



Environmental and Impact Assessment (EIA) and Environmental and Social Management Plan (ESMP)

**Building the resilience of forest biodiversity (BUREFOBI) to the
threats of climate change in Tanzania's Nature Forest Reserves**

Date: 18th October 2025

Consultant: Flora Ismail Tibazarwa

EXECUTIVE SUMMARY

Introduction

The Environmental and Social Impact Assessment (ESIA) and Environmental and Social Management Plan (ESMP) for the BUREFOBI Project provide a comprehensive framework to identify, mitigate, monitor, and manage the environmental and social risks associated with the design, construction, and operational phases of infrastructure development across seven Nature Forest Reserves (NFRs) in Tanzania and inform Tanzania Forest Services (TFS) on best practice standards for environmental management. The project, implemented by the Tanzania Forest Services (TFS) Agency, aims to enhance forest conservation, improve eco-tourism infrastructure, and support local community livelihoods, while ensuring environmental integrity and social inclusiveness.

Project Overview

The BUREFOBI Project will establish and rehabilitate critical infrastructure, including modern entrance gates, ranger posts, staff housing, tourism management offices, public sanitation blocks, parking areas, and access roads within Vikindu, Uzigua, Pindirolu, Mwambesi, Nou, Hassama, and Mount Hanang Nature Forest Reserves. Construction activities will adopt environmentally responsible approaches, including phased site clearance, dust suppression, waste minimisation, and the use of locally sourced materials, to reduce the project's carbon footprint and support local economies.

Environmental and Social Baseline

The project areas are characterised by tropical climate conditions, Miombo woodlands, seasonal and perennial rivers, and unique biodiversity that includes endangered species such as African elephants and rare bird species. Local communities depend on agriculture, livestock keeping, and forest resources for their livelihoods. Socio-economic challenges include limited employment opportunities, human-wildlife conflict, and access to clean water. Several sites contain cultural heritage resources that require sensitive management during construction.

Key Environmental and Social Impacts

BUREFOBI will generate significant positive impacts, including employment opportunities, improved forest security, improved tourism infrastructure, enhanced revenue generation for TFS and the surrounding communities, and entrepreneurship opportunities for youth in eco-tourism.

The ESIA identified potential adverse impacts, including:

Environmental Risks: waste generation, soil erosion, sedimentation of nearby rivers, air and noise pollution, habitat disturbance, and fire risks.

Social Risks: Occupational hazards, spread of communicable diseases (HIV/AIDS, STDs), conflicts over employment and land access, and disturbance of cultural sites.

Mitigation and Enhancement Measures

To address adverse impacts, the Environmental and Social Management Plan (ESMP) recommends specific mitigation actions such as:

- Provision of waste segregation facilities and contracting licensed waste collectors.
- Establishment of sediment control structures and maintenance of 30m buffer zones along rivers.
- Dust suppression, noise control, and equipment maintenance.
- Re-vegetation and erosion control on disturbed sites.
- Distribution of PPE, daily toolbox talks, and on-site safety inspections.
- Community awareness campaigns on HIV/AIDS prevention and road safety.
- Transparent recruitment processes and a functional grievance redress mechanism (GRM).

Enhancement measures focus on prioritising local labour, providing training and skills development, supporting eco-tourism enterprises, and replanting native tree species to improve forest cover.

Monitoring Plan

The ESMP establishes a robust monitoring framework with indicators for waste volumes, water quality, dust and noise levels, PPE compliance, fire preparedness, and the success of biodiversity restoration. Monitoring frequency ranges from daily (PPE use, site inspections) to quarterly (water sampling, biodiversity monitoring). Data will be captured through checklists, site observation records, and laboratory analysis, and reported weekly, monthly, and quarterly to TFS and regulatory bodies.

Institutional Arrangements

Clear institutional roles are defined to ensure the effective implementation of ESMP.

The Contractor is responsible for day-to-day EHS compliance, supervised by the Consultant, who conducts periodic audits, inspections, and capacity building.

TFS provides overall oversight, communicates with NEMC, and coordinates community engagement. District authorities (including EMO & CDO) support social programs and health outreach, while local communities participate in monitoring and grievance resolution.

Implementation Schedule and Budget

The ESMP is aligned with the six-month construction period and continues during operations. A phased schedule ensures early mobilisation of mitigation measures, ongoing monitoring, and final site rehabilitation

before project closure.

Decommissioning Plan

The ESMP also outlines a Decommissioning Plan for safe dismantling of facilities at the end of their lifecycle. This includes stakeholder notification, controlled demolition, segregation and recycling of demolition waste, soil remediation, and re-vegetation of affected areas. Communities will be engaged to determine adaptive reuse of remaining infrastructure for eco-education or tourism purposes. A final decommissioning audit and post-closure monitoring for a minimum of two years will ensure complete site restoration and environmental compliance.

Conclusion

The ESIA confirms that there are minimal and manageable Environmental and social impacts, and the ESMP ensures that the BUREFOBI Project is implemented in an environmentally and socially responsible manner. By integrating mitigation measures, community participation, and strict monitoring protocols, the project will not only avoid and minimise adverse impacts but also deliver long-term benefits in terms of biodiversity conservation, eco-tourism promotion, and improved community welfare. This plan serves as a guiding tool for all stakeholders, demonstrating compliance with Tanzanian regulatory requirements and international best practices.

□

17

ACKNOWLEDGEMENTS

The preparation of this Environmental and Social Management Plan (ESMP) for the BUREFOBI Project was made possible through the contributions and support of numerous institutions, experts, and community stakeholders.

The Project Management Unit (PMU) at Tanzania Forest Services (TFS) Agency is acknowledged for providing strategic direction, technical guidance, and logistical support throughout the process. Special mention is extended to the Nature Forest Reserve (NFR) Management teams, as well as the District Authorities of Mkuranga, Chalinze, Kilwa, Tunduru, Babati, Mbulu, and Hanang, for facilitating stakeholder consultations and sharing valuable community data and information.

The insight into community livelihoods and interaction with the NFRs would not have been possible without the cooperation of local community members, village leaders, and representatives who actively participated in focus group discussions and public meetings, providing an invaluable understanding of socio-economic challenges, conservation priorities, and potential project benefits.

Finally, we extend our thanks to the ESIA Team led by Gregory Ndanu, whose dedication, fieldwork, and technical expertise ensured that this ESMP meets both national requirements and international best practice standards.

This document is a result of a collaborative effort, and we hope it will serve as a practical tool for guiding environmentally sound and socially inclusive implementation of the BUREFOBI Project.

.....
Dr Flora Ismail Tibazarwa
Environmental Consultant

□

17

TABLE OF CONTENTS

<u>EXECUTIVE SUMMARY</u>	2
<u>ACKNOWLEDGEMENTS</u>	4
<u>TABLE OF CONTENTS</u>	v
<u>LIST OF TABLES</u>	viii
<u>ABBREVIATIONS AND ACRONYMS</u>	ix
<u>1 Introduction and Background</u>	10

<u>1.1</u>	<u>Objectives of the ESIA and ESMP</u>	11
<u>1.2</u>	<u>ESIA and ESMP Methodology</u>	11
<u>1.3</u>	<u>Structure of the ESIA and ESMP</u>	12
<u>2</u>	<u>Project description</u>	12
<u>2.1</u>	<u>Project Locations</u>	14
<u>2.2</u>	<u>Beneficiaries</u>	14
<u>2.3</u>	<u>Scope of Works</u>	15
<u>2.4</u>	<u>Resource Requirements</u>	16
<u>3</u>	<u>Analysis of alternatives</u>	16
<u>3.1</u>	<u>No project alternative</u>	16
<u>3.2</u>	<u>Technical alternatives</u>	17
<u>4</u>	<u>Policies and Legislation and Institutional Framework</u>	17
<u>4.1</u>	<u>National Policies and Legislation</u>	17
<u>4.1</u>	<u>International Agreements and Standards</u>	18
<u>4.2</u>	<u>Institutional Framework for Environmental and Social Management</u>	19
<u>5</u>	<u>Environmental and Social Baseline</u>	21
<u>5.1</u>	<u>Biophysical Environment</u>	21
<u>5.1.1</u>	<u>Climate</u>	21
<u>5.1.2</u>	<u>Geology and Soils</u>	22
<u>5.1.3</u>	<u>Hydrology and Water Resources</u>	22
<u>5.1.4</u>	<u>Biodiversity and Ecosystems</u>	22
<u>5.2</u>	<u>Socio-Economic and Cultural Environment</u>	24
<u>5.2.1</u>	<u>Demographics</u>	24
<u>5.2.2</u>	<u>Social Infrastructure</u>	24
<u>5.2.3</u>	<u>Gender and Vulnerable Groups</u>	25
<u>5.2.4</u>	<u>Cultural Heritage</u>	25
<u>5.2.5</u>	<u>Livelihood activities</u>	25
<u>5.3</u>	<u>Stakeholder Engagement and Grievance Management</u>	26
<u>6</u>	<u>Potential Environmental and Social Impacts</u>	28
<u>6.1</u>	<u>Potential Negative Impacts</u>	29
<u>6.1.1</u>	<u>Pre-Construction Phase</u>	29
<u>6.1.2</u>	<u>Construction Phase</u>	30
<u>6.1.3</u>	<u>Operation Phase</u>	32
<u>6.1.4</u>	<u>Decommissioning Phase</u>	33
<u>6.2</u>	<u>Potential positive Impacts</u>	33
<u>6.2.1</u>	<u>Socio-Economic Benefits</u>	33
<u>6.2.2</u>	<u>Environmental Benefits</u>	33
<u>6.2.3</u>	<u>Tourism Development</u>	33
<u>6.3</u>	<u>Cumulative Impacts</u>	34
<u>7</u>	<u>Mitigation and Enhancement Measures</u>	35
<u>7.1</u>	<u>Mitigation measures</u>	35

7.1.1	<u>Waste generation (solid & inert waste)</u>	35	
7.1.2	<u>Water pollution (surface & groundwater)</u>	35	
7.1.3	<u>Air quality and dust</u>	36	
7.1.4	<u>Noise</u>	36	
7.1.5	<u>Soil erosion and slope stability</u>	36	
7.1.6	<u>Sanitation, hygiene & public health</u>	36	
7.1.7	<u>Fire risk & wildfire prevention</u>	37	
7.1.8	<u>Occupational health & safety (OHS)</u>	37	
7.1.9	<u>Communicable diseases, HIV/AIDS and social risks</u>	37	
7.1.10	<u>Community grievances & social conflict</u>	38	
7.1.11	<u>Biodiversity disturbance & poaching</u>	38	
7.1.12	<u>Economic displacement</u>	38	
7.1.13	<u>Cumulative and indirect impacts</u>	38	
8	<u>Environmental and Social Management Plan</u>	40	
8.1	<u>Objectives of the ESMP</u>	40	
8.2	<u>ESMP Approach</u>	40	
8.3	<u>Roles and Responsibilities</u>	40	
8.3.1	<u>TFS</u>	40	
8.3.2	<u>UNDP and GEF</u>	41	
8.3.3	<u>Contractors/Third-party service providers</u>	41	
8.3.4	<u>Communities</u>	42	
8.4	<u>Reporting timelines</u>	42	
9	<u>Training and Capacity Building for the ESMP</u>	45	
10	<u>Decommissioning Plan</u>	45	
11	<u>Budget and Resource Allocation</u>	46	
12	<u>Conclusions and Recommendations</u>	47	
13	<u>References</u>	47	
14	<u>APPENDICES</u>	48	
14.1	<u>E&S Specifications for third parties (service providers/ contractors)</u>	48	
14.2	<u>Appendix 2: Monitoring Checklists</u>	50	
14.1	<u>ESMP Implementation Schedule</u>	50	
14.2	<u>Appendix 2: OHS Incident Register & Lost Time Injury (LTI) Log</u>	51	51
14.3	<u>Appendix 3: Community Grievance Log Format</u>	51	
14.4	<u>Appendix 4: Community Consultation Record Template</u>	51	
14.5	<u>Appendix 5: List of SOME MANDATORY PPEs AND SAFETY EQUIPMENTS</u>	51	
14.6	<u>Appendix 6: Decommissioning Checklist</u>	53	
14.7	<u>Appendix 7: Stakeholder Concerns</u>	53	

□ LIST OF TABLES

<u>Table 22 Projected requirements for the implementation of BUREFOBI</u>	16
<u>Table 41 Applicable National Policies and Legislation</u>	17
<u>Table 42 International agreements and standards</u>	18
<u>Table 43 Roles and Responsibilities for the ESIA and ESMP</u>	20
<u>Table 51 Climatic conditions in the NFRs</u>	21
<u>Table 52 Demography of the communities around the NFRs</u>	24
<u>Table 53 NFR staff capacity</u>	25
<u>Table 81: Impact Mitigation and Monitoring Matrix</u>	43
<u>Table 111 Summary of Budget Estimates for ESMP Implementation</u>	46
<u>Table 101: ESMP implementation schedule</u>	50
<u>Table 151 Officials' Contributions-Nou & Hassama Nature Forest Reserves</u>	54
<u>Table 152 Community Contributions-Nou & Hassama Forest Reserves</u>	54
<u>Table 153 Officials' Contributions Uzigua Nature Forest Reserves</u>	55
<u>Table 154: Community Contributions-Uzigua Nature Forest Reserves</u>	56
<u>Table 155: Officials' Contributions-Pindirol Nature Forest Reserves</u>	56
<u>Table 156: Community Contributions-Pindirol Nature Forest Reserves</u>	57
<u>Table 157: Officials' Contributions Mwambesi Nature Forest Reserves</u>	57
<u>Table 158: Community Contributions-Mwambesi Nature Forest Reserves</u>	57
<u>Table 159: Officials' Contributions-Nou Nature Forest Reserve- Babati District</u>	58
<u>Table 1510: Community Contributions- Dareda Kati Village (Babati Rural)</u>	58
<u>Table 1511: Officials' Contributions-Mt. Hanang Forest Reserve- Hanang District</u>	59
<u>Table 1512: Community Contributions- Gitting Village (Hanang)</u>	59
<u>Table 1513: Officials' Contributions-Vikindu Nature Forest Reserve</u>	59
<u>Table 1514 Community Contributions- Vikindu Nature Forest Reserve</u>	60

□

ABBREVIATIONS AND ACRONYMS

AIDS	Aquired Immunodeficiency synrome
BOD	Biochemical Oxygen Deman
BUREFOBI	Building the Resilience of Forest Biodiversity
C-ESMP	Contractors Environnemental and Social Management Plan
CMS	The Convention on the Conservation of Migratory Species of Wild Animals
COD	Chemical Oxygen Demand
COVID-19	Corona Virus Disease - 2019
dB	Décibels
DCDO	District Community Development Officer
DEMO	District Environmental Development Officer
EHS	Environment, Health and Safety
ESIA	Environmental and Social Impact Assessment
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
GRM	Grievance Redress Mechanism
HIV	Human Immunodeficiency Virus
IAS	Invasive Alien Species
ILO	International Labour Organization
LGA	Local Government Authority
LTIFR	Loss Time Injury Frequency Rate
NFP	National Forest Programme
NFRs	Nature Forest Reserves
NEMC	National Environmental Management Council
NTU	Nephelometric Turbidity Unit
OHS	Occupational health & safety
PM	Particulate Matter
PMU	Project Management Unit

PPEs	Personal Protective Equipment's
ProDoc	Project Document
SES	Social and Environmental Standards
SESP	Social and Environmental Screening Procedure
SMEs	Small & medium enterprises
STIs	Sexually Transmitted Infections
TFS	Tanzania Forest Services Agency
TMP	Traffic Management Plan
URT	United Republic of Tanzania
UNDP	United Nations Development Programme
VLFRS	Village Land Forest Reserves
VPO	Vice President's Office
WHO	World Health Organization
WWF	World Wildlife Fund

□

17

1 Introduction and Background

The Ministry of Natural Resources and Tourism (MNRT) is implementing a project entitled “Building the Resilience of Forest Biodiversity (BUREFOBI) to the Threats of Climate Change in Tanzania’s Nature Forest Reserves” through the Tanzania Forest Services (TFS) Agency. The project is structured around managing climate-induced threats to forest biodiversity, fostering income-generating activities to finance threat-reduction measures, and prioritising knowledge management, monitoring, evaluation, and gender mainstreaming, and is supported by the United Nations Development Programme (UNDP). The Vice President’s Office (VPO) is a key partner in the implementation, with the mandate to ensure the climate change element of the project is adequately addressed.

The project document (ProDoc) highlights potential risks in line with the UNDP Social and Environmental Screening Procedure (SESP), specifically **Standard 6: Indigenous Peoples** and **Standard 5: Displacement and Resettlement**, at specific project sites. The ESMF predicted the BUREFOBI project to have impacts (direct and/or indirect) on access to NFR land and forest resources claimed or exercised by some NFR-adjacent communities or land-user collectives who fit with the description of ‘Indigenous People’ under UNDP SES Policy Standard 6. This risk was predicted to derive from economic displacement, even where current resource use in NFRs is potentially illegal, or from the limited capacity of affected communities to fully engage in participatory processes related to project activities that influence land access or generate economic benefits.

