AMANI-NILO CORRIDOR CONSERVATION STRATEGY (ANCCS)

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Acronyms and Abbreviations

AFON	Amani Friends of Nature
ANC	Amani-Nilo Corridor
ANCCS	Amani-Nilo Corridor Conservation