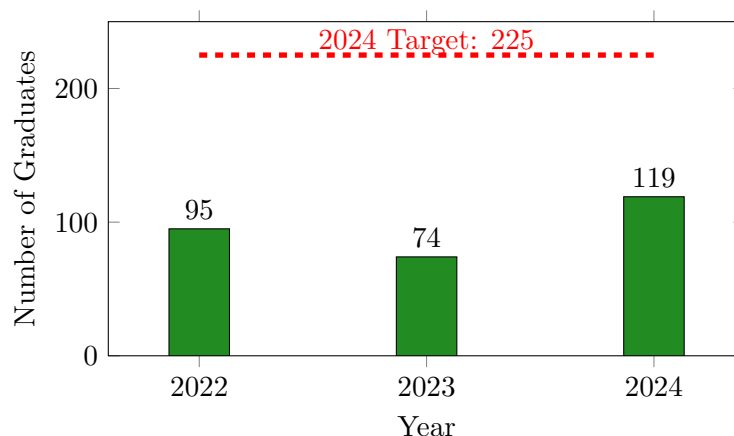


Figure 6: Graduate Output Trends (2022-2024) showing recovery in 2024 with a 61% increase from 2023, though still below the ambitious target of 225 due to external enrollment challenges

3.5 Resource Mobilization Success

3.5.1 Major Funding Achievement

Zimbabwe-Mozambique Miombo Project: €1.5 million secured in partnership with FAO for:

1. Sustainable forest management enhancement
2. Biodiversity conservation improvement
3. Community support in Miombo landscape
4. Cross-border environmental collaboration

3.5.2 Proposal Development

8 project proposals developed (80% of target), including:

1. Miombo Transboundary project
2. Multiple bilateral and multilateral funding applications

4 OPERATIONAL CHALLENGES AND RESPONSES

4.1 Critical Challenges Identified

4.1.1 Financial Constraints

Limited operational funding affected target achievement across multiple KPIs. As a response strategy, the Division pursued strategic partnerships with development partners such as FAO and UNDP to enhance resource mobilization.

4.1.2 Climate-Related Risks

Increased frequency and intensity of forest fires due to climate change affected multiple research plots, reversing years of investment. In mitigation, the Division enhanced fire prevention and early warning systems including climate-resilient trial design and management.

4.1.3 Infrastructure Limitations

Acute shortage of operational vehicles impacted research activities including field operation efficiency, seed collection activities, data collection timelines and trial establishment schedules.

As a coping strategy, the Division implemented fleet optimization (priority-based deployment strategies) and leveraged partnership arrangements for field mobility, especially for activities under funded projects such as GEF 6 and 7.

5 PERFORMANCE ANALYSIS AND VARIANCE REVIEW

5.1 Target vs. Achievement Analysis

Table 5: Comprehensive Performance Analysis - 2024 Targets vs Achievements

KPI	Annual Target	Achievement	Variance	Performance Rating
Publications	20	19	-5%	Excellent
Seed Collection (kg)	1,200	1,125	-6%	Excellent
Forestry Conference	1	1	0%	Excellent
Forest Inventories	8	8	0%	Excellent
Maps Produced	8	6	-25%	Good
Forestry Graduates	225	119	-47%	Below Target
Funding Proposals	10	8	-20%	Good

5.2 Success Factors

1. Strong technical capacity and expertise retention
2. Effective international partnerships and collaboration
3. Strategic project alignment with national priorities
4. Adaptive management approaches

5.3 Improvement Areas

1. Enhanced funding diversification strategies
2. Climate resilience infrastructure development
3. Digital transformation acceleration
4. Student recruitment and retention strategies

6 STRATEGIC OUTLOOK AND RECOMMENDATIONS

6.1 Priority Actions for 2025

1. **Infrastructure Development** - vehicle fleet expansion and research facility upgrades
2. **Climate Adaptation** - fire-resistant trial designs and climate-smart forestry practices
3. **Partnership Expansion** - strengthen international and regional collaborations
4. **Digital Transformation** - full implementation of digital data systems