Notably, the risks are classified as moderate, potentially limited in geographic scope, and reversible, with impacts on communities adjacent to Nature Forest Reserves (NFRs). Still, they trigger accountability under the UNDP Social and Environmental Standards (SES), warranting the conduct of an Environmental and Social Impact Assessment and the development of an Environmental and Social Management Plan to ensure adherence to UNDP SESP, international best practice and national legislation.

The project footprint covers five regions and nine Nature Forest Reserves (NFRs) out of twenty-five NFRs: Arusha (Essimangor NFR), the Coastal Region (Pugu Kazimzumbwi & Uzigua NFRs), Manyara (Mt Hanang, Hassama Hills & Nou NFRs), Lindi (Pindi and Rondo NFRs), and Ruvuma (Mwambesi NFR). Nature Forest Reserves (NFR) are national Forest Reserves (FR) managed for conservation and offer the highest level of protection (consistent with the International Union for the Conservation of Nature (IUCN) Category of 1A Strict Nature Reserves. This categorisation follows the guidance of awarding conservation status to natural forests under the Forest Act of 2002.

The selected NFRs have limited *in situ* operational capacity, and the forest habitats and species are potentially under threat from unsustainable agricultural practices and production systems; intensifying pressure for agricultural land; increasing demand for fuelwood and charcoal; uncontrolled, damaging wildfires; spread of invasive alien species (IAS); and habitat fragmentation. The BUREFOBI project is focused on building a conducive environment to promote ecotourism and mitigate the threats from habitat degradation and climate change through three components over six years (2023-2029):

- Component 1: Manage climate-induced threats to forest biodiversity
- Component 2: Develop income-generating activities to finance threat-reduction measures
- Component 3: Knowledge management, monitoring and evaluation and gender mainstreaming

BUREFOBI is anchored in a robust policy framework that entrenches long-term institutional ownership of national, provincial, and local project outcomes. The project outputs inform established and developing programmes of action for forest conservation and management within the national network of NFRs. Environmental sustainability can be promoted by enhancing the effectiveness of conservation efforts for species, habitats, and ecosystem services. All climate-resilient activities supported by the project will be integrated into

TFS plans for the NFRs, such as Forest Management Plans (FMPs) and agreements that adhere to relevant Tanzanian policies and legislation, international best practices, and the UNDP-SES.

TFS implements BUREFOBI in partnership with District Councils, community-based forest management groups, and other stakeholders. The project is designed in alignment with national priorities outlined in the Tanzania Forest Policy (1998), National Environmental Policy (2021), and National Tourism Policy, which advocate for balancing conservation and sustainable economic growth.

The UNDP commissioned a consultant (**Dr Flora Ismail Tibazarwa**) to enhance the social and environmental sustainability of the BUREFOBI project by fine-tuning the SES risks as per the pre-screening and developing mitigation strategies, including the preparation of an Environmental and Social Management Plan (ESMP) for interventions under component two. To prepare the ESMP, the Consultant was required to identify environmental and social risks, propose avoidance and mitigation measures as part of, and propose management measures as part of a scoped Environmental and Social Impact Assessment (ESIA) to inform the corresponding Environmental and Social Management Plan (ESMP), which is presented in this report.

1.1 Objectives of the ESIA and ESMP

The overall goal of this ESIA and ESMP is to ensure that the BUREFOBI component 2 interventions adhere to national and international environmental and social impact standards.

Specifically, the ESIA and ESMP aim to:

- i. Identify and mitigate significant adverse impacts on the physical, biological, and/or socio-economic environments.
- ii. Ensure that the benefits arising from the project's development are maximised.
- iii. Document the methods intended to i) avoid, prevent, minimise and/or compensate adverse impacts resulting from the project and to ii) enhance or sustain beneficial impacts.
- iv. Comply with applicable national and international environmental and social legislation, regulations, procedures and policies of Tanzania and those International codes that apply to this type of project (e.g., effluent standards, noise levels standards, occupational and safety standards, etc.)
- v. Maintain open dialogue with stakeholders and address relevant concerns that may arise. Maintain good relations with local and national communities and governments.
- vi. Accept responsibility through all project phases and M & E the effects of the various ESMP.

1.2 ESIA and ESMP Methodology

Recommended standard methods for conducting an ESIA and developing an ESMP were used for the BUREFOBI project. Briefly, the study employed the following methodologies to collect data:

a Stakeholder consultation:

Stakeholder consultations were conducted with TFS PMU, NFR management and at the village level. Identification of villages consulted was based on a purposeful selection process guided by TFS staff, considering the vicinity to each NFR. The consultation sessions engaged a representative sample of villagers.

The meetings were arranged through consultation with the respective local government officials, specifically the Ward Executive Officers and or officers under the District Executive Directors (DED).

The fieldwork was undertaken to establish the capacity, range of activities, conservation value, environmental and social challenges, operational risk and community engagement. It was noted that TFS teams had visited the communities adjacent to the NFRs separately to introduce BUREFOBI and conduct a climate analysis.

A detailed list of all consulted stakeholders and their concerns is presented in Appendix 15.8.

b Fieldwork

To supplement the consultations, field observations were conducted. Both consultations and site visits were done in February, March, August and September 2025. Essentially, the observations were in the NFRs and where constructions were planned. Photographs were taken as a record of some of the observations.

c Literature review

Forest Management Plans (FMPs), Conservation Investment Plans (CIPs), and records were reviewed to obtain existing secondary data and information relevant to the study. A significant source of such information included the socio-economic profiles of the District Councils, as well as reports from the National Bureau of Statistics.

Other sources of secondary data included various national policies and legislation, UNDP-SES guidelines, and international best practices.

d Analysis and drafting

The consultant utilised information from the literature, field data, and consultations to identify potential environmental and social impacts, primarily relying on qualitative data, and provided recommendations for monitoring and evaluation. The area where the construction is described provides some baseline of the existing

environment.

1.3 Structure of the ESIA and ESMP

This report is organised into eleven substantive sections. The first section serves as an introduction, laying out the rationale, objectives, and methodology of the assignment. Section two details the BUREFOBI component two interventions that are the basis of the ESIA and ESMP. Section three considers alternatives, and section four focuses on the legal and administrative frameworks for the ESIA and ESMP. Sections five, six and seven are the core of the ESIA, detailing the environment, the impact the proposed interventions would have on the physical and social environment, and what can be done to reduce or mitigate the consequences. These three sections are core to the ESIA.

From section eight, the report focuses on the ESMP, how the proposed mitigations are actioned and monitored, and details the roles and responsibilities of TFS, UNDP, and other partners. Section nine outlines capacity-building needs for implementing the ESMP, and section ten alludes to budgetary requirements. The report culminates in chapter eleven with conclusions and recommendations, whilst sections twelve and thirteen provide supporting details on the sources of information and some templates for consideration in the ESMP.

2 Project description

The United Republic of Tanzania (URT) hosts globally significant biodiversity, ranking among the top countries in tropical Africa in terms of ecoregion representation, species richness, and the extent of species endemism. URT is home to more than thirty major vegetation communities, hosting more than 10,000 plant species (of which more than 15% are endemic). The biodiversity value has been globally recognised and URT is registered for 7 ‘Alliance for Zero Extinction’ sites, four natural World Heritage Sites and four Ramsar sites. URT contains two areas designated by Conservation International as Global Biodiversity Hotspots: Eastern Afro-montane forests (Eastern Arc and Albertine Rift components), and the Eastern African Coastal Forests. It also encompasses eight World Wildlife Fund (WWF)-designated Critical Eco-Regions: the Albertine Rift Montane Forest, the Kenya-Tanzania Montane Forest, the Eastern Arc Forest, the Southern Rift Forest/Grassland Mosaic, the Coastal Forest Mosaic, the Guinea-Congolian Forest Mosaic, the Acacia Savannah, and the Miombo Woodland.

The natural forest and woodland types in Tanzania are extensive Miombo woodlands in lowland areas across the central and southern parts of the country, Acacia savannah woodlands in the northern regions, coastal forest/woodland mosaic in the east, mangrove forests along the Indian Ocean coast, and closed-canopy, high forests on the ancient mountains of the Eastern Arc in the east, on the Albertine Rift and Lake Tanganyika in the west, and on the younger volcanic mountains in the north. Most of Tanzania’s indigenous forests are of the dry woodland type (Miombo woodlands and Acacia savannah woodlands, totalling ~39.5 million ha), with the remainder comprising: coastal forests (~800,000 ha); Eastern Arc and other montane catchment forests (~350,000 ha); mangrove forests (~115,000ha); wetland forests (~200,000ha) and Guinea-Congolese lowland forests (~670,000 ha).

Tanzanian forests have gone through extensive rates of deforestation estimated at 469,000 ha/annum (FRA, 2020). The major causes of deforestation in Tanzania are attributed to an increase in the area under shifting cultivation and permanent agriculture, the development of human settlements, firewood and charcoal production, timber extraction, overgrazing, uncontrolled fires, and, most recently, the introduction of large-scale agriculture for biofuel production. Underpinning these direct causes of deforestation and forest degradation are market and policy failures, rapid population growth, rural poverty and climate change.

Forest protection is, however, particularly challenging and resource-intensive in countries such as Tanzania, where high forest dependence exists. Forest-based charcoal and firewood are the most important sources of household energy, and forest lands provide the last remaining areas for agricultural expansion.

Component two of the BUREFOBI project, working in the nine NFRs, aims to address some of the challenges with the support of UNDP by:

- i. Strengthening forest protection and surveillance by constructing ranger posts and providing staff housing.
- ii. Enhancing visitor experience by developing modern entry gates, tourism information centres, and sanitation facilities.
- iii. Promoting eco-tourism and local economic opportunities by improving access roads, creating parking spaces, and landscaping for aesthetic appeal.
- iv. Supporting environmental education through signage and interpretation centres to raise awareness among visitors and the surrounding communities.
- v. Foster community involvement by prioritising local labour, skills training, and small business linkages (e.g., guiding, crafts, and catering services).

Whilst these interventions are to improve the protection of the NFRs and promote sustainable use, they do have in of themselves some environmental and social concerns if not administered appropriately and thus the need for the ESIA and ESMP.

2.1 Project Locations

Seven out of the nine Nature Forest Reserves, each with unique ecological and socio-economic significance, are included in this scoped ESIA and ESMP. Each site has been prioritised based on its environmental sensitivity, tourism potential, and level of anthropogenic threat. Site-specific designs have been developed to respect local ecological conditions and minimise disturbance.

- i. Vikindu Range NFR (Mkuranga District, Pwani Region): A coastal forest near Dar es Salaam, serving as a vital water catchment for surrounding villages.
- ii. Uzigua NFR (Chalinze District, Pwani Region): Woodland and riverine habitats facing human–wildlife conflict and encroachment pressure.
- iii. Pindiro NFR (Kilwa District, Lindi Region): Wetland-rich Forest with high eco-tourism potential and sensitive biodiversity.
- iv. Mwambesi NFR (Tunduru District, Ruvuma Region): The woodland ecosystem is exposed to \ overgrazing and illegal logging.
- v. Nou NFR (Babati District, Manyara Region): Rich biodiversity and natural springs that provide domestic water to local villages.
- vi. Hassama NFR (Mbulu District, Manyara Region): Key for biodiversity conservation and local water supply.
- vii. Mount Hanang NFR (Hanang District, Manyara Region): Crucial catchment area for Bagara River and important for downstream irrigation schemes.

2.2 Beneficiaries

This component of the project is expected to benefit directly:

- i. Local Communities: Through job creation, market linkages, and improved access infrastructure.
- ii. TFS and Rangers: Through improved working conditions and operational efficiency.
- iii. Tourists and Visitors: Through better amenities, interpretation, and overall experience.
- iv. Biodiversity: Through improved forest protection, reduced poaching, and habitat restoration efforts.

3 □



Photo 21 Visitor banda under construction at Pugu-Kazimzumbwi

3.1 Scope of Works

The BUREFOBI scope on component two covers the design, construction, and supervision of multiple infrastructure components at each NFR site (See Table 2-1). Works include:

- i. Modern Entrance Gates equipped with ticketing sections, visitor reception areas, interpretation panels, and security features.
- ii. Ranger Posts and Staff Housing Units to accommodate forest rangers and provide operational offices for enforcement staff.
- iii. Tourism management offices and information centres provide facilities for visitor briefings, eco-tourism management, and administration.
- iv. Public Sanitation Blocks provide gender-segregated toilets, hand-washing facilities, and water storage systems to promote hygiene.
- v. Parking Areas and Internal Access Roads are designed to allow safe vehicle movement and minimise environmental footprint.
- vi. Site Landscaping and Eco-Education Signage using indigenous plant species and interpretive signboards to improve environmental aesthetics and visitor learning.

The construction works will adopt environmentally responsible and socially inclusive practices that TFS

promotes, including:

- i. Minimal Site Clearance: Only the footprint necessary for infrastructure will be cleared to limit habitat loss. (See Photo 2-1 Visitor Banda at Pugu).
- ii. Phased Construction: Scheduled to avoid sensitive seasons such as peak rainfall and wildlife breeding periods.
- iii. Sustainable Material Sourcing: Use of locally available sand, gravel, and stones from approved borrow pits to reduce transport emissions and create local economic opportunities.
- iv. Dust and Noise Control: Implementing water sprinkling, maintaining proper equipment, and restricting noisy work to daytime hours.
- v. Waste Management: Segregation, collection, and safe disposal or recycling of construction waste.
- vi. Worker Welfare: Provision of decent camp facilities, sanitation services, and health and safety measures (PPE, first aid, HIV/AIDS awareness).
- vii. Community Engagement: Ongoing consultation and grievance redress to ensure local concerns are addressed throughout the project.

Table 21 Construction works per NFR

Nature Reserve	Facilities to be Constructed
Pugu Kazimzumbwi	New trails, 4 gates, a sports facility, a communication tower, a board walk, Visitor bandas (to accommodate 15 persons), power at the ranger posts and conduct of fire training. Resurfacing and maintenance (culverts and bridge) of an existing road (12km)
Vikindu Nature Forest Reserves	Modern gate, Tourism management office, toilet and parking area.
Pindiro Nature Forest Reserves	Modern gate, Tourism management office, toilet and parking area
Mwambesi Nature Forest Reserves	Modern gate, Tourism management office, toilet and parking area
Nou Nature Forest Reserve (Babati)	Main Ranger post
Hassama Hill Nature Forest Reserve (Dongobesh Mbulu)	Main Ranger post
MT. Hanang Nature Forest Reserve	Main Ranger post - Gitting Tourism Management office - Katesh
Uzigua Nature Forest Reserves	Main Gate, Administration Building, Washrooms, Parking Area

A template of the site plan for a gate, tourism office, and structural details is indicated in Appendix 1. TFS intends to use the same structural template for all its NFRs and plantations to maintain the organisational branding. The structures are designed with consideration for the sensitivity of the natural environment and the need to use minimal resources that would exacerbate environmental impact.

3.2 Resource Requirements

Key requirements for the implementation of the project are projected to be (See Table 2-2).

Table 22 Projected requirements for the implementation of BUREFOBI

Item	Unit	Phase
Design Construction Operation		
Staffing		
Number of permanent staff – TFS PMU/ NFR Persons	5	60
Management		
Number of temporary staff – Contractors/ NFR Persons	50	58
Support		
Land Take		
Land required for construction	ha	
Land take for waste disposal	ha	n/a negligible negligible
Resource requirements		
Fresh water for operation for sanitary use in visitor camps per site	m ³ /d	n/a 0,05 0,07
Petrol for local portable electricity generator and handheld tools		1
Diesel	m ³	450
Lubricants	m ³	6
Rock, Gravel		tbd
Borrow material		tbd
Sand		tbd
Waste Production		
Sewerage water from visitor Bandas, offices, Gate posts	m ³	750
Domestic waste from Visitor Bandas offices, Gate posts	m ³	500

Construction material is to be sourced locally, in accordance with the regulations and bylaws of the local government authority (LGA). Buildings within the NFRs utilise forest resources, using certified timber from the organisation's plantations on raised platforms to ensure minimal disturbance to the environment. The tourist offices and gates are either outside the NFR boundary on LGA property, e.g., (Mt Hanang and Nou), and the contractors source the material for these (guidelines for these service providers are indicated in Appendix 1).

4 Analysis of alternatives

The alternatives to the BUREFOBI component two include the least desirable option of having no project (no development) at all, as well as potential technical options.

4.1 No project alternative

The ‘no project’ alternative suggests that the status quo remains as is. This is not ideal as scale and intensity of threats to NFRs in Tanzania are being exacerbated by the direct and indirect consequence of the effects of climate change on forest biodiversity (including severe, recurring droughts; increasing infestation by invasive alien species; and decreasing intervals and cumulative impact of wildfires) and on adjacent communities (including frequent flooding; increased incidence of wildfires; and more prolonged droughts).

