



THE UNITED REPUBLIC OF TANZANIA

NATIONAL AUDIT OFFICE

4th INTOSAI WGEA AWARD: INNOVATIVE PRACTICES IN ENVIRONMENTAL AUDITING

CATEGORY 2: EMERGING ENVIRONMENTAL ISSUE IN AUDIT

PERFORMANCE AUDIT ON THE MANAGEMENT OF CARBON TRADE IN TANZANIA



CONTROLLER AND AUDITOR GENERAL

JUNE 2025

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- Carbon trading involves the buying and selling of carbon credits, which allow a country or entity to emit a certain amount of carbon dioxide or equivalent greenhouse gases. Tanzania actively participates in carbon trading as part of its strategy to reduce greenhouse gas emissions and contribute to global climate goals. The country generated TZS 36 billion by July 2024 from the sale of carbon credits in both compliance and voluntary markets.
- This audit aimed to assess the effectiveness of the Vice President's Office (VPO) in managing carbon trading activities to ensure they effectively emission reduction efforts and promote economic growth through the revenue generated.
- The audit found that only 4 out of 56 carbon trading projects were implemented due to inadequate oversight, limited sector involvement and low awareness. This led to a major shortfall in meeting the projected TZS 1.26 trillion annual revenue. Moreover, the GHG baseline data was outdated and focused solely on forestry, with no mechanism for regular updates. The VPO did not provide effective oversight, manage contracts, or ensure pricing transparency. Revenue from carbon trading was not reinvested in environmental efforts, and CSR activities lacked coordination.
- To address these issues, the audit recommended institutional reforms, including elevating the National Carbon Monitoring Centre (NCMC), enhancing monitoring systems, and establishing a national carbon crediting mechanism to promote transparency and accountability.

Audit Creation Process

The motivation for conducting the audit stemmed from the underperformance and management challenges of carbon trading in Tanzania. Reports from the 2023 International Transparency and Accountability Conference (ITAC) and the WAJIBU Institute highlighted an underdeveloped carbon market due to weak oversight, unfulfilled international climate funding commitments, and a lack of institutional and community capacity in greenhouse gas (GHG) monitoring and carbon trading.

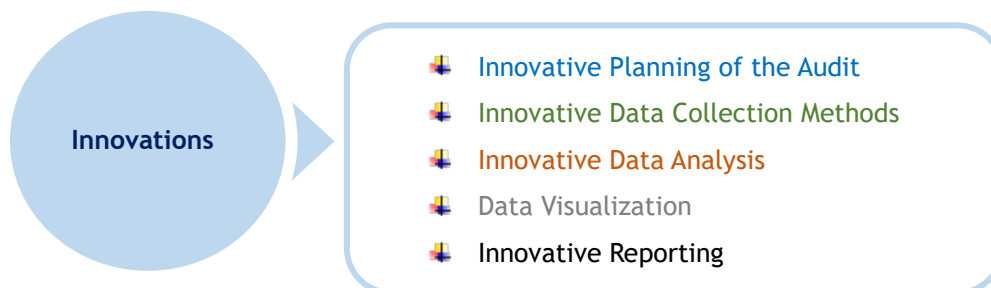


Additionally, Tanzania had only generated TZS 36 billion from carbon trading by July 2024, representing just 3% of its projected annual potential of TZS 1.26 trillion. This significant gap between potential and actual revenue, along with evident institutional and operational weaknesses, prompted the Controller and Auditor General (CAG) of the National Audit Office of Tanzania to conduct a performance audit.

For more detailed explanations, refer to [pages 2 to 5](#) of the official [Performance Audit Report on the Management of Carbon Trade](#).

Innovative Approach

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Appendix 1 of this document indicates the summary of how this audit was innovative.

3.1 Innovative Planning of the Audit

In this audit, the team used a combined approach that integrated the examination of problems, systems and results related to carbon trading activities in the country. This included identifying issues during the development and dissemination of baseline data, Initiation and planning of carbon trade activities, management of contract agreements for carbon trade, and implementation of carbon trade. ([Page 5](#) of the [Performance Audit Report on the Management of Carbon Trade](#))

By synthesising data from multiple government bodies, project implementers, and sectors (e.g., forestry, energy), the auditors identified systemic weaknesses in capacity, oversight, and regulatory compliance. This method helped uncover root causes and inform targeted recommendations. For detailed information, refer to [pages 26 to 66](#) of the [Performance Audit Report on the Management of Carbon Trade](#).

3.2 Data Collection Methodologies

The audit demonstrated innovation in data collection through an integrated approach, combining document review, interviews, and field visits. It used a triangulation strategy by collecting data from a diverse range of sources, including government ministries (like the Vice President's Office and the President's Office - Regional Administration and Local Government), the National Carbon Monitoring Centre (NCMC), the Regional Secretariats, the Local Government Authorities, the project proponents and the international frameworks such as the UNFCCC.