6.2 Resource Requirements

1. **Operational funding** - enhanced budget allocation for core activities
2. **Infrastructure investment** - vehicle fleet and equipment modernization
3. **Human resources** - specialized technical capacity building
4. **Technology upgrade** - digital systems and laboratory equipment
5. **Partnership funding** - international collaboration and exchange programs

7 CONCLUSION

The Research and Training Division demonstrated resilience and adaptability in 2024, achieving significant milestones despite operational challenges. The Division's strong performance in knowledge production, international engagement, and partnership development positions it well for continued leadership in Zimbabwe's forestry sector.

The successful securing of the €1.5 million Zimbabwe-Mozambique Miombo project, coupled with research partnerships including the SEOSAW network with the University of Edinburgh, highlights the Division's growing influence and capability. Moving forward, addressing infrastructure constraints and enhancing climate resilience (fire hazards) will be critical for sustaining and expanding these achievements.

The division remains committed to advancing Zimbabwe's forestry sector through evidence-based research, quality education and strategic partnerships, contributing significantly to national sustainable development goals and international environmental commitments.

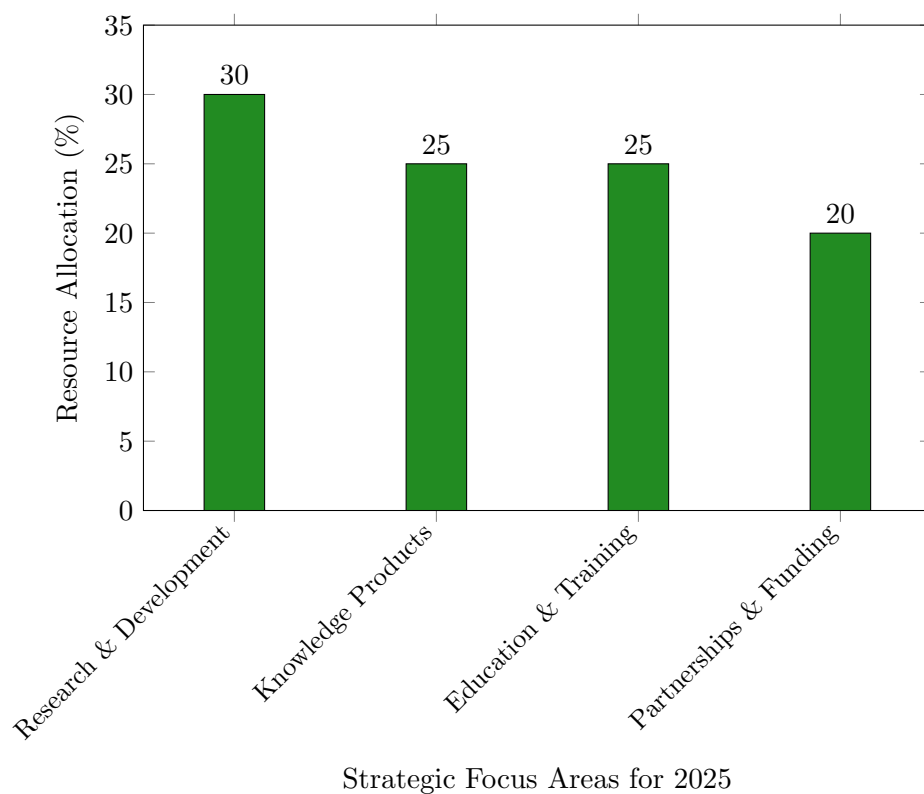


Figure 7: Division Resource Allocation and Focus Areas for 2025 Strategic Planning. The chart illustrates the planned distribution of divisional efforts and resources across four key strategic areas: Research & Development (30%), Knowledge Products & Publications (25%), Education & Training (25%), and Partnerships & Resource Mobilization (20%). This allocation reflects the Division's commitment to maintaining a balanced approach between core research activities, knowledge dissemination, human capacity building, and strategic partnership development.