Not implementing component two specifically will deprive URT of better-connected, improved resilience of forest habitats and better management options to address climate change.

4.2 Technical alternatives

The technical or logistical alternatives consider minimising environmental and social impact whilst implementing the project. These are not alternatives to replace the project but to

One alternative is to build the components of the structures in separate locations and transport them to be assembled on site, which will minimise waste in the NFRs and impact. The limitation of this is the location of the sites, some of which are deep within the NFR, making them inaccessible to vehicles. Creating access will have an impact.

Another alternative is scheduling the works for periods when the weather is favourable, as the NFRs do not have bitumen road access, and the transportation of materials to the construction sites can be disruptive to the environment and local communities.

5 Policies and Legislation and Institutional Framework

5.1 National Policies and Legislation

The BUREFOBI activities, including development strategies, will be implemented within the framework of national and international legal and regulatory requirements. Table 2.1 presents the national and internal frameworks and instruments TFS will adhere to in implementing the activities.

Table 41 Applicable National Policies and Legislation

Name of policy/legislation	Applicable sections of Policy/ Legislation	Policy directive
Policies		
National Environmental Policy, 2021	Article 2.3.3 b (v), 3.5	- To enhance conservation of forest ecosystems for sustainable provision of environmental goods and services. - Enhance conservation of forest ecosystems for sustainable provision of environmental goods and services.
Forest Policy, 1998	Articles 4.1.1, 4.2.2, 4.2.4, 4.3.4, 4.4.3, 4.4.11 and 4.4.12	- PS 1 Sustainable supply of forest products - PS 2 Efficiency in management and conservation - PS 11 Integration of beekeeping - PS 14 NTFP investment - PS 23 Requirement for EIA - PS 29 Management and Administration - PS 39 Community participation - PS 40 Innovative financing
Energy Policy, 2015	Article 3.6.6	Efficient conversion and use of solid biomass; sustainable production; Promote and enhance fuel-switch from wood fuel; use of solid biomass for generation of electricity; awareness and capacity for bio-electricity generation; and incentives for private investment in bio-electricity generation
National Land Policy, 1997	Article 4.2.9	Protection of sensitive areas including forests and catchment areas etc.
National Agriculture Policy, 2013	Article 3.25.2	Promotion of environmentally sustainable agricultural practises
National Water Policy, 2002 Draft 2023	Article 3.9	Ensure sustainable environment and social safeguard systems in the water sector
Legislation		

The Environmental Management Act No 20 of 2004	Article 63, 64, 73,	• Mandate for the management of forests • Coordination between forestry and Energy • Sector coordination on climate change
The Forest Act No 10 of 2002	Part III Section 18	• Forest Management for environmental sustainability
The Employment and Labour Relations Act, GN No. 6 of 2004	Part II and Part III of the Act	• Rights and protection • Employment standards
The Occupational Health and Safety Act No 5 of 2003	Part IV, V, VI and VII	• Safety provisions • Health and Welfare • Special Safety professions • Hazardous material
The National Land Act No 4 of 1999	Section 6	• Outlines land under forestry management
The Water Resources Management Act No. 11 of 2009	Part IV	• Management of water resources
Energy and Water Utilities Regulatory Authority Cap 414 of 2006	Section	• Environmental protection
Water Supply and Sanitation Act No 5 of 2019	Section 13	• Access to clean and safe water rights
Public Health Act No 10 of 2009	Part III	• Non-communicable and Communicable disease management
Guidelines Guidelines for Preparation of Management Plans for Natural Forests in Tanzania, 2007		• Review Plans every 5 years • Prescribe format of management Plans including biological aspects (flora and fauna, areas and species of special protection) • Include forest resources assessment data (inventory of trees, monitoring biodiversity such as migration routes, species richness, diversity, and endemism) • Plans should include EIA for development activities

5.2 International Agreements and Standards

Regional cooperation, financial support mechanisms, and capacity-building facilitate alignment of national policies with international standards, especially in developing countries such as Tanzania. For TFS, UNDP and the Global Environmental Facility (GEF) are capacitating Tanzania through the BUREFOBI project to meet internationally accepted standards. In addition to the UNDP SES and GEF Minimal Standards, the project is expected to comply with other international agreements (See Table 4-2) by conducting this ESIA and implementing the associated ESMP.

Table 42 International agreements and standards

Agreement	Directive
Convention on Biological Diversity, 1992	• Promote the protection of ecosystems, natural habitats and the maintenance of viable populations of species in natural surroundings. • Promote environmentally sound and sustainable development in areas adjacent to protected areas with a view to furthering protection of these areas. • Rehabilitate and restore degraded ecosystems and promote the recovery of threatened species, inter alia, through the development and implementation of plans or other management strategies. • Endeavour to provide the conditions needed for compatibility between present uses and the conservation of biological diversity and the sustainable use of its components. • Subject to its national legislation, respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity
The United Nations Framework Convention on Climatic Change, 1992	• Protect watershed are in part mitigation measures against changes in climate, the BUREFOBI interventions should not aggravate the situation.
International Union for Conservation of Nature (IUCN)	• In implementation of interventions areas of sensitivity should mapped for IUCN value (Redlist)
International Labour Organisation (ILO) Convention No. 59 (Fundamental Conventions), 2002; Convention, No. 155 of 1981 and Convention No. 148 of, 1977	• Prohibition of child labour, whereby employers are prohibited to employ children below the age of 14 years. • Children of 14 years but below 18 years may be employed to do light work, which is not harmful to their health and development. The work should not prejudice them from attending school. They are also restricted from work in hazardous conditions. • Prohibits all forms of forced labour. • Prohibits discrimination at places of work. • Supports the right of workers to associate

- Protection of workers and environment from the risks related to chemical, physical and biological agents at work and speaks to the need to protect the working environment for example air pollution, noise and vibration.

African Convention on the Conservation of Nature and Natural Resources (Revised Version) Maputo, 2003

Emphasises sustainable use, biodiversity conservation, traditional knowledge integration, and cross-border cooperation, to ensure NFRs are preserved as ecological treasures and vital resources for future generations. Advocates for collaboration, commitment, and innovation from all stakeholders.

International Treaty on Plant Genetic Resources for Food and Agriculture Treaty

Primarily targets agricultural contexts, with significant implications for the NFRs conservation, sustainable use, access to genetic resources, and the integration of forest management with agricultural practices. The vicinity and interconnectedness of the NFRs and agricultural practices (for BUREFOBI beekeeping) aims to ensure resilient and sustainable food systems, for the communities around the NFRs.

The Convention on the Conservation of Migratory Species of Wild Animals (CMS), 1979 for natural forests

The CMS promotes habitat conservation, ecosystem connectivity, and international cooperation, enhancing efforts to protect the diverse migratory species that depend on forests. Adherence to the CMS principles aims to foster healthy NFR ecosystems that support both wildlife conservation and human well-being.

World Bank Environmental and Social Standards 1, 2, 3, 4, 6 and 10 natural forests.

The NFRs should conduct and monitor holistic environmental and social impact assessments beyond the interventions of BUREFOBI – could be part of the Forest Management Plans (that include ESMPs).

UNDP SES Policies 1-8

The UNDP SES for NFRs promote environmentally and socially sustainable emphasising conservation, stakeholder participation, respect for rights, risk management, capacity building, and climate responsiveness ensuring that development supports the long-term health and integrity of the ecosystems while benefiting local communities. The SESP identified 13 risks - one S, 11 M, one L, with overall Substantial Risk Rating. The SES requirement for BUREFOBI implementation include development of this Scoped ESIA and ESMP.

Global Environmental Facility (guidelines on GEFs policy on environmental and social safeguards)

Guidance on how to implement the BUREFOBI project and report on the environmental and social Minimal Safeguard Standards 1-9 is provided. For BUREFOBI, this is done with the support of UNDP.

IUCN

Hosts the Red list database that lists species into one of nine Categories: Extinct, Extinct in the Wild, Critically Endangered, Endangered, Vulnerable, Near Threatened, Least Concern, Data Deficient and Not Evaluated. Vegetation Assessments of the NFR's should identify species under these categories.

5.3 Institutional Framework for Environmental and Social Management

TFS is the leading implementing agency, responsible for engaging the support of other stakeholders, including regulatory authorities, regional secretariats, LGAs, the private sector, Research Institutes, Non-Governmental Agencies (NGOs), CSOs and communities.

At the project management level, TFS receives funds from UNDP following the project's approval and develops annual plans and budgets with the PMU and any technical support that needs to be provided.

Table 43 Roles and Responsibilities for the ESIA and ESMP

Level	Institution	Roles and Responsibility
National	Vice President's Office - Division of Environment (VPO-DoE)	Co-ordinate environmental management policy, Act and EIA guidelines Approval and signing of ESIA certificate
Project Proponent TFS	National Environment Management Council (NEMC)	Environmental Monitoring and Compliance Auditing Advise Government on all environmental matter For BUREFOBI, the NFR management teams are responsible for implementing project activities in compliance with the EIA and ESMP, and, where relevant, preparing EIA reports and monitoring ESMPs. The preparation of the EIAs can be contracted in compliance with national regulations and international best practices by the PMU
Project Partners	UNDP and GEF	Project investment, implementation, monitoring and auditing Develop/ Recommend further assessments and plans as required Monitor implementation continuously (as part of M&E Plan) Report annually on SES in the PIR Implement adaptive SES management Evaluate SES during Mid Term Review and end of the project.
Local government	Districts/Townships/Municipalities/Cities along the corridor	Advise on implementation of activities at local government level Oversee and advise on implementation of national policies, laws, regulations at local government level

6 Environmental and Social Baseline

The baseline for the NFRs was established through field surveys, stakeholder consultations, review of existing secondary data, including TFS reports, and district socioeconomic profiles. The baseline is critical for understanding the potential impacts of the project and designing effective mitigation measures.

6.1 Biophysical Environment

6.1.1 Climate

The NFRs are spread in two of the four climatic zones in Tanzania, mainly the coastal and the highland zone. The coastal zone experiences high temperatures and humidity, with significant rainfall, especially between April and May. The NFRs in this zone include Pugu-Kazimzumbwi, Vikindu, Uzigua and Mwambesi. The Highlands zone exhibits a tropical climate, and the NFRs of Nou, Hassama and Mt Hanang are found in this climatic zone.

All the NFRs are vulnerable to climate variability and extreme events, including prolonged droughts, flash floods, and windstorms, which affect forest regeneration and infrastructure resilience. The proposed interventions are considered mitigation measures to protect the NFRs from deforestation and degradation.

Table 51 Climatic conditions in the NFRs

Nature Reserve	Region	Climatic Conditions
Pugu Kazimzumbwi	Coast	A coastal tropical climate with temperatures ranging from about 21°C to 23°C. The rainy seasons are March to May and a shorter season from October to December, with a dry season from June to September.
Vikindu Nature Forest Reserves	Coast	The mean yearly temperature is 26.0 °C and the average rainfall is 1034 mm. The NFR is close to the Indian Ocean.
Uzigua Nature Forest Reserves	Coast	Humid, oceanic climate with an annual rainfall of 690–1000 mm and a mean annual temperature of 24°C. Rainfall has been inconsistent in recent years.
Pindirola Nature Forest Reserves	Lindi	Hot and humid 16°C to 28°C. Annual rainfall 800–1400 mm. Long rains from mid-March to May and short rains from late October to December. High humidity, 98–100% during the long rains.
Mwambesi Nature Forest Reserves	Ruvuma	Part of the Selous-Mikumi ecosystem – the NFR has a tropical climate, with a wet season from December to May and a dry season from June to November. Temperature is an average of 25°C with highest temperature of 29°C and the lowest 22°C.
Nou Nature Forest Reserve (Babati)	Manyara	The mean annual rainfall is 1,200mm and an altitude between 1,670 and 2,170 meters above sea level. Temperatures range from 15°C to 21°C during the June-September period and from 25°C to 30°C from October to February.
Hassama Hill Nature Forest Reserve (Dongobesh Mbulu)	Manyara	High annual rainfall, averaging between 1800-2200 mm, with the hottest season in January-February and the coolest months from June-September. The mean daily temperatures are between \ (16\degree C\) and \ (24\degree C\), with a mean annual temperature of \ (20\degree C\).
Mt. Hanang Nature Forest Reserve	Manyara	Temperatures are generally moderate from 10°C to 2°C. Due to its elevation, the climate varies with altitude, with evergreen montane forests on wetter slopes transitioning to heathland and grassland above 2,700meters.

6.1.2 Geology and Soils

Soils range from sandy loams in coastal NFRs to clay loams and lateritic soils in highland areas where the NFRs of Nou and Mt Hanang are. Some sites have erosion-prone slopes, particularly at Mt. Hanang and Hassama, where gully erosion is common during periods of heavy rainfall. In 2023, disaster struck in Hanang after heavy rain triggered mudslides and floods that washed down rocks and logs into the villages, shattering homes, claiming lives and displacing several households. While the interventions of BUREFOBI do not directly address the potential for disasters such as landslides, establishing offices and ranger posts in these areas serves as an

early warning mechanism.

Soil fertility around the NFRs varies but is generally moderate in the highlands and low in the coastal areas. This drives local dependence on shifting cultivation and relative pressure on forest resources as surrounding communities tend to be pastoral or small-holder farmers.

6.1.3 Hydrology and Water Resources

All the NFRs have seasonal and perennial water sources, including rivers, natural springs, and wetlands. Notable water bodies include the Bagara River (Hanang), a key irrigation source, and Nou Springs (Babati), which are waterfalls at Mt. Hanang that serve as the primary source of potable water for the surrounding villages.

NFRs like Pugu-Kazimzumbwi and Vikindu boast water bodies that are used for recreation, such as sports (e.g., kayaking) and events or photo shoots (See photo 5-1).

Potential risks associated with the BUREFOBI interventions include sedimentation from earthworks, contamination from construction runoff, and reduced water flow resulting from deforestation. Therefore, maintaining natural buffers with water bodies is crucial.



6.1.4 Biodiversity and Ecosystems

The sites are dominated by Miombo woodlands, hosting a variety of plant and animal species (e.g., *Julbernardia* spp., *Isoberlinia* spp.). NFRs like Nou are home to unique tree species (pers. comm.) and water springs that feed Hyseng and other surrounding areas. Some areas are degraded due to anthropogenic activity (See photo 5-2).

Fauna includes small and large mammals such as bushbuck, baboons, duikers, and African elephants (especially in Uzigua and Pindirol). Some NFRs are essential bird areas supporting endemic and migratory birds. Threats to these areas include Illegal logging, bushfires, charcoal production, and livestock grazing. Uzigua NFR hosts a transient wildlife corridor as part of the Wami-Mbiki wildlife management Area. Resident herds of elephants have been observed in the Uzigua NFR. Pindirol NFR is home to albino hippos that have been sighted in a pool deep in the forest (See 5-3).



Photo 52 Proposed site for a Ranger post at Uzigua NFR with degraded Combretum woodland.

The NFR's conservation values lie in their role as critical biodiversity refuges and carbon sinks, making them key to Tanzania's efforts to mitigate climate change.

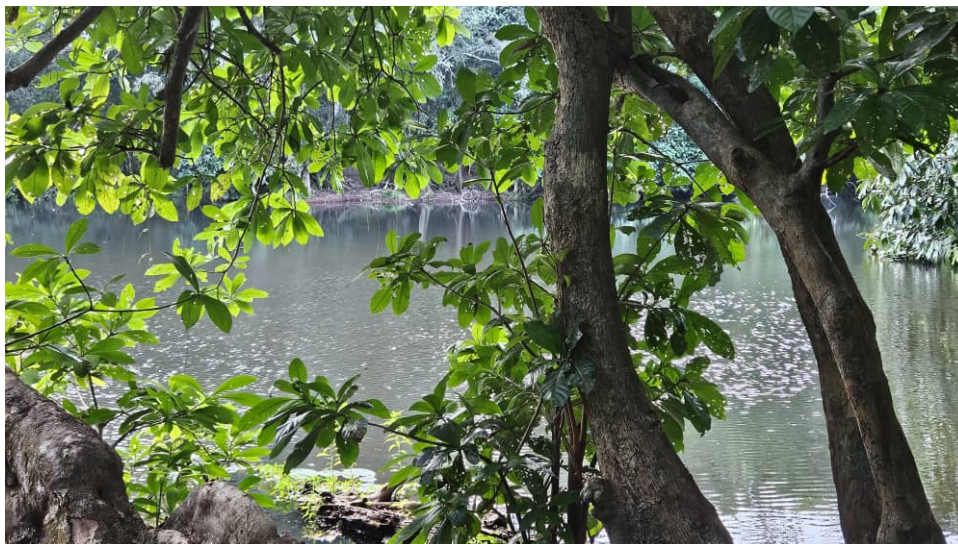


Photo 53 Hippo pool in Pindiرو NFR.