This allowed for a more comprehensive data analysis, reducing reliance on a single source of data and helping to validate inconsistencies in the carbon trading process. [Pages 11 to 12](#) of the [Performance Audit Report on the Management of Carbon Trade](#) provide more details.

3.2.1 Document Review

The auditors reviewed the concept notes, project documents, contracts and monitoring reports from registered carbon trade projects. This revealed key implementation issues, such as long delays in project approvals and weak verification mechanisms. Of the 56 projects registered, only four had progressed to implementation by October 2024. The review also revealed inefficiencies in how project proposals were assessed and monitored, highlighting gaps in institutional oversight and the need for stronger project management frameworks. [Pages 12 and Appendix 4](#) of the [Performance Audit Report on the Management of Carbon Trade](#) provide [additional](#) information.

The audit provided a unique review of the state and reliability of baseline data, which is critical in carbon trading. It examined the status and coverage of Tanzania's GHG inventory, revealing that the national baseline data for GHG were outdated (last updated nearly 10 years ago) and focused solely on forestry, neglecting major emitting sectors such as energy, transport, and industry. Details are presented on [pages 44 to 48](#) of the [Performance Audit Report on the Management of Carbon Trade](#).

3.2.2 Site Verification

During this audit, field visits were conducted to validate the project's implementation status, including whether the forest conservation, afforestation, or reforestation activities reported in documents were actually occurring on the ground. The audit team visited key Manyara and Katavi regions that were actually implementing carbon trade projects. Moreover, it visited Tanganyika, Mbulu, and Kiteto District Councils, as well as their respective community areas. These visits enabled auditors to directly interact with local project implementers and beneficiaries and assess the presence and functionality of carbon-related interventions, such as monitoring stations, planted tree sites, and community forest patrols. [Page 12](#) of the [Performance Audit Report on the Management of Carbon Trade](#) provides [additional](#) information.

3.2.3 Interviews with Stakeholders

The audit team enhanced the credibility of its findings by conducting interviews with stakeholders, including technical experts, government officials at various levels, carbon project developers, and local community representatives. These interviews ensured that the audit captured both the strategic and operational dimensions of carbon trading in Tanzania.

In particular, the team engaged with officials from the Vice President's Office and the President's Office and Regional Administration and Local Government), the National Carbon Monitoring Centre (NCMC), the Regional Secretariats, the Local Government Authorities and the project proponents to understand regulatory oversight, monitoring mechanisms, and institutional coordination. At the grassroots level, discussions with village leaders and community forest groups revealed issues related to the level of awareness, participation, and perceived benefits from carbon trade initiatives.

This multi-level engagement allowed the audit to identify critical gaps in stakeholder involvement, transparency and compliance with carbon trade protocols. [Page 12](#) and [Appendix 3](#) of the [Performance Audit Report on the Management of Carbon Trade](#) provide additional information.

3.3 Innovative Data Analysis

The audit employed a combination of analytical tools to assess carbon trade management in Tanzania, as discussed hereunder:

3.3.1 Quantitative Analysis

The audit tracked actual financial earnings (e.g., TZS 36 billion) against potential revenue (TZS 1.26 trillion), revealing a significant performance gap. It also reviewed the number of registered and implemented projects (only 4 out of 56 were active), as well as carbon credits issued and estimated GHG emissions reduced. These figures helped assess the financial effectiveness, scale and environmental outcomes of the carbon trading activities. Detailed explanations are presented on [page 39](#) of the [Performance Audit Report on the Management of Carbon Trade](#).

3.3.2 Qualitative Analysis

Through interviews with government officials from VPO and NCMC, and LGAs, project proponents, technical experts, and community members, the audit captured qualitative data, including stakeholder capacity, awareness of carbon trade benefits and challenges in contract negotiation and project implementation. Also, the interview with communities involved in carbon trade revealed gaps in benefit-sharing mechanisms.

3.3.3 Spatial Data Analysis

The use of geospatial data analysis during the audit facilitated an adequate verification of the country's carbon trade project implementation status. Satellite imagery and forest cover maps were used to validate whether claimed activities, such as afforestation, reforestation, or conservation, had actually occurred.

Additionally, the MRV (Monitoring, Reporting, and Verification) data were analysed to track emission reductions at specific geographic locations, enabling auditors to assess the spatial accuracy of reported results for afforestation, reforestation, or conservation. This approach revealed discrepancies between reported and actual project implementation, improving transparency and accountability in carbon offset activities. Further descriptions can be found on [pages 26 to 66](#) of the [Performance Audit Report on the Management of Carbon Trade](#).

3.4 Innovative Use of Data Visualizations

The audit's presentation of results was innovative due to its integration of visual analytics, geospatial data and comparative benchmarking. It included sector-wise breakdowns and maps to illustrate the distribution of projects and changes in forest cover. By combining narrative insights with data visualisation and spatial analysis, the report made complex findings accessible to both technical and non-technical audiences.

3.4.1 Data Visualisation Using, Bar Graphs, Line Charts, Pie Charts and Visual Representations

Under this aspect, the audit used bar graphs and line charts to contrast actual carbon credit revenues (TZS 36 billion) against the projected potential (TZS 1.26 trillion), vividly illustrating the revenue shortfall. Moreover, time series charts (tables) tracked project implementation progress over months and years, highlighting significant delays and stagnation in project implementation. Detailed explanations are presented on [page 39](#) of the [Performance Audit Report on the Management of Carbon Trade](#).

The audit also used pie charts to depict the proportion of carbon trade projects by sectors: forestry (55%), energy (32%), agriculture, waste management, and livestock, making it easy to see sector dominance and gaps ([Page 37, Figure 3.3](#)).

Moreover, visual representations illustrated the stages of the project, from registration through planning to implementation, clearly showing how few projects progressed to actual execution ([Page 25, Figure 2.5](#)).

3.4.2 Geospatial Mapping and Satellite Data

The forest cover and loss maps were presented using satellite imagery, which was overlaid with project locations to visually verify reforestation and forest conservation efforts, confirming or disputing reported activities.

Moreover, spatial mapping of Monitoring, Reporting, and Verification data helped demonstrate where emission reductions occurred geographically, ensuring data accuracy and transparency.

The audit also utilised heatmaps to identify hotspots of deforestation, helping to focus future intervention areas. [\(Page 65, Figure 3.6\)](#)

3.4.3 Use of Infographics and Color Coding

Infographics were strategically placed throughout the report to highlight key statistics such as the number of carbon projects registered, the number that were actually implemented, and the revenue generated compared to the potential [\(Page 41, Figure 3.5\)](#). Moreover, the structure of the report was summarised using infographics [\(Page 14, Figure 1.3\)](#). This helped non-technical readers such as community members, local government officials, and the general public grasp important messages without requiring expert knowledge.

Furthermore, colour coding was employed to signal project performance: red for delayed projects, yellow for moderately delayed projects, and green for projects under implementation [\(Page 41, Figure 3.5\)](#). This visual system made it easy to bridge the gap between technical auditing work and public understanding, encouraging broader engagement and dialogue around improving Tanzania's carbon trade system.

3.4.4 Use of Map to Present Results

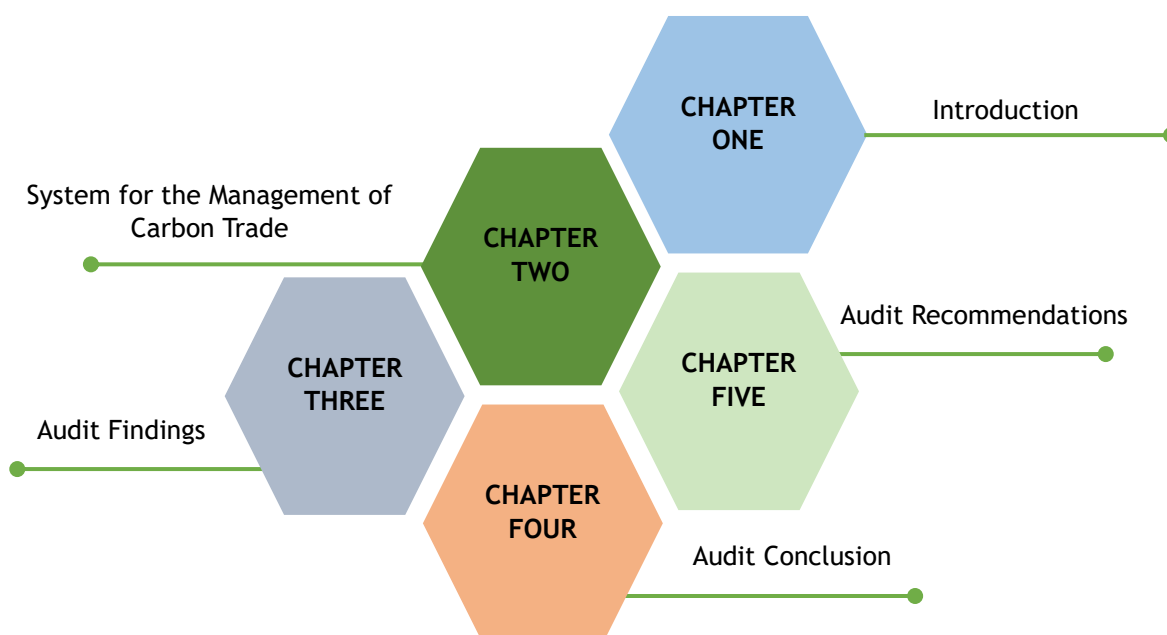
This audit effectively utilised the map to present findings in a clear and impactful manner. The map visualised the geographic distribution of African carbon credit records within the global carbon market, helping stakeholders better understand Tanzania's global position. In particular, it showed that Tanzania lagged behind other countries in the volume of carbon credits issued and traded on the global voluntary carbon market. This visual comparison provided a snapshot of missed opportunities [\(Page 32, Figure 3.2\)](#).

By integrating international carbon data into a spatial format, the audit grounded its findings in Tanzania's local context while linking them to broader continental and global trends. This approach underscored the need for stronger participation, improved transparency and greater accountability in managing carbon trading initiatives within the country.

3.5 Innovative Reporting

This audit report is divided into five chapters, and the key audit findings, conclusions, and recommendations are presented in the executive summary.

3.5.1 Structure of the Report



3.5.2 Executive Summary of the Report

The report also includes a short and clear executive summary that provides decision-makers with an overview of key audit findings, conclusions, and recommendations. By presenting this information in a concise and straightforward format, the report facilitates a clearer understanding of the current state of carbon trading in Tanzania. It serves as a catalyst for policy reforms aimed at enhancing transparency, accountability, and effectiveness in the country's carbon trading initiatives ([Pages x to xiv](#)).

Carbon Trade

- Carbon trade has emerged as a critical environmental and economic issue in Tanzania due to its growing significance in climate change mitigation, sustainable development and global climate finance. Under mechanisms such as the Paris Agreement and the voluntary carbon markets, Tanzania generates carbon credits through activities like forest conservation, afforestation, reforestation and renewable energy projects. These credits can be sold to international buyers seeking to offset their emissions, offering both environmental and financial benefits.
- Auditing of carbon trade is therefore crucial to ensure that emission reductions are genuine, environmental goals are met, and local communities receive fair benefits. It moreover enables the government to strengthen regulations and improve the overall impact of carbon trading on climate change mitigation and sustainable development.

Impacts of the Audit

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1. Appointment of the Board's Chairman of the National Carbon Monitoring Centre (NCMC)

2. The enactment of the Environmental Management (Amendment) Act of 2025

3. Attracted a notable attention from diverse stakeholders such as media

The performance audit on carbon trade in Tanzania, published in March 2025, has provided important insights into the country's management of carbon trading activities. Since the report has been newly released, its long-term impact on policy, practice, and public awareness is yet to be fully revealed.

However, the audit findings have prompted immediate calls for strengthened institutional mandates, urging greater coordination and clarity in roles among ministries and environmental agencies managing carbon projects.

On 29 April 2025, the President of the United Republic of Tanzania appointed the Board's Chairman of the National Carbon Monitoring Centre (NCMC) (www.ikulu.go.tz/documents/publications), marking a significant milestone in the country's commitment to climate governance and carbon market development. This appointment follows the enactment of the Environmental Management (Amendment) Act of 2025, which legally established the NCMC as a body corporate under the Office of the Vice President

oagmis.oag.go.tz). The legal establishment of the NCMC and the appointment of its Chairman are expected to address the noted challenges in the audit by providing a centralised and transparent system for managing carbon trading activities.

Despite being newly released, the audit has gained attention across media and institutional platforms, sparking a national discussion on improving Tanzania's carbon trade system. For instance, *The Citizen Magazine* highlighted the significant revenue losses due to stalled carbon trade projects, emphasising the need for improved coordination and strategic guidance¹. Similarly, *The Guardian Magazine* reported on the audit's findings, underscoring Tanzania's potential in carbon trading.

Furthermore, the audit findings have also reached international platforms. For example, *Carbon Pulse* reported that Tanzania lost over TZS 1.2 trillion in potential carbon trade income due to inadequate management. Another article on *AllAfrica.com*² called "Tanzania's Carbon Market Misses the Mark" explained what the audit found and what it means for the country's efforts in carbon trading.

Conclusion

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The performance audit on carbon trade in Tanzania is a major step forward in climate governance. It employed innovative methods, including geospatial mapping, stakeholder input, and data analysis, to assess the country's effectiveness in managing its carbon trading efforts. The audit revealed key weaknesses and provided clear recommendations for reforms to enhance transparency, coordination, and institutional capacity.

Although recently released (March 2025), the audit has already sparked national dialogue and led to important actions, such as an official appointment of the National Carbon Monitoring Centre (NCMC) board chairman and the passing of the Environmental Management (Amendment) Act of 2025. These early impacts show strong political will to address the audit's findings.

If fully implemented, the audit's recommendations could help Tanzania become a regional leader in carbon trading, ensuring both environmental protection and community benefits.

¹ www.thecitizen.co.tz

² allafrica.com

Appendix 1: Innovative Audit Approach