6.2 Socio-Economic and Cultural Environment

6.2.1 Demographics

There are approximately 104 villages and streets surrounding the NFRs (See Table 5-2). Ethnic groups are largely coastal and pastoral with population sizes being relatively small (comparing the number of villages per district to the number of villages around the NFR). Households are clustered around centres in the coastal NFRs (Mwambesi, Pindiرو, Pugu-Kazimzumbwi, Uzigua, Rondo, and Pindiرو) and are more sparsely situated in the pastoral areas (Mt. Hanang, Hassama Hills, Essimangor, and Nou). The coastal NFRs also have temporal pastoral communities, some of whom take up semi-permanent residence in the areas.

Table 52 Demography of the communities around the NFRs

NFR	District	Major Ethnic groups	Total Number of villages/sub-villages in District	Number of villages around NFR	District Population (2022 Census)
Mt Hannang	Hanang	Barbaig and Iraqw	96	11	367,391
Hassama Hills	Mbulu	Iraqw	70	5	238,272
Essimangor	Monduli	Masaai	62	7	227,585
Mwambesi	Tunduru	Ndendeule		9	412,054
Nou	Babati/ Mbulu	Iraqw, Assa, Gorowa, Kw'adza, Mbugwe, Datooga, Masaai and Barabaig	102/70	23	375,200/238,272
Pindiرو	Kilwa	Swahili and Machinga (Mang'ati and Sukuma pastoralists)	90	2	297,676
Pugu Kazimzumbwi	Kisarawe	Zaramo & Ndengereko	66	15	159,226
Rondo	Lindi	Mwera, Makua, Makonde, Ngindo, Matumbi and Yao		6	1,194,028
Uzigua	Bagamoyo	Zaramo (Mang'ati, Kuria and Sukuma pastoralists)	8/127	13	205,478
Vikindu	Mkuranga	Zaramo, Ndengereko, Matumbi and Makonde	121	7	222,921

6.2.2 Social Infrastructure

Most villages have primary schools and basic health facilities but lack access to clean and safe water. Road access is often poor, limiting access to markets, healthcare, and education. Secondary and technical education is mainly located in the District centres and none of the villages around the NFRs host a tertiary education facility.

6.2.3 Gender and Vulnerable Groups

Women and youth are key forest resource users, often responsible for collecting firewood and engaging in small-scale farming. Vulnerable groups include female-headed households, pastoralists, and landless youth who rely heavily on forest products.

None of the NFRs has a gender desk or officer as part of the management structure. However, they utilise the LGA gender desk and TFS headquarters policy guidance to address gender-related issues, though there is room for improvement, particularly in recruitment (See Table 5-3). Hassama, Nou and Mt Hanang NFR management teams indicated gender related concerns with few women participating in TFS opportunities potentially due to cultural norms.

Table 53 NFR staff capacity

NFR	Permanent		Contract	
	Male	Female	Male	Female
Pugu- Kazimzumbwi	10	7	8	4
Uzigua	1		2	
Vikindu	7	5	19	
Essimingor	3	4	2	
Nou	1	4	3	
Mt. Hannang	3		2	1
Hassama	3		3	2
East Matogoro	1	1		3
Mwambesi	2	1	1	1
Pindiro	1		2	
Rondo	5	1	4	1

6.2.4 Cultural Heritage

Some reserves (e.g., Vikindu, Hanang, Hassama) are culturally significant for local ethnic groups, with sacred groves, ritual sites, and burial grounds. These must be protected through community consultation.

6.2.5 Livelihood activities

Agriculture is the mainstay for most communities around the NFRs, who practice horticulture and subsistence farming to a large extent. At Nou and Essimingor, NFR Agroforestry features as a livelihood, and TFS is providing support for the establishment of VLFRs.

Beekeeping – TFS is mentoring and providing training to several youth groups in the NFRs on beekeeping. With improved supervision, these groups can expand their production and connect their honey products to broader markets. Beekeeping training is offered for hives within the NFRs and those on village and private woodlots. Vikindu NFR also offers medical api tourism.

Non-Timber Forest products (NTFPs) – The communities consulted report that they depend on reeds and grasses from some of the NFRs, such as Nou. In NFRs such as Vikindu, Mt Hanang, Hassama Hills and Essimingor, it was reported that goats, sheep and cattle are found grazing or being watered, especially in the dry season. Uzigua NFR provides sustainable harvesting permits in collaboration with village environmental committees, this has helped restrict encroachment of the forest.

Tourism and Conservation-related engagement – Communities in the vicinity of the NFRs are exposed to different forms of engagement that help to reduce pressure on the forests and, in part, restore the water catchment, including:

- *Maintenance* of the forest boundaries as casual labour. This engages the communities in awareness on a) conservation, b) fire hazard, and c) tour guide opportunities.
- *Services* for the tourist bands are managed by private sector entities, which in turn employ locals.
- *Tour guides* – TFS offers training and provides recommendations for local youth to guide tourists.
- *Protection* – some NFRs, such as Pugu-Kazimzumbwi, outsource ranger services to the nearby military barracks.
- *Forest product alternatives* – Some of the NFRs host nurseries with exotic species that they provide to the communities to establish their own woodlots.

- *Sports events* – Pugu – Kazimbumbwi NFR markets its camps for sports groups to practice and is developing a cycling trail for mountain bikers. Pindi NFR offers its trails for marathon runners.

Business – There are no large industries in the vicinity of the NFRs; however, small businesses trading sundries and groceries are common in village centres. Transport businesses, such as mini-buses (24-seaters) and motorbikes, serve to connect communities with larger centres.

6.3 Stakeholder Engagement and Grievance Management

During the development of the ESIA, consultations were held with various stakeholders (See Photos 5-4 and 5-5), and observations and concerns were noted that may be addressed by TFS (See Appendix 7). To ensure continued stakeholder engagement, TFS has prepared an independent Stakeholder Engagement Plan (SEP) for the BUREFOBI project, which guides further consultation during its implementation. The role and purpose of stakeholder engagement for the project is to facilitate the attainment of the objectives through:

- *Planning and design of project activities*: During the initial planning of detailed project activities, the PMU engages with the respective TFS department staff to gather feedback on specific restrictions and requirements that need to be incorporated into the design. At the NFR level, the Conservator collaborates with the LGA technical staff to share information on the proposed intervention with the respective wards and receive the opinions/concerns of the surrounding communities.
- *Decision-making* – Primary responsibility for decision-making lies with TFS. However, LGA council meetings will be utilised by TFS to ensure a participatory and transparent process that is representative of all stakeholders, particularly when grievances are registered.
- *EIA* - Stakeholder consultations are a requirement under the National Environment Protection (Impact of Proposals) Regulations 1998.

□



Photo 54 Consultation in Babati District



Photo 55 Consultation in Lindi District

17

TFS and its implementing partners and contractors will address grievances/complaints submitted by the stakeholders who benefit from or are impacted by the project. It is to provide clarity and predictability on how grievances/complaints will be received, assessed, sorted, resolved and monitored. The Grievance Redress Mechanism (GRM) is an essential tool for registering concerns about the project, if any, and establishing a process for corrective action.

The independent SEP prepared by TFS includes a GRM that identifies and resolves environmental and social issues affecting the project. The GRM should track each complaint and close the complaint after it is resolved. The GRM outlines the procedures for managing grievances and complaints in accordance with international best practices.

The GRM is a social performance indicator as the number and the nature of the received grievances and complaints elaborate how the Project is conducted and the behaviour of communities, employees and contractors. A high number of grievances will indicate the need to adjust some procedures and practices to reduce negative impacts or conflict with the local population. It is expected that the effective implementation of the GRM will help to establish good relations between the Project/ Contractor and the local communities.

This GRM works in conjunction with other related tools, including the ESMP. To implement an effective GRM, TFS, the donor and other stakeholders all have responsibilities to undertake.

7 Potential Environmental and Social Impacts

Notably, the scope of component 2 activities is unchanged since the development of the ProDoc. Thus, the scoped ESIA and ESMP consider these risks in addition to standard impacts from construction activities.

The approach used to identify the potential impacts of BUREFFOB component 2 was based on best-practice impact-assessment methodologies. Briefly, the experience and knowledge of impacts and mitigation measures from similar activities have been used to devise the assessment and where warranted, recommendations for regulatory procedures to be followed.

Impacts are categorised by project phase: pre-construction, construction, operation, and decommissioning. The impacts are further categorised as positive or negative, significant, moderate or low which is rated according to the estimated frequency and likelihood of occurrence. Localised or cumulative impact refers to the potential cascading effect of the impact. The matrix below further illustrates the assessment.

Probability of Occurrence		Very High L			
	High	L	M	S	S
	Moderate	L	M	M	S
	Low	L	M	M	M
	Very Low	L	L	L	M
		Very Low	Low	Moderate	High Very High

**Impact Level/
Opportunity**

- Significant (S) - Environmental aspects with one or more environmental impacts/opportunities can be managed with an ESMP objective and target. Largely specific to an intervention and or location. Highly likely to occur, may require management attention. Current controls have significant uncertainties; corrective actions are possible (to be determined by robust M&E and audit). Very high and High are distinguished by estimated certainty of occurrence.
- Moderate (M) - Related environmental aspects will be managed to avoid becoming high. Generally, standard best practices under the ESMP. It may occur; management is required in some cases. Current controls exist with some uncertainties; informed by review.
- Low (L) - Related environmental aspects are not significant (unlikely to occur) and should be managed as appropriate. Very Low and Low are defined by likelihood.

7.1 Potential Negative Impacts

7.1.1 Pre-Construction Phase

- i) Land Acquisition and Access Restrictions:** The SESP identified that temporary or permanent loss of community land-use rights may lead to grievances due to the presence of vulnerable communities around some NFRs. The UNDP SES advocates consideration of land-user collectives that may result in economic displacement, even if the resource use is illegal and or where affected communities have limited capacity to engage fully in participatory processes related to project activities that influence land access or generate economic benefits.

TFS has established relationships with some of the communities in the Central Zone to support Village Land Forest Reserves (VLFRs). However, implementing and formalising VLFRs in the Northern zone, where pastoral communities are common, such as Essimigor NFR, was still underway at the time of the ESIA. In addition, TFS is working to establish Forest Governance Agreements (FGAs), including Joint Management Agreements (JMAs) with the NFRs.

For all the component two construction interventions, the land to be used is either within the NFRs, on the border of the NFR, or outside the NFR under LGA administration. There has been no acquisition of land from the surrounding communities. The interventions within the NFR aim to improve protection and, hence, enforce restrictions in line with the conservation status of the forests. The conservation status of NFRs permits only research, education and nature-based tourism activities. The complementary income-generating activities for the communities (See section 5.2 Livelihood support by TFS) provide alternatives to address the potential restriction of access.

This implies that, for communities, restrictive access will **moderately** impact **livelihoods**, particularly for the NFRs exploited by pastoral communities (Mt Hanang, Nou, and Mwambesi).

- ii) Compliance with environmental and social safeguard standards.** TFS has developed six Conservation Investment Plans (CIPs) and Forest Management Plans (FMPs) for the NFRs to guide investors and conservator teams in adhering to best-practice standards. The developed FMPs and CIPs do not adequately account for social and environmental safeguards as required by UNDP SES, potentially undermining TFS's capacity to guide investors and ensure adherence to environmental and social safeguard standards. The CIPs and FMPs are internal guidance documents that TFS reviews regularly and, if addressed promptly, can have a **low** impact of **institutional** nature. Specifically, the SESP identified a disconnect in stakeholder consultation during planning, implementation, and benefitting from activities as Risk 2, which could lead to grievances. The absence of grievance management in the developed CIPs and FMPs warrants attention.

- iii) Vegetation loss:** Site preparation, particularly for the tourist offices, may remove indigenous vegetation and disturb wildlife habitats. Furthermore, poorly designed or executed project activities related to landscape/habitat restoration, fire control, could introduce Invasive Alien Species (IAS) (under Overall Project Outcome 2) or, under the Carbon Project, damage critical or sensitive habitats or increase greenhouse gas emissions. All the tourist offices are outside the NFRs (Mt Hanang, Hassama Hills, and Nou) or on their boundaries (Pugu-Kazimzumbwi and Vikindu), where the



natural vegetation is secondary, exotic, or seasonal farmland (Nou). The risk of IAS and Climate can be **moderate** (due to the geographic footprint), but **long-term** if not mitigated appropriately.

- iv) Cultural Site Disturbance:** The

Photo 61 Proposed Tourism Office site – Nou NFR

ESIA did not map cultural sites, but it was reported by stakeholders that some NFRs are used for rituals (Rondo, Pindiro, Mt Hanang, Mwambesi). Screening and siting of these areas inform TFS FMPs and prevent unintended disruption. The potential impact is **very low** as all activities are sited on government land, and the communities are informed. Access for rituals is permitted under guidance from the LGA and TFS.

7.1.2 Construction Phase

- i. **Health and Safety:** The construction of visitor and management infrastructure, services, and facilities may have temporary detrimental impacts on the health and safety of construction workers, reserve staff, and/or reserve-adjacent communities, and/or may not adhere to international Occupational Health and Safety (OHS) or labour standards. The potential impact of worker health and safety is **low** as TFS commissions work to credible entities approved by the national OHS regulator and that follow ESMP practice.
- ii. **Soil Erosion and Sedimentation:** Earthworks on slopes may lead to gully formation and downstream siltation of rivers. None of the works are sited on slopes and thus this impact is **low**.
- iii. **Water Pollution:** The spillage and leakage of oils, diesel, and other solvents from construction equipment and vehicles during construction can contaminate surface water and subsurface soil, particularly in areas with various water bodies (See section 5.1.3). Runoff water from exposed soils and spills from trucks, such as hydrocarbons, oil, diesel, or hazardous materials, may exacerbate changes in water quality. The commissioned works will ensure compliance with the ESMP, so the impact is **low** and localised to the sites, none of which is in the vicinity of a water body.
- iv. **Air and Noise Pollution:** Dust from clearing and haulage; noise and vibrations from equipment and trucks can disturb communities and wildlife. During construction, significant amounts of dust may be generated at the project site and surrounding areas due to excavation work and the transportation of building materials. Air and noise pollution are considered **moderate** and **short-lived**, given the minor scope of works to be implemented.
- v. **Solid and Liquid Waste Generation:** Construction activities can potentially produce a considerable amount of waste, including scrap metal, concrete debris, food waste, plastics, wood, metals, steel, rubber, paper materials, etc. Solid waste can affect the quality and safety of underground and surface water (if contaminated). Liquid waste may also be produced during this phase. The commissioned works will ensure compliance with the NFRs' waste management policies, so the impact is **low** and localised to the immediate project sites.
- vi. **Fire Risk:** Welding sparks and cooking fires may trigger wildfires during the dry season. The commissioned works will ensure compliance with the NFRs' fire management regime, so the impact is **moderate** (as if an accident happen the impact could be substantial) and localised to the immediate project sites.



- vii. **Spread of Communicable Diseases:** Local community members involved in project activities, such as stakeholder meetings, workshops, and community fieldwork, may be at a heightened risk of exposure to communicable diseases. Fear of exposure may discourage vulnerable stakeholders from participating in meetings. With increased education and efforts by the LGA and other civil society organisations to inform communities about the prevention and treatment of communicable diseases, this risk is **low**.

- viii. **Traffic Hazards:** Increased construction traffic may cause accidents on community roads. The access to the NFRs is not exposed to heavy traffic, and the surfacing (gravel/earthen, see photo 6-2) does not allow for high speeds, making this impact **moderate**. The potential concern is transporting goods to the project sites, for example, to Mt Hanang or Hassama hills, as there is an escarpment with unprotected edges; drivers need to be diligent, and the vehicles should be roadworthy. These are roads outside the NFR management.

- ix. **Wildlife Disturbance:** Noise and machinery can scare away animals or disrupt their breeding. The construction design of the tourist bandas within the NFRs takes considers sustainability and reduced disturbance of wildlife using natural material and raising the structures that facilitate passage of



animals (see photo 6-3).

Community Conflicts: Disputes may arise over employment opportunities, procurement preferences, or land use. Tourism can sometimes bring negative cultural influences, as exposure to foreign visitors can erode traditions. TFS and its implementing partners are obligated to work with LGAs to recruit staff and labour, and local

employment procedures aim to promote local consideration, suggesting that this impact would be **low** if the processes are adhered to.

- xi. **Labour influx:** The construction under component has estimated durations of three to four months and largely relies on semi-skilled labour sourced locally through LGA processes. The short-lived nature of the work suggests that the influx into the project will be **low**.
- xii. **Gender concerns:** activities may not fully incorporate or adequately reflect the views or needs of women and girls, and may not ensure equitable opportunities for their involvement, empowerment, and benefit. TFS has developed a Gender Action Plan (GAP) to ensure gender concerns are appropriately addressed in the entire project including component two interventions thus this concern may be **very low**.
- xiii. **Economic displacement** (even if temporary): NFRs such as Nou, Uzigua, Mwambesi, and Hassama Hills, which are used by pastoral communities to graze their herds, could face restricted access to resources due to increased capacity for protection. The JMAs and FGAs that TFS is developing aim to consider co-created solutions to ensure communities have alternatives and means to promote sustainable use. Solutions such as woodlots and VLFRs provide communities with alternative livelihoods and grazing resources. In the interim, this impact on communities is considered **moderate** as none of the NFRs has fully implemented the instruments developed.

7.1.3 Operation Phase

- i. **Visitor Pressure:** Increased visitor numbers may lead to littering, habitat trampling, and human-wildlife conflict. TFS capacity within the NFRs is currently low (see Table 2-2), and additional traffic to these areas will make compliance with best-practice standards and guidelines a challenge, potentially reducing the conservation value of the forests. This needs to be addressed institutionally in the TFS strategic plans, with consideration of resourcing the NFRs; it has a **moderate** impact given that ecotourism is a core activity.
- ii. **Maintenance Burden:** Poorly maintained facilities could become unsafe and not attract the visitor numbers expected. TFS PMU informed the consultant team that the long-term plan is to commission out management of the tourist bandas, and that the gates and tourism offices are to be incorporated into the annual plans and budgets for maintenance. This impact is considered **low**, assuming TFS will be adequately resourced in the long term.
- iii. **Human Rights:** Forest rangers and community-based forest guards may infringe on human rights in enforcing forest protection regulations. Capacity building and strengthening management governance mechanisms are continuous processes, and thus, TFS's collaboration with communities, implementing the SEP, which includes a GRM, will ensure that the impact is **low**.
- iv. **Occupational Health and Safety:** Law enforcement personnel, community forest guards, and informers may face occupational safety and health (OHS) risks while performing their duties. With increased awareness and implementation of the JMAs, the FMAs will improve their working relations with communities. Furthermore, TFS's general working conditions improve as the organisation grows and becomes more competent, suggesting that the impact would be **low**.
- v. **Resource use:** Use of water, energy, and other resources will naturally increase with more visitors; current practices advocate sustainable use from environmentally friendly sources such as grid energy, energy-efficient stoves, liquid natural gas, rainwater harvesting, and others. TFS continues to integrate environmentally friendly, innovative technologies into its operations as a conservation-oriented organisation; the impact is expected to be **very low**.
- vi. **Waste management:** Similar to water and energy, solid and liquid waste generation will increase with increased visitor access. Promoting best-practice clean technologies is TFS's approach to ensuring environmental conservation. The impact of waste is expected to be **low** and one that can be mitigated if proper procedures are in place and followed.
- vii. **Biodiversity Loss:** NFRs, such as Pugu-Kazimzumbwi, that are close to or surrounded by urban areas are exposed to illicit anthropogenic activities. The Pugu Mnadani (Bangulo) area is most exposed to encroachment. With the increased level of protection and awareness to the surrounding communities

the encroachment may be managed to a **moderate** level. The impact is considered moderate as Pugu-Kazimzumbwi is increasingly urbanising and thus the threat to encroachment can be politically motivated beyond the mandate of TFS.

- viii. **Wildfires:** With climate change and potential increases in wildfires, NFRs may see more incidents as access improves. Illicit activity (charcoal burning) may also increase with access and vicinity to urban centres. TFS runs training for fire hazards with communities around its forests and plantations. It is anticipated that this practice will continue to reduce the risk of wildfires.

7.1.4 Decommissioning Phase

The lifetime of the proposed constructions exceeds 50 years, subject to maintenance and possible modification. Considering the gazettment dates (pre-independence) of the NFRs and Tanzania's environmental and climate change agenda, it suggests that protecting these forests will not cease in the near future. The construction is long-term, albeit environmentally friendly; the structures have a design life of at least 50 years, provided there is adequate maintenance. Closure is not envisaged, except for minor replacements during routine maintenance schedules.

Nevertheless, should decommissioning be necessary, an independent assessment (regular audit) and guidance based on best practice at the time will be carried out for each intervention. A potential list of items to be considered is indicated in Appendix 6.

7.2 Potential positive Impacts

7.2.1 Socio-Economic Benefits

- i. **Employment and Income Generation:** The BUREFOBI project will provide short-term construction employment (mainly semi-skilled) and long-term employment for rangers, guides, and maintenance staff. This has a long-term positive impact on the economies of the communities.
- ii. **Local Procurement:** Purchase of construction materials and food supplies from nearby communities boosts the local economy.
- iii. **Capacity Building:** The BUREFOBI project will provide training of local youth and women in construction skills, eco-tourism services, and environmental awareness.

7.2.2 Environmental Benefits

- i. **Improved Forest Protection:** Stronger surveillance reduces illegal logging, grazing, charcoal production, and poaching, preserving biodiversity for future generations.
- ii. **Habitat Restoration:** Landscaping and tree planting will increase green cover and enhance ecosystem services.

7.2.3 Tourism Development

- i. **Increased Visitor Numbers:** Modern facilities attract more tourists, generating revenue for TFS and communities. Visitation to the NFRs is currently relatively low (see Figure 6-1), with Pugu-Kazimzumbwi and Vikindu receiving the highest numbers who are mainly residents (school children and researchers). An increase in tourist numbers and/or tourism developments, which could directly (and/or indirectly) result from the project's activities, may have a variety of unintended social and environmental impacts that may drive, inter alia, social change, an influx of jobseekers, the commercialization of culture, and overdependency on tourism incomes.



ii. **Cultural Heritage Promotion:** Signage and interpretation centres raise awareness of local traditions and history. Rondo NFR has a spectacular observation point to observe the golden hours and boasts Germanic remains and a historic tree that was said to be planted by the founding father of Tanzania, the late Julius K Nyerere (See photos 6).

iii. **Access to tourist services:** The offices will serve as a hub for tourism promotion. The administrative buildings could support small businesses for villagers by placing handicrafts and cultural products for tourists.

Figure 61 Visitors to the NFRs from 2022 to 2024

7.3 Cumulative Impacts

- i. **Regional Development Synergies:** Improved roads and promotion of the NFRs will encourage new investments, potentially increasing pressure on natural resources if not well managed.
- ii. **Combined Habitat Disturbance:** Simultaneous works across multiple NFRs may cumulatively affect migratory species or ecosystem connectivity.



17

8 Mitigation and Enhancement Measures

Translating the impact findings into a practical, auditable set of mitigation, enhancement and monitoring actions that are to be implemented by the Contractor, overseen by TFS and LGA is the focus of this section. The mitigation measures only address significant and moderate impacts, actions to be taken, responsible parties, timing, performance indicators, monitoring parameters and frequency, and verification methods.

The Contractors commissioned by TFS must prepare a site-specific Contractor Environmental and Social Management Plan (C-SEMP) within 14 days of mobilisation that adopts these mitigation measures and provides site-level technical drawings, materials lists, schedule and detailed cost line items.

The TFS should verify the C-ESMP and inspect its implementation every month during both the construction and operational periods. The Contractor will compile records and monitoring data into a monthly report, and a quarterly verification report will be submitted to TFS to inform the ESMF and project reporting.

8.1 Mitigation measures

Mitigation measures are outlined for significant and moderate impacts only. Many of these mitigations relate to the construction and operation phases.

8.1.1 Waste generation (solid & inert waste)

Construction will generate mixed solid waste: packaging (plastics), cement bags, timber offcuts, scrap metal, and some hazardous waste (paint, adhesives, oils).

Mitigation measures:

- i. Provide color-coded waste bins at strategic locations (e.g., site office, worker camps, and gate) and signboards explaining segregation.
- ii. Appoint a Waste Focal Person on site and sign a contract with licensed waste collector/district disposal facility.
- iii. Reuse and recycle inert materials where feasible (timber offcuts for temporary works, crushed concrete for backfill).

- IV. On-site hazardous waste store with bunding; separate labelled containers for oils, paint and solvents. Hazardous wastes to be removed by licensed handler.
- V. Monthly waste audits and weekly visual inspections.

8.1.2 Water pollution (surface & groundwater)

Runoff from earthworks, cement washings, fuel/oil spills, and sanitary wastewater may degrade rivers, springs, and wetlands.

Mitigation measures:

- i. Maintain a 30 m vegetated buffer between construction and any watercourse as a no-work zone where feasible.
- ii. Design and install silt traps/sediment basins at all drainage discharge points; use check dams on diversion channels.
- iii. Prohibit on-site washing of concrete mixers or machinery within 100 m of water bodies; designate a concrete washout area with sedimentation and containment.
- iv. Use drip trays for fuel/oil storage and refuelling; maintain spill kits and train staff on spill response.
- v. Portable toilets and sewage holding tanks for worker camps; regular desludging and off-site disposal.
- vi. Immediate reporting and remediation of any spills; contaminated soils to be excavated and disposed of at licensed facility.

8.1.3 Air quality and dust

Dust from site clearance, stockpiles and haul roads can affect nearby communities, vegetation and workers.

Mitigation measures:

- i. Water-spray haul roads and exposed surfaces during dry and high-traffic periods.
- ii. *Cover or dampen loose material loads during transport.*
- iii. Limit speed of construction vehicles on site and local access roads (max 20–30 km/h). *Secondary.*
- iv. *Install temporary windbreaks or vegetative screening where appropriate.*
- v. Provision of N95-type masks for workers when dust levels exceed safe thresholds.

8.1.4 Noise

Construction noise may disturb households, wildlife and sensitive receptors (schools, clinics).

Mitigation measures:

- Restrict noisy activities to daytime hours (e.g., 07:00–18:00). Acceptable noise levels in a residential area is approximately 60 decibels during the day and 40 decibels at night, according to the Environmental Management (Standards for Control of Noise and Vibration Pollution) Regulations, 2015.
- *Maintain equipment and fit silencers/mufflers; use modern low-noise equipment where feasible.*
- *Temporary acoustic screening for very noisy fixed operations (e.g., crushing) near sensitive receptors.*
- Community notice of planned high noise works (48 hours prior).

8.1.5 Soil erosion and slope stability

Earthworks, clearing and stockpiling on slopes increase erosion risk and secondary sedimentation.

Mitigation measures:

- i. Minimise clearance to the absolute footprint; protect natural vegetation outside the footprint.
- ii. Phased clearing and stockpile stabilisation; avoid long exposure of bare ground.
- iii. *Install erosion control measures: silt fences, geotextiles, check dams, contour trenches, and temporary berms.*
- iv. *Re-vegetate disturbed areas within 30 days of final grading using native species; use hydroseeding for larger slopes.*
- v. Avoid placement of spoil on slopes; designate stable spoil areas with compaction and stabilisation.

8.1.6 Sanitation, hygiene & public health

Poor sanitation at construction sites among workers increases the risk of diarrhoea, respiratory infections, and

the other communicable diseases.

Mitigation measures:

- i. Provide an adequate number of genders segregated mobile toilets at camps and work fronts (min. 1:15 workers)
- ii. *Hand-washing stations with soap are available at all toilets and dining areas.*
- iii. *Desludge toilets regularly and arrange off-site disposal at licensed facilities.*
- iv. *Establish a health & hygiene package: orientation for all workers, daily cleaning rosters and designated hygiene supervisor.*
- v. *Collaborate with the District Health Office to conduct awareness sessions, distribute condoms, and link workers to local clinics for screening.*

8.1.7 Fire risk & wildfire prevention

Welding, cooking and careless disposal of cigarettes can trigger wildfires, especially during dry season.

Mitigation measures:

- i. *Establish 10–20 m firebreaks around work camps and stockpiles.*
- ii. *Prohibit open burning of waste; designate safe, contained cooking areas with fire extinguishers.*
- iii. *Provide fire-fighting equipment (portable extinguishers, water tanks) and train fire marshals in each camp.*
- iv. *Implement hot-work permit system for welding and cutting with fire watch for minimum 1 hour after work.*
- v. Community awareness and coordination for early fire detection.

8.1.8 Occupational health & safety (OHS)

Workers are exposed to risks of injury, falling objects, vehicle accidents, and ergonomic hazards.

Mitigation measures:

- i. *Prepare and implement a site-specific OHS plan consistent with national regulations and international good practice (ILO).*
- ii. Provide and enforce use of PPE (helmets, boots, gloves, reflective vests, eye protection).
- iii. *Signage, barricading of hazardous zones, and safe working procedures.*
- iv. Daily toolbox talks, weekly safety inspections, and incident reporting within 24 hours.
- v. *First aid kits with trained first aiders on every shift; referral arrangements with the nearest clinic/hospital.*
- vi. Fatigue management (limits on working hours) and heat stress mitigation (rest breaks, drinking water).

8.1.9 Communicable diseases, HIV/AIDS and social risks

Influx of non-local workforce can increase risks of HIV/STI transmission and social issues such as increased transactional sex and gender-based violence.

Mitigation measures:

- i. Mandatory induction on HIV/AIDS/STIs, condom distribution points, and referral linkages with District Health.
- ii. *Code of conduct for workers (against harassment, gender-based violence) and disciplinary measures.*
- iii. *Community engagement plan focusing on vulnerable groups and grievance redress access.*
- iv. Worker accommodation managed to avoid interaction patterns that drive risk (family accommodation preferred where feasible).

8.1.10 Community grievances & social conflict

Disputes over employment, land access or perceived unfairness can lead to unrest and project delays.

Mitigation measures:

- i. *Establish a clear, locally-appropriate Grievance Redress Mechanism (GRM) with multiple entry points (site office, community representatives, and phone/WhatsApp) and clear timelines (acknowledge within 5 working days; resolve within 30 days).*
- ii. *Transparent local recruitment procedures and publicly advertised job opportunities; maintain recruitment records.*
- iii. *Regular community meetings and grievance awareness notices.*
- iv. Record and report all grievances in monthly ESMP reports.
- v. Record findings on gender-based violence and Sexual exploitation, abuse and sexual harassment (SEAH)

as relevant (align with reporting of GAP).

8.1.11 Biodiversity disturbance & poaching

Clearance, night lighting, and increased human presence can fragment habitat, disrupt wildlife and increase poaching risk.

Mitigation measures:

- i. Avoidance hierarchy: eliminate siting in highest value habitats; minimize footprint.
- ii. Define and enforce no-go zones and buffer areas around key habitats and springs.
- iii. *Minimize night-work and use directional, low-intensity lighting to reduce wildlife disturbance.*
- iv. *Strengthen ranger patrols (equipment and incentives) during and after construction; support community-based monitoring.*
- v. *Implement prey/edge management: retain snags & native understory where possible; replant native species (2:1 replacement target—two native seedlings for each tree removed).*
- vi. Chance-find and immediate reporting of any evidence of protected species or nests; stop works and notify TFS.

8.1.12 Economic displacement

Improved protection of the NFRs will restrict access to communities that utilise the areas for different forms of livelihoods.

Mitigation measures:

- i. TFS to expedite the development and implementation of JMAs and FGAs.
- ii. TFS should continue to support communities through its Corporate Social Responsibility (CSR) efforts and collaboration with other agents.

8.1.13 Cumulative and indirect impacts

Regional infrastructure improvements and multiple concurrent site activities can have combined ecological and social effects that extend beyond the impacts of individual sites.

Mitigation measures:

- i. Stagger major works across NFRs where possible to reduce simultaneous pressure on regional resources (contractor scheduling & TFS coordination).
- ii. *Regional coordination meetings (TFS, Districts, Contractors) quarterly to review cumulative issues (wildfire risk, labor migration, tourist pressure).*
- iii. Regional environmental monitoring protocol to detect ecosystem-level changes and adaptive management triggers.

□

9 Environmental and Social Management Plan

The objective of the Environmental and Social Management Plan (ESMP) is to provide the delivery mechanism for the mitigation measures presented in this ESIA (Section 7). The combines both the management and monitoring mechanisms.

This ESMP provides a comprehensive framework for monitoring environmental, social, and occupational health & safety (OHS) parameters throughout the pre-construction, construction, operation, and decommissioning phases of the BUREFOBI Project. A strong monitoring plan is essential for ensuring the ESMP is effectively implemented and for detecting potential non-compliance early.

The results of the monitoring should inform the ESMF, SEP, and GAP reporting for the BUREFOBI project.

9.1 Objectives of the ESMP

- To ensure compliance with national environmental regulations, UNDP SES requirements, and TFS guidelines.
- To track the effectiveness of mitigation and enhancement measures.
- To identify unanticipated impacts early and trigger adaptive management.
- To provide transparent information to stakeholders and support community trust.

9.2 ESMP Approach

Management and Monitoring will be conducted using a **tiered approach**, with some actions directed to TFS and its implementing partners, and others to third-party entities (e.g., contractors) to be supervised. Table 8-1 highlights the management and monitoring of identified impacts, including responsibility, cost allocation, performance indicators, and verification methods.

9.3 Roles and Responsibilities

Effective ESMP implementation requires clear institutional roles, defined responsibilities, and well-established communication channels among all stakeholders. The institutional arrangement ensures accountability, compliance, and smooth project execution.

9.3.1 TFS

1. **Development of Procedures and Processes:** Create and support procedures for implementing the Stakeholder Engagement Plan (SEP), including NFR-specific Stakeholder Engagement Actions tailored to locations or activities as needed.
2. **Workforce Communication and Training:** Inform the TFS workforce about the SEP's contents and requirements. Provide training to ensure all personnel understand their responsibilities.
3. **Implementation and Mitigation:** Execute all requirements and mitigation measures outlined in the SEP and its supporting procedures.
4. **Stakeholder Communication:** Communicate the SEP's contents and requirements to contractors and other stakeholders. Provide contractors with TFS-gathered stakeholder information needed to develop action plans. Distribute TFS-produced communication materials to contractors, the community, and other stakeholders. Maintain the TFS website and monitor national press for project-related articles, including stakeholder activities or statements. Engage with media outlets to ensure accurate and positive coverage of TFS activities. Develop and implement national and regional awareness campaigns, including those related to forest plantations and employee policies. Establish monitoring schedule, sampling points and GRM and communicate to local communities.
5. **Policy Review and Approval:** Review and approve the Gender-Based Violence (GBV) and Sexual Exploitation and Abuse and Harassment (SEAH) policies, Health and Safety policies, the SEP, ESIA and ESMP as part of the overall BUREFOBI project. Approve alternative solutions where applicable.
6. **Environmental and Social Management Plan (ESMP):** Coordinate and supervise the implementation of the ESMP to ensure alignment with the SEP. Provide appropriate training to workers and contractors on using the ESMP.
7. **Compliance and Reporting:** Review contractors' reports and produce external and TFS compliance reports against commitments. Ensure compliance with relevant project standards, UNDP SES, statutory requirements, and permit and license conditions.
8. **Subcontractor and Supplier Performance:** Ensure the performance of subcontractors and primary suppliers aligns with the requirements of the SEP and other TFS guiding documents. Approve any required revisions within 7 days of submission.
9. **Inspection and Monitoring:** Implement an inspection and monitoring program for NFR management requirements. Recommend or approve corrective actions when necessary.
10. **Grievance Management:** Oversee grievance management processes.
11. **Continual Improvement:** Identify opportunities for continual improvement for TFS staff and operations.

9.3.2 UNDP and GEF

1. **Policy Review and Approval:** Review and approve Gender-Based Violence (GBV) and Sexual Exploitation and Abuse (SEA) policies, Health and Safety policies, including the SEP. Approve alternative solutions where applicable.
2. **Environmental and Social Management Plan (ESMP):** Supervise the ESMP implementation. Propose appropriate training to TFS on the use of the ESMP.
3. **Compliance and Reporting:** Review contractors' reports and produce external and TFS compliance reports against commitments. Ensure compliance with relevant project standards, UNDP SES, statutory requirements, and permit and license conditions.
4. **Inspection and Monitoring:** Implement an inspection and monitoring program for plantation management requirements. Recommend or approve corrective actions when necessary.
5. **Grievance Management:** Oversee grievance management processes.
6. **Continual Improvement:** Identify opportunities to improve TFS staff and operations.

9.3.3 Contractors/Third-party service providers

1. **Mobilisation:** Contractor mobilises key mitigation items (toilets, waste bins, spill kits, erosion controls) before earthworks. Prepare plan (or adapt works to incorporate ESMP).
2. **Implementation of ESMP and Contractual Requirements:** Implement all ESMP mitigation measures on site, the Engagement Plan (SEP) and other contractual obligations. Identify possible campaigns and support related engagement as needed.
3. **Compliance with Requirements and Mitigation Measures:** Execute all requirements and mitigation measures outlined in the ESMP, SEP and other guiding documents, including the Gender-Based

Violence (GBV) policy and Health, Safety, and Environment (HSE) standards.

4. **Workforce Communication and Training:** Communicate the contents and requirements of the SEP and other TFS guiding documents to the contractor workforce. Provide training to ensure all personnel are aware of their responsibilities. Manage grievance log and respond to community issues.
5. **Compliance with Standards and Regulations:** Adhere to relevant project standards, international guidelines, statutory requirements, and permit and license conditions. Ensure availability of PPE, first aid kits, and firefighting equipment. Permits, manifests, training attendance sheets, laboratory certificates, GRM logs, and inspection checklists on site and in electronic form for the life of the project and archived for a minimum of 5 years after completion.
6. **Inspection and Monitoring:** Implement a self-inspection and monitoring program throughout the project implementation. Maintain daily EHS records and submit weekly EHS reports.
7. **Optional support** if required by TFS from a third-party: Provide independent oversight and audit of ESMP implementation. Conduct monthly inspections, issue Non-Compliance Reports (NCRs), and verify corrective actions. Support capacity building through training for Contractor staff. Consolidate and submit monthly monitoring reports to TFS.

9.3.4 Communities

1. **Stakeholder Engagement and Grievance Resolution:** Collaborate with TFS on stakeholder engagement and grievance-resolution processes, including the appointment of a responsible person for grievances.
2. **Early warning:** Provide notification, technical assistance for disaster preparedness and emergency response. Implement and maintain an action tracking system (especially for fires).
3. **Continual Improvement:** Identify and pursue opportunities to improve continuously. Participate in monitoring activities and community meetings.
4. **Collaborate** with TFS on forest protection initiatives

9.4 Reporting timelines

Reporting on the ESMP is dependent on the intervention and the type of mitigation measure to be considered:

- i. **Monthly:** Contractors and third-party service providers, as guided by their agreements, will ensure that environmental and social reporting aligns with their milestones. As most of the construction activity is to be completed in short timeframes (3-8months), reporting monthly to the NFR management is sufficient.
- **Quarterly:** The PMU consolidates reports from NFR teams (who receive them from contractors), including photographic evidence and incident summaries. The PMU conducts joint monitoring missions with the LGA and UNDP and prepares a progress and compliance audit report.
- **Annually:** Overall environmental and social performance report submitted to NEMC as part of statutory compliance. TFS will include a section on Environmental and Social performance when reporting to UNDP and GEF for the overall project. □

17

Table 81: Impact Mitigation and Monitoring Matrix

Aspect	Impact	Mitigation	Responsible	Timing	Cost	Performance indicator	Monitoring	Verification
Waste Generation (Solid & Inert Waste)	Mixed waste: cement bags, Focal timber offcuts, scrap metal, hazardous waste (paint, adhesives, oils).	Color-coded bins & bags; reuse/recycle inert materials; hazardous waste store with bunding; monthly waste audits.	Contractor, Waste Consultant, Person; DEMO, TFS	Throughout construction & demobilization	To be included in the specific ESMP	be 100% in segregation by site month 1; unauthorized dumping incident removed per quarter	waste Weekly by visual checklist: monthly volumes removed (kg/month)	Consultant review of waste manifests and receipts
Water Pollution (Surface & Groundwater)	Runoff, cement washings, spills, wastewater may degrade rivers, springs, wetlands.	30 m buffer; traps/sediment basins; no washing near water bodies; drip trays; spill kits; portable toilets & desludging; immediate spill response.	Contractor, Consultant, District Officer & Environmental	Before during earthworks, continuous construction	& To be included in the specific ESMP	be 0 untreated in washout events; turbidity checks; <1 quarterly baseline NTU >90% samples	Daily turbidity checks; +30 tests >90% samples	Consultant review of lab results & spill logs
Air Quality & Dust	Dust clearance, stockpiles, haul roads affects communities, vegetation,	Water-spray cover/dampen speed limit 20–30 km/h; PPE (N95 masks).	roads; Contractor, Safety Officer, Consultant (N95)	During all dry-season earthworks haulage	To be included in the specific ESMP	be <2 complaints in per month; 100% PPE compliance	Weekly inspections; 100% complaint log; spot complaint PM10/PM2.5 readings	Consultant spot-check reports & complaint log

Noise	Disturbance to households, wildlife, schools/clinics.	to Limit noisy works to 07:00–18:00; screenings; notices.	works to Contractor, maintain Safety Officer, acoustic Consultant	Throughout construction	To be included the specific ESMP	be <1 noise in complaint/site noise local/WHO limits	noise Monthly within readings receptors; complaint register	Consultant decibel logs at & complaint records
Soil Erosion & Slope Stability	Clearing stockpiling increase erosion, sedimentation risk.	& Minimize phased clearing; fences/geotextiles/dams; within 30 days; spoil areas.	clearance; Contractor, silt Consultant, (species guidance) revegetation stable	Prior & during earthworks; restore during demobilization	To be included in the specific ESMP	No new gullies; >85% vegetative cover after 12 months	Monthly photos of erosion-prone zones; quarterly vegetative cover check	Consultant of site log & inspection
Sanitation, Hygiene & Public Health	Poor & hygiene camp increases risk of diarrhoea, STI/HIV, respiratory infections.	Adequate toilets & washing; desludging; orientation; COVID-19 plan (if relevant).	regular hand hygiene; District Health, HIV Consultant	Mobilization to demobilization	To be included the specific ESMP	100% in trained within 1 month; 0 disease outbreaks	Weekly sanitation checklist; quarterly health statistics	Consultant & District Health inspection
Fire Risk & Wildfire Prevention	& Hot cigarettes trigger wildfires dry season.	works, 10–20 m open firefighting & drills; permit system.	firebreaks; no burning; TFS, equipment Brigade hot-work	Continuous; Fire heightened dry months	To be included the specific ESMP	0 uncontrolled wildfires; quarterly drills	Fire equipment logs; incident reports	Consultant logs & fire authority reports
Occupational Health & Safety (OHS)	Injury & objects, accidents, ergonomic hazards.	falling Site-specific PPE; barricades; talks; first aid training; management.	OHS plan; Contractor, & Safety Officer, Consultant	Continuous during construction	To be included the specific ESMP	LTIFR <1.0/200,000 hrs; 100% induction within 1 week	Daily checklist; monthly stats	OHS Consultant & OHS audit reports
Communicable Diseases, HIV/AIDS & Social Risks	Influx & increases STI/HIV, GBV risks.	of HIV/STI condom code of community plan.	induction; Contractor, worker District of conduct; Health, engagement Community Liaison, Consultant	From mobilization, continuous	To be included the specific ESMP	100% in sensitized; the site incidents resolved 48 hrs	workers GBV registers; condom logs; incident records	District Health & Consultant records
Community Grievances & Social Conflict	Disputes & jobs, land cause unrest.	over Clear GRM with timelines; recruitment; meetings; grievance reporting.	Contractor, CLO, Consultant, TFS	From inception, continuous	To be included the specific ESMP	100% in acknowledged within 5 days; >80% resolved in 30 days	grievances register 5 days; monthly summary	Consultant & review & case follow-ups
Biodiversity Disturbance & Poaching	Habitat & disturbance, night lighting, poaching risk.	No-go zones; minimize footprint; reduce work; ranger replanting 2:1 native species.	Contractor, TFS, Consultant, Community Rangers	Design avoidance continuous during construction	To be included the specific ESMP	No rise in poaching; seedling survival after 12 months	Ranger >80% patrol camera wildlife surveys	TFS logs, unit & Consultant reports
Traffic, Roads & Safety	Access & dust, traffic accidents.	Road damage, Traffic Plan; signage & pre/post-condition survey.	Management Contractor, District & Banksmen; Roads, Consultant	Before mobilization & during haulage	To be included the specific ESMP	<2 in incidents per quarter; repairs completed 30 days	traffic Incident per register; road haulage logs; condition photos	Consultant review of logs & photos
Economic displacement	Loss or limited benefits from livelihood activities.	or limited Cocreate with communities and establish JMAs, VLFs	alternatives TFS, and District councils	Before mobilization throughout implementation	Standalone agreements	Separate monitoring effectiveness	Agreements for performance	Number of incidences in NFRs, number of concerns in GRM and forest health, Community economic indicators
Cumulative Indirect Impacts	& Regional impacts from multiple labor influx, tourism.	Stagger works from sites; quarterly meetings; monitoring protocol.	works across TFS, regional Consultant, District Councils	Planning program delivery	& To be included the specific ESMP	Quarterly in meetings site action adaptive management implemented	Regional indicators (patrols, tourist numbers, illegal activity)	TFS consolidated reports

10 Training and Capacity Building for the ESMP

TFS will conduct a Training Needs Assessment (TNA) and develop a training plan to ensure the effectiveness of the project implementation in the NFRs and the respective LGAs. The TNA will include all those involved in, and/or responsible for, implementing the project, particularly in developing and implementing the ESMP.

The TNA will distinguish the different skills development/training needs in terms of:

- The need for an awareness-raising campaign, particularly for influential representatives and community leaders who need to appreciate the significance or relevance of climate change, fire risk, and environmental and social issues.
- Sensitisation for those who need to be familiar enough with the issues that they can make informed and specific requests for technical assistance (e.g. TFS designing ToR for the conduct of environmental assessments); and
- Technical training for subproject planning and implementation teams at contractor and LGA levels who will need to analyse potentially adverse environmental and social impacts, prescribe mitigation approaches and measures, and prepare and supervise the implementation of the ESMP.
- Knowledge of Environmental and Social issues is needed in project planning.
- **Disclosure of the project's information to the community.** In instances where there is a lack of involvement or insufficient information about the project during planning, the community may be deprived of the opportunity to participate in implementing, supervising and monitoring the project and may cause the community to reject/oppose the project entirely. The PMU is supposed to make the disclosure. This should align with the SEP.

11 Decommissioning Plan

The nature of BUREFOBI is such that it is a long-term intervention with regular maintenance as necessary. Closure is not envisaged, except for minor replacements during routine maintenance schedules. However, during maintenance or if there is a need to relocate any of the facilities, the following will be considered:

- i. Planning & Notification:** TFS will develop a Decommissioning Management Plan (DMP) and notify local authorities and communities at least 3 months in advance.
- ii. Safe Dismantling:** Carefully dismantle structures to avoid uncontrolled demolition that could cause accidents or pollution.
- iii. Waste Management:** Segregate, recycle, and safely dispose of demolition debris, scrap metals, and hazardous materials.
- iv. Soil Remediation:** Test soil for contamination (oil, heavy metals) and rehabilitate if required.
- v. Site Rehabilitation:** Re-vegetate cleared areas using native species and create firebreaks to prevent post-project degradation.
- vi. Social Transition:** Consult with communities on the adaptive reuse of remaining infrastructure (e.g., converting ranger posts into eco-education centres).
- vii. Final Audit:** Conduct a closure audit and submit a Decommissioning Completion Report to TFS.
- viii. Post-Closure Monitoring:** Monitor the site for at least 2 years to ensure the establishment of vegetation and the absence of residual contamination.
- ix. OHS:** Provide PPE suitable for demolition work (helmets, gloves, and steel-toed boots). Train workers on handling asbestos, sharp debris, and hazardous waste. Maintain first aid and firefighting equipment until complete demobilisation.

12 Budget and Resource Allocation

The cost of implementing the ESMP during construction and operation is not included but is presumed to have been included in the BUREFOBI funds to TFS.

From the overall BUREFOBI budget, TFS will allocate resources for components such as capacity building, delivery of ESMP implementation, training to LGAs Designated Staff and TFS staff on E&S Management, preparation of environmental assessments and Implementation of ESMPs, SEP, GRM, GAP and the mitigation measures defined in the development of the ESIA.

The draft estimates assume no budget has been allocated specifically for the ESMP and that it will need to be defined in the BUREFOBI implementation plan. The costs presented here are estimated based on previous experience in similar projects.

Table 111 Summary of Budget Estimates for ESMP Implementation

ACTIVITY	PARTICULARS	USD ('000)
TRAINING	Training Needs Assessment – for TFS 75 Headquarters and NFRs	
	Project Management Unit – building capacity for 50 E&S management and monitoring	
	Level three and four implementation partners 50 (VPO-DoE – LGAs and Civil Society)	
ESMP	ESMP implementation per NFR over 2 years @ 15	270
ANNUAL MONITORING AND AUDITS	Per NFR over 2 years @ 10	180
TOTAL		625



17

13 Conclusions and Recommendations

The findings of the scoped ESIA suggest that the BUREFOBI project will have minimal impacts on environmental concerns that would prohibit the project. The project is likely to have more positive impacts, and the negative consequences are manageable with standard mitigation measures.

The project's direct and indirect positive impacts include employment, business growth, and economic development, including increased tourism investment, diversification of livelihoods, and improved socio-economic conditions for communities near the NFRs.

Safety matters, especially during construction, will be mitigated through adherence to best practice standards and use of PPEs. The other relatively minor impacts that can be minimised and/or avoided include dust and noise pollution during construction, waste generation during construction and operation, disruption of ecosystems, pressure on natural resources and soil erosion.

The project will be fruitful in terms of the environment and socio-cultural aspects if the ESMP is followed and implemented. To realise this, coordinated efforts are needed at all levels: the PMU, local government authorities, the community, and contractors.

TFS is responsible for ensuring the overall implementation of the ESMP.

14 References

- Updated Social & Environmental Screening Procedures for BUREFOBI Project. March 2025
- URT. (2004) Environmental Management Act.
- URT. (2018) the Environmental Management (Environmental Impact Assessment and Audit) Regulations (2004) (R.E 2018).
- URT. (2009) Water Resources Management Act. United Republic of Tanzania,
- APHA. (2001). Standard Methods for the examination of Water and Waste Waters. Washington DC, USA.
- Mkuranga, Chalinze, Kilwa, Tunduru, Babati, and Mbulu, and Hnang District Socio-Economic Profiles
- URT (2002), National Forest Programme 2001- 2010.
- URT (2015), Investment Policy for the Tanzania Forest Services (TFS) Agency.
- URT (2015), National Forest Resources Monitoring and Assessment of Tanzania, Pp 105.
- TBS (2019). TZS – 860:2019: Limits for Municipal and Industrial Waste Waters
- URT (2020), Guidelines for Preparation of Management Plan for National, Local Government Authority and Private Natural Forest Reserves.
- URT (2020), Tanzania Forest Services (TFS) Agency, Strategic Plan III (2021/22 – 2025/26).

□

17

15 APPENDICES

15.1 E&S Specifications for third parties (service providers/ contractors)

All third parties (service providers and contractors, as relevant) shall implement their activities in accordance with an agreement that complies with the requirements of the UNDP SES, the applicable laws of the United Republic of Tanzania (URT), and any Social and Environmental risk management tools that Tanzania Forestry Services may have developed.

All third parties engaged in the project operate in a manner consistent with the environmental and social standards requirements, including the specific requirements set out in the ESMF and any associated plans that may be developed.

To achieve this, third parties to the project shall:

- a) Adopt the BUREFOBI ESMF and, where necessary, develop site-specific ESMPs as required.
- b) Ensure that site-specific ESMPs get approval from TFS before commencing the interventions.
- c) Implement and review site-specific ESMPs as required by the ESMF, specifically the Labor Management Procedures (LMP), including OHS plans, labour recruitment plans, code of conduct (CoCs) for employees, waste management plans, emergency plans, protection of biodiversity, land clearing, erosion control and pests and diseases control, traffic management, noise and dust control, labour influx, communicable diseases, and others.
- d) Submit a recruitment plan containing the number of staff required and location, intended working conditions, and Job specifications in terms of qualification and experience to PMU/IOM for review and approval.
- e) Publish recruitment in the appropriate media (through LGAs, on public boards and social media platforms, direct invitation for contracted workers) to ensure all potential candidates have access to the information, including women and persons with disabilities.
- f) Employ qualified E&S personnel to oversee E&S performance and ensure resources are commensurate with the magnitude and timing of work and potential E&S risks.
- g) Ensure all workers have signed a Code of Conduct.
- h) Prepare E&S training programs for workers and communities if necessary.
- i) Ensure the employees are aware of E&S commitments and their responsibilities, including key Job Specifications, terms and Conditions of Employment, special Codes of Conduct, disciplinary procedures, workers' Grievance Redress Mechanism, freedom to join and participate fully in workers association activities, key E&S aspects of the project and other E&S instruments, and emergency preparedness before work commences.
- j) Adopt and implement the national and international best practices on Safety, Health, Environment and Social risk management.
- k) Ensure that safety, Health, Environmental, and social risk information is provided to employees, communities, and all relevant stakeholders.
- l) Focus on compliance with all applicable safety, health, environmental and Social Multilateral Agreements, policies, national laws, regulations, and Codes of practice relevant to the activities being implemented.

TFS will require all third parties to ensure that all workers have signed a Code of Conduct.

In reporting to TFS on E&S, the third parties will include details of the following parameters at a minimum.

Item	Parameter	Description
------	-----------	-------------

1	Safety	hours worked, recordable incidents and corresponding Root Cause Analysis (lost time incidents, medical treatment cases), first aid cases, high potential near misses, and remedial and preventive activities required (for example, revised job safety analysis, new or different equipment, skills training, and so forth).
2	Environmental incidents and misses	environmental incidents and high potential near misses, how they have been addressed, near what is outstanding, and lessons learned.
3	Major works	those undertaken and completed, progress against the project schedule, and key work fronts (work areas).
4	E&S staffing	new hires and departures and listing of current staff and job descriptions (positions).
5	E&S requirements	noncompliance incidents with permits and national law (legal noncompliance), project commitments, or other E&S requirements
6	E&S inspections and audits	by a third party, including authorities—to include the date, inspector or auditor name, sites visited, and records reviewed, major findings, and actions taken.
7	Workers	number of workers, indication of origin (expatriate, local, non-local nationals), gender, and skill level (unskilled, skilled, supervisory, professional, management).
8	Training on E&S issues	including dates, number of trainees, and topics.
9	Footprint management	details of any work outside boundaries or major off-site impacts caused by ongoing construction—to include date, location, impacts, and actions taken.
10	External stakeholder engagement	highlights, including formal and informal meetings, and information disclosure and dissemination, including a breakdown of women and men consulted and themes from various stakeholder groups, including vulnerable groups (e.g., disabled, elderly, children, etc.).
11	Details of any security risks	details of risks the contractor may be exposed to while performing work—the threats may come from third parties external to the project or from inappropriate conduct from security forces employed either by the client or public security forces.
12	Worker grievances	details including occurrence date, grievance, and date submitted; actions taken and dates; resolution (if any) and date; and follow-up yet to be taken — grievances listed should include those received since the preceding report and those that were unresolved at the time of that report. Grievance data should be gender disaggregated. Sensitivity may be needed to address the GBV issues that have been raised.
13	External stakeholder grievances	grievance and date submitted, action(s) taken and date(s), resolution (if any) and date, and follow-up yet to be taken — grievances listed should include those received since the preceding report and those that were unresolved at the time of that report. Grievance data should be gender disaggregated. Sensitivity may be needed to address the GBV issues that have been raised.
14	Major E&S changes	to E&S management, or E&S practices (most often done by the Project Management Unit). An example would be a diversion in route requiring extraction of natural area to allow passage to an area that was not previously included in the third party's approved activity. This would require TFS PMU to assess the diversion and recommend the appropriate mitigation or level of E&S assessment or management to be taken (e.g. in a sensitive area it may require an EIA).
15	Deficiency and performance management	actions taken in response to previous notices of deficiency or observations regarding E&S performance and/or plans for actions to be taken, should continue to be reported until the client determines the issue is resolved satisfactorily.

Impact/Parameter	Monitoring Method	Frequency	Responsible Party	Performance Indicator / Standard
Waste Generation	Visual inspection, weighbridge records, waste log	Weekly	Contractor EHS Officer	100% of waste segregated & disposed via licensed collector
Water Quality	Sampling for pH, turbidity, BOD, COD	Quarterly	Environmental Officer	Within WHO drinking water and national effluent standards
Dust Levels (Air Quality)	Visual observation, handheld particulate meter	Weekly	Contractor Consultant	+ PM10 < 0.15 mg/m ³ at sensitive receptors
Noise Levels	Decibel meter readings at key receptors	Monthly	Safety Officer	< 70 dB(A) day-time limit at nearest settlement
Soil Erosion	Site inspection of drainage, gullies	Bi-weekly	Site Engineer + EHS Officer	No uncontrolled erosion or sediment discharge
Biodiversity Disturbance	Wildlife sightings log, camera traps, patrol reports	Quarterly	TFS Rangers + Consultant	+ No poaching incidents, >80% survival of planted trees
Occupational Health & Safety	PPE spot checks, incident reporting, toolbox talks	Daily	Contractor Safety Officer	0 fatalities, < 2 Lost Time Injuries per 200,000 man-hours
HIV/AIDS & STDs Prevention	Attendance at awareness sessions, condom stock check	Quarterly	District Health Officer + Contractor	>80% workforce coverage in awareness programs
Community Grievances	Review of grievance log, interviews	Continuous	Community Liaison Officer	100% grievances acknowledged within 7 days
Fire Preparedness	Fire drill and equipment inspection	Bi-annually	Contractor + TFS	100% fire extinguishers functional, staff trained

15.2 Appendix 2: Monitoring Checklists

Monthly Site Checklist

S/n	Observations/Audit	(Yes/No)	Comments
1	Waste bins available and in use?		
2	PPE compliance?		
3	Dust control measures functioning?		
4	Sanitation facilities clean and operational?		
5	Fire extinguishers present and charged?		
6	Community complaints logged & addressed?		
7	Water quality sampling conducted?		
8	Noise monitoring done?		
9	Training/toolbox talks held?		
10	Equipment maintenance logs updated?		

Quarterly Review

S/n	Observations/Audit	Comments
1	Review of GRM records	
2	Review of accident/incident reports	
3	Assessment of tree planting survival rates	
4	Review of compliance with national standards	

15.3 ESMP Implementation Schedule

The ESMP implementation schedule aligns with the **6-month construction period** and covers mobilisation, peak works, and demobilisation phases. A Gantt chart should be appended to the work plan.

Table 101: ESMP implementation schedule

Phase / Activity	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6
Mobilization & Site Induction	●					
Site Clearance & Vegetation Control	●	●				
Erosion & Sediment Control Measures	●	●	●	●	●	●
Waste Management Setup	●	●	●	●	●	●
Worker Camp Setup & Sanitation	●	●				
Dust & Noise Monitoring	●	●	●	●	●	●
Community Engagement / GRM	●	●	●	●	●	●
HIV/AIDS Awareness Campaigns		●		●		●
Fire Preparedness Training	●			●		
Biodiversity Replanting / Landscaping				●	●	●
Final Site Rehabilitation & Handover					●	●

Legend: ● = Active Period

15.4 Appendix 2: OHS Incident Register & Lost Time Injury (LTI) Log

Date	Type of Incident	Description	Injury Severity	LTI (Days)	Corrective Action
05/07/2025	Slip/Fall	Worker slipped near wash area	Minor	0	Installed anti-slip mats

15.5 Appendix 3: Community Grievance Log Format

Date	Name	Contact	Grievance	Action Taken	Status	Closure Date
10/07/2025	Juma	07XXXXXXX	Truck Dust affecting crops	Water spraying increased	Closed	15/07/2025
5		X				

15.6 Appendix 4: Community Consultation Record Template

Date	Location	Participants	Issues Raised	Agreed Actions	Responsible Party	Follow-up Date
15/07/2025	Gitting Village	35 (20M/15F)	Access road concerns	Culvert to be constructed	Contractor	Aug 2025

--	--	--	--	--	--	--

15.7 Appendix 5: List of SOME MANDATORY PPEs AND SAFETY EQUIPMENTS

S/n	Component	Recommended Sample
1	Safety Shoes for contractor workers, Environmental Consultant and TFS Manager/ Supervisor	
2	Safety Gumboot's for Concrete works and others	
3	Safety belts	
4	Leather Gloves	
5	Ear Noise Protectors	
6	Dust Mask for all workers on dust condition	
7	Safety Goggles	
8	Fire Extinguishers	
9	Hard Hat	
10	Emergency Assembly Point	

11 Reflector Vest



15.8 Appendix 6: Decommissioning Checklist

- ☐ Notification issued to stakeholders
- ☐ Demolition Plan approved
- ☐ PPE and equipment available
- ☐ Waste segregation conducted
- ☐ Hazardous waste is disposed at a licensed facility
- ☐ Site restored (topsoil replaced, trees planted)
- ☐ Final inspection completed
- ☐ Completion Report submitted

15.9 Appendix 7: Stakeholder Concerns

Consultations conducted for BUREFOBI by MJUMUITA

Mtandao wa Jamii wa Usimamizi wa Misitu Tanzania (MJUMITA) conducted awareness-raising meetings from November 3rd to 6th, 2024. MJUMUITA and TFS staff presented the Participatory Forest Management (PFM) approach and the legal process of establishing VLFRs for sustainable forest management. The meetings involved the District Commissioner and District Administrative Secretaries of the 11 NFR districts, the District Executive Directors (DED), District Officials including the District Forest Officer (DFO), District Authorized Land Officer (DALO) the Environmental Management Officer (EMO), District Finance and Administrative Officer (DFAO) Chairperson of the District Council, acting head of department of Natural Resources and Environment Officer (DNREO), District Community Development Officer (DCDO), and District Legal Service Officer (DLSO), Ward Executive Officers (WEOs), Ward Councilors, Village Chairpersons, Village Executive Officers, Village Council Members, and Community Members. These meetings built local capacity and engaged community members, local government officials, and other stakeholders in establishing and managing VLFRs. 465 (M 330, F 135) participated in the meetings.

Hassama Nature Forest Reserves – Mbulu District

Date: 19th August 2025

Location: Hyseng Village, Ayedaampa Ward

Facilities: Ranger post at Dongobesh

Table 151 Officials' Contributions-Nou & Hassama Nature Forest Reserves

Name	Designation/Office	Topic	Responses/Concerns
Mr. Daniel Richard	District Environmental Management Officer	Biodiversity conservation	Noted that having an administration office within the forest will make forest management activities much easier. Previously, officials had to travel long distances to supervise operations. With the office nearby, response to illegal activities or emergencies such as forest fires will be faster and more effective.
Mr. Victor Maro	District Forestry Officer	Forest management services	Emphasised that the project will improve conservation of forest biodiversity. He cited that Nou is home to unique tree species and water springs that feed Hyseng and other surrounding areas. With closer supervision, illegal activities such as grazing and uncontrolled logging will be minimized, ensuring biodiversity is preserved for future generations.
Mrs. Sarah Mosha	District Community Development Officer	Community engagement youth opportunities	Reported that there are already 13 youth groups in & Hyseng engaged in beekeeping inside Nou Forest. With improved supervision, these groups can expand production and link their honey products to wider markets. She stressed the importance of integrating forest conservation with youth livelihood opportunities.
Mr. Benjamin Kivuyo	TFS Officer – Mbulu	Tourism potential	Pointed out that the office will serve as a hub for tourism promotion. He said increased tourism will not only generate government revenue but also support small businesses for villagers. He encouraged locals to prepare handicrafts and cultural products for tourists.
Ms. Getruda Marray	TFS Officer – Mbulu	Cultural and social safeguards	Warned that tourism can sometimes bring negative cultural influences. She recommended that local by-laws be established to protect community morals, so that exposure to foreign visitors does not erode traditions.

Table 152 Community Contributions-Nou & Hassama Forest Reserves

Name	Village (Hyseng – near Nou Forest)	Comments/Concerns
Ms. Maria Kilewo	Ward Executive Officer	Highlighted that Nou Forest has natural springs which supply water to Hyseng and surrounding areas. She said, “Without Nou, our taps would run dry.” She emphasized the importance of forest protection for sustaining water sources.
Mr. Daudi Lekule	Village Chairman Hyseng	– Noted that villagers collect reeds and grasses from Nou Forest to make mats for sitting and selling in local markets. This provides women with reliable income. He supported strict management to ensure these resources are not depleted.
Mr. Petro Gaspar Qwanko	Chairman Environmental Committee	– Pointed out that several tree species in Nou provide traditional medicines. He gave the example of “msufi” tree bark used to treat stomach illnesses. He urged authorities to strengthen conservation, so medicinal plants remain available.
Ms. Elinipenda Sarwatt	Community Member	Reported that some villager’s practice beekeeping in Nou Forest, producing honey which they sell for income. She said her husband has 12 hives, and their family pays school fees through honey sales. Stronger management will protect this livelihood.
Mr. Jackson Digha	Community Member	Expressed concern that despite having a village environmental committee, some residents still graze livestock in the forest and cut trees for charcoal. He said last year, two herders were found grazing over 50 cattle illegally inside Nou. He welcomed the office as an added force to stop such activities.
Mr. Paulo Naftali	Community Member	Mentioned that unlicensed sawing of timber has been common. Villagers cut planks without permits, leading to waste of trees. He said: “Our forest is being stolen at night with power saws.” He believes closer supervision will reduce these cases.
Ms. Neema Qwarayda	Community Member	Reported that poaching has also been a threat. She recalled seeing snares used to trap antelopes and hearing rumors of elephant hunts. She said the new office will make it harder for poachers to operate.
Mr. George Mollel	Community Member	Spoke about recurrent forest fires. He said in 2022, a fire destroyed several hectares of Nou, killing wildlife and burning bee hives. Villagers tried to extinguish the fire with tree branches, but without equipment it was difficult. He said having professionals stationed nearby will prevent and control fires more effectively.
Mrs. Rehema Daudi	Community Member	Emphasized that tourism will increase national revenue and create opportunities for small businesses. She said she plans to sell local snacks and bottled water when tourists begin arriving.
Mr. Hamisi Qwaray	Community Member	Shared that five villagers are already working as casual labourers at the construction site, carrying sand and mixing cement. He said this income has helped them buy food during the dry season when harvests were poor.
Ms. Fatuma Sarwat	Community Member	Expressed fear that stricter rules may restrict villagers from collecting building poles and grasses, forcing them to buy costly bricks. She urged for alternatives to be made available.
Mr. Yohana Laizer	Community Member	Said overall, the project is good for both the community and the environment. He added, “For the first time, our village feels that Nou forest is being valued as wealth, not just a land for destruction.”

Uzigua Nature Forest Reserve – Chalenze DistrictDate: 18th August 2025

Location: Kwa Mduma, Kwa Msanja, Kwa Luhombo

Facilities: Main gate, Administration building, Washrooms, Parking area

Table 153 Officials’ Contributions Uzigua Nature Forest Reserves

Name	Designation/Office	Topic	Responses/Concerns
Mr. Mpangala	TFS Project Supervisor Chalenze	– Project description & forest management	Explained that the project aims to solve challenges of uncontrolled encroachment into the reserve, including illegal grazing where herders previously brought their livestock to feed inside the forest. He emphasized that once the new facilities are completed, supervision will be closer to the community, and residents will better understand the importance of following forest conservation rules. He gave an example that in past years, cattle from Kwa Mduma village were often found grazing inside Uzigua, destroying saplings. With the new ranger post, this practice will be strictly controlled.
Mr. Mangale	Herier District Officer	Environmental impacts	Reported noticing that a few trees had been cut down at the construction sites. He clarified that the environmental damage was not yet severe but acknowledged that repeated tree cutting for firewood and charcoal production by villagers has been a long-standing issue. He noted that women from Kwa Luhombo often enter the reserve to collect firewood, and young men cut trees for charcoal. With closer forest management, these cases are expected to reduce significantly.
Mr. Sembwela	Rashid District Development Officer	Community Socio-economic opportunities	Stated that local communities have already started to benefit from temporary employment. For instance, some youth from Kwa Msanja are working as casual laborers carrying construction materials for the main

gate. He added that once the administration office is operational, TFS staff will be permanently present at the site and will be able to explore more tourist attractions inside Uzigua. This will create opportunities for increased tourism, national revenue, and local petty businesses such as food vending and handicrafts. He encouraged villagers to prepare for cultural exhibitions to showcase traditional dances and crafts to tourists.

Mr. Antony District Forestry Officer Francis Biodiversity protection

Pointed out that the project will help reduce illegal logging, charcoal burning, and poaching activities that have long caused biodiversity loss in Uzigua. He gave an example of hunters who previously targeted bushbucks and even elephants in the forest. With rangers stationed nearby, such practices will be curtailed, ensuring the reserve continues to provide ecosystem services such as rainfall regulation, medicinal plants, and tourism benefits.

Table 154: Community Contributions-Uzigua Nature Forest Reserves

Name	Village (Nearby Uzigua)	Comments/Concerns
Mr. Saidi Rashidi	Kwa Mduma	Warned that more tourists will mean more waste in the area.
Mrs. Zainabu Ally	Kwa Msanja	Said better forest protection will prevent poachers from killing elephants and other animals. She recalled a case where two elephants were found dead in 2023 after being speared by poachers. She is hopeful this will end.
Mr. Paulo Mtui	Kwa Luhombo	Expressed concern about cultural impacts. He said if more tourists arrive, they may bring foreign lifestyles that could erode local traditions. He feared young people could adopt habits such as alcohol abuse or indecent dressing.
Mr. John Moses	Kwa Msanja	Shared his personal experience of already benefitting from the project. He works as a casual labourer assisting masons building the main gate, which helps him feed his family.
Ms. Amina Kwa Mduma Mohammed		Saw the project as an opportunity to learn foreign languages and work as a tour guide. She noted that youth in her village could generate income by guiding visitors through the forest.
Mr. Hassan Kibwana	Kwa Luhombo	Mentioned that so far, the project has not caused severe environmental impacts, though a few trees were cut for construction.
Mrs. Rehema Omari	Kwa Mduma	Pointed out that many villagers depend on poles and timber from the forest to build traditional houses. She worried that stricter forest protection will cut off this supply, forcing families to buy expensive bricks for construction.
Mr. George Mollel	Kwa Msanja	Reported frequent invasions by elephants into farmlands. He said last year, his maize and cassava were destroyed within two days by elephants. He supported the recommendation to establish beehive fencing, which would not only keep elephants away but also produce honey for sale.
Mr. Hamisi Ally	Kwa Luhombo	Raised concern about losing his main livelihood of selling charcoal. He admitted that although it is illegal, charcoal has been his family's only source of income. With stricter supervision, he fears his business will collapse and his family will face hunger.
Mrs. Fatuma Kwa Mduma Suleiman		Reported that villagers sometimes enter the forest to fetch water or use small streams for domestic purposes. She noted that illegal clearing of vegetation along water sources has previously damaged these springs. She is hopeful the project will solve this problem by enforcing protection.
Mr. Joseph Mushi	Kwa Msanja	Expressed strong support for the project, saying it will improve their environment. He said it is uplifting to see Uzigua being protected so that future generations can inherit a healthy forest.

Pindiuro Forest Reserve – Kilwa, Lindi District

Date: 13th August 2025

Location: Pindiuro

Facilities: Construction of modern gate, Tourism management office, toilet and parking area

Table 155: Officials' Contributions-Pindiuro Nature Forest Reserves

Name	Designation/Office	Topic	Responses/Concerns
Mr. Paul Hilary	District Environmental Officer	Environmental management	Reported that so far the project has caused only minimal environmental destruction, as the contractor has taken precautionary measures. Suggested compensatory tree planting for those cut during construction. Recommended frequent village meetings to raise awareness on conservation before and after project implementation.
Ms. Achsah District Forest Officer Ezekiel		Institutional collaboration	Advised that both central and local governments must be closely involved in conservation management to reduce environmental risks associated with project implementation.
Mr. Adam Mtila	District Development Officer	Community Social inclusion	Emphasized the importance of community participation throughout all stages of the project – from planning to completion. Pointed out the need for health education in nearby villages (e.g., Makangaga) to address risks associated with construction and increased human activity around the forest.

Table 156: Community Contributions-Pindiuro Nature Forest Reserves

Name	Village & Role	Comments/Concerns
Mr. Mussa Rashid	Committee Member Makangaga	– Reported that youth and women from Makangaga had not yet been engaged as casual workers in the project. Urged for better participation. Requested environmental and health education sessions for villagers.

Mr. Yassin Mohamed Nakiu	Committee Member	– Said communities have not yet benefited from the project. Recommended improved strategies to strengthen relations between TFS and local people. Stressed awareness education to build a sense of ownership.
Mr. Selemeni Mnonya Makangaga	Village Chairman	– Expressed that some incentives have supported small village projects. Said the project will enhance tourism potential in Pindirol, attracting more visitors.
Mr. Bashiru Omar Nakiu	Village Chairman	– Reported boundary conflicts between Nakiu village and TFS. Also noted that involvement of Nakiu residents in the project remains very low.
Mr. Issa Mohamed Pindirol	Village Chairman	– Complained about lack of engagement of Pindirol village leaders in project planning, leading to poor awareness of what is happening in the forest.
Mr. Said Bin Saleh	Elder – Nakiu	Criticized poor communication between project administrators and villagers. Recommended stronger collaboration with the local community during project implementation.
Ms. Shufaa Fadhili	Village Officer – Nakiu	Executive Pointed out that education on conservation and project benefits is inadequate. Suggested that awareness programs be held at least twice each year to strengthen understanding.

Mwambesi Nature Forest Reserves

Date: 14th August 2025

Location: Tunduru

Facilities: Construction of modern gate, Tourism management office, toilet and parking area

Table 157: Officials' Contributions Mwambesi Nature Forest Reserves

Source	Topic	Responses/Concerns
District Officer, Forestry Officer	Environmental Project management and impacts	Reported that the project has shown positive environmental and social outcomes. Community involvement is evident through provision of manual labor during construction. Some villagers have even donated land for road access to the site. Officials noted good coordination in information flow – communities are updated at every stage of construction.
Mr. Nelson Sallalo John	District Community Development Officer	Confirmed that no harassment or major complaints have been reported in relation to the project, showing good relations so far.

Table 158: Community Contributions-Mwambesi Nature Forest Reserves

Name	Village & Role	Comments/Concerns
Mr. Yunus Ally	Village Executive Officer Angalia	– Reported that the reserve faces pressure from large numbers of pastoralists, which threatens conservation. Said Angalia villagers lack sufficient information on the project's operations.
Mr. Salum Hassan	Village Chairman – Angalia	Noted that the level of involvement of Angalia residents is very low compared to other villages.
Mr. Ally Alasi Seleman	Committee Member – Nyerere	Reported effective involvement of Nyerere villagers, who have participated more actively in project activities.
Ms. Khadija Hassan	Committee Member – Angalia	Pointed out that there is no awareness program in their village about the importance of the project.
Mr. Mohamed Yahaya	Committee Member – Angalia	Said there is need to strengthen community participation, especially in decision-making.
Ms. Mwaide Ally	Committee Member – Nasia	Reported that participation from Nasia is low, though some environmental education has been provided, particularly on fire prevention and control.
Ms. Zawadi Zawadi	Committee Member – Nasia	Stated that small opportunities (casual jobs, minor contracts) are available for locals. Urged more integration of communities in the project.

Nou Nature Forest Reserve – Babati Rural District

Date: 22nd August 2025

Location: Dareda kati village, Dareda Ward, Babati rural District

Facilities: Construction of main Ranger posts

Table 159: Officials' Contributions-Nou Nature Forest Reserve- Babati District

Name	Designation/Office	Topic	Responses/Concerns
Mr. January Bikuba	District Community Development Officer (DCDO)	Community engagement & benefits	Emphasized the need for community education to reduce conflicts between Rangers and residents. Suggested awareness programs on what activities are allowed or prohibited in Nou. Recommended that the project deliver tangible benefits such as road improvements (linking Meru and Nou) and jobs for locals.
Mr. Raphael Kirway	TFS Conservator – Babati	Community attitudes & project benefits	Reported that some local youth had shown hostility, forcing contractors to hire laborers from Arusha. Outlined benefits such as increased tourism, regulation of visitors through the gate, job creation, and improved conservation. Stressed need for strong supervision, citing past failures like Farm Africa. Noted that two trees were cut down at the Ranger post site.
Mr. Alex Nkwama	Environmental Officer	Environmental management	Recommended awareness programs for both villagers and tourists, plus development of a waste management system. Advocated for by-laws against pollution. Emphasized that the project supports long-term environmental conservation.
Ms. Angela Mlawa	District Forestry Officer (DFO)	Forest protection & resource management	Said the project will strengthen forest protection, safeguard water sources in Nou, and reduce illegal farming, timber harvesting, and charcoal burning.

Table 1510: Community Contributions- Dareda Kati Village (Babati Rural)

Name	Village	Comments/Concerns
Mr. Martin Lulu	Dareda Kati	Worried about waste from construction (cement bags, plastic, metal scraps). Requested proper waste disposal to prevent environmental pollution.
Mr. Joseph Mayyo	Dareda Kati	Suggested an eco-friendly perimeter fence around the site to minimize environmental disturbance.
Mr. Boay Nada	Dareda Kati	Called for promotion of alternative energy sources (biogas, solar, improved stoves) to reduce dependency on wood fuel and charcoal.
Ms. Nada Dhaye	Dareda Kati	Asked for measures to protect wildlife and suggested compensation if animals or farms are negatively affected.
Mr. Aloice Bura	Dareda Kati	Emphasized that local youth should be given first priority in both skilled and unskilled jobs created by the project.
Mr. Qwansaw	Barnabas Village Chairman – Dareda Kati	Called for transparency in employment and environmental monitoring, to avoid corruption and favoritism.
Mr. Damiano Petro	Dareda Kati	Stressed the importance of community involvement in every project stage from planning to implementation.
Mr. Emmanuel Damiano	Dareda Kati	Requested training and capacity building programs on conservation and environmental management for villagers.
Mr. Simon Emmanuel	Dareda Kati	Recommended a fire management plan to prevent forest fires, noting that wildfires have destroyed farms and forest patches in the past.
Ms. Deborah Martin	Dareda Kati	Urged continuous collaboration between all stakeholders for long-term sustainability of forest resources.

Mt. Hanang Nature Forest ReserveDate: 23rd August 2025

Location: Gitting village, Gittind Ward, Hanang District

Facilities: Construction of main Ranger post – Gitting and Construction of Tourism Management office - Katesh

Table 1511: Officials' Contributions-Mt. Hanang Forest Reserve- Hanang District

Name	Designation/Office	Topic	Responses/Concerns
Ms. Gerda Hofi	District Forest Officer	Biodiversity impacts	Expressed concern about tree cutting and bush clearance disturbing biodiversity. Recommended minimal vegetation removal and compensatory tree planting.
Mr. Shisha	Bernard Environmental Officer	Environmental safeguards	Called for strong safeguards: proper waste management, sanitation facilities, dust suppression, and noise control during construction.
Mr. William	Antony Forest Assistant II (FA II)	Land use & resource protection	Clarified that the land is legally allocated by the District Council, reducing risk of disputes. Added that the project will curb illegal timber harvesting and charcoal production.
Ms. John	Magreth Beekeeping Assistant (BA II)	II Opportunities in beekeeping	Said stronger surveillance will protect bee colonies from illegal honey harvesting. Recommended that the project expand beekeeping support for communities.
Ms. Ester Fisso	Ward Executive Officer (WEO), Gitting Ward	Youth employment & community development	Urged prioritization of local youth for jobs. Suggested that timber from the reserve be allocated for community projects like school desks. Stressed protection of Bagara River catchment to safeguard water sources.

Table 1512: Community Contributions- Gitting Village (Hanang)

Name	Village	Comments/Concerns
Mr. Nicolaus Ninga	Gitting	Said local youth should be given first priority for both temporary and permanent jobs at the Ranger posts.
Mr. Joseph Boay	Gitting	Urged protection of Bagara River Gorge and other water sources, as they are critical for irrigation and drinking water.
Mr. Sebastian Qamara	Gitting	Requested a proper waste management system: designated disposal sites, recycling, and awareness campaigns.
Ms. Lucy Qwade	Gitting	Asked for promotion of alternative energy solutions such as biogas and improved cookstoves to reduce charcoal use.
Mr. Barnabas Boay	Gitting	Suggested establishment of community tree nurseries (fruit and timber species) to support reforestation.
Mr. Verani Uhubu	Gitting	Saw opportunities for small-scale businesses: food stalls, supply of construction materials, and services for workers and tourists.
Ms. Victoria Sebastian	Gitting	Called for training in conservation, beekeeping, and sustainable agriculture to build community capacity.
Mr. Jamal Seleman	Gitting	Said the Ranger posts will strengthen protection against illegal logging, poaching, and grazing, ensuring biodiversity conservation.

Vikindu Forest Reserve – Mkuranga DistrictDate: 11th August 2025

Location: Vikindu

Facilities: Modern gate, Tourism management office, Toilet, Parking area

Table 1513: Officials' Contributions-Vikindu Nature Forest Reserve

Name	Designation/Office	Topic	Responses/Concerns
Mr. Charles Kifungo Kaselya	Forestry Officer (DC)	Forest protection & eco-tourism	Reported that the BUREFOBI Project will enhance eco-tourism within Vikindu Forest Reserve. Cited Miwaleni Dam as a major tourist attraction, though it was polluted in December 2024 due to industrial wastewater discharge, reducing its attractiveness. Pointed out that Misre Dam, although smaller, still supports sport fishing and canoeing. Highlighted that 62 villagers are already formally and informally employed in activities such as

			forest cleaning, slashing, security, and conservation. Added that there are reserved areas for beekeeping, bee-tourism, cycling trails with an entry fee of Tsh 5,000, and even a privately owned children's swimming pool within the reserve. Mentioned that an investor (KMG) has expressed interest in establishing a zoo inside the reserve, which may boost tourism further.
Mr Paul A. Hillary	District Council – Environmental Management Officer (EMO)	Environmental risks	Noted the impact of industrial effluents from three large-scale industries upstream of the reserve, with Bahresa Food Production Industry being the major polluter of River Mzinga downstream. Explained that pollution cases have been reported to NEMC for compliance action. Urged strict waste management during BUREFOBI construction activities to prevent further degradation of the forest ecosystem.
Ms. Achsah Ezekiel	District Council – Community Development Officer (CDO)	Social & cultural aspects	Informed participants that the reserve contains cultural heritage resources, such as the Bashab tree which is traditionally used for worship by local communities. Recommended that cultural aspects be preserved and integrated into eco-tourism to strengthen identity and attract cultural tourists.

Table 1514 Community Contributions- Vikindu Nature Forest Reserve

Name	Village	Comments/Concerns
Mr. Salum A. Tinga	Mwandege	Raised concerns about three schools located directly adjacent to the reserve (Maendeleo Primary, Chatembo Primary, and Mwandege Secondary). Said pupils are at risk due to their proximity to the reserve. Requested that the BUREFOBI Project support the fencing of these schools for enhanced safety.
Ms. Zubeda Magonda	Mwandege	Urged that local people be prioritized for jobs during both construction and operational phases. She mentioned that many youth in Mwandege are unemployed and view the project as a key opportunity.
Ms. Cesisilia Mathew Kipala		Welcomed the project, saying the community will benefit from increased tourism activities. He said small businesses such as food stalls, souvenir shops, and guiding services will emerge, creating new income streams for residents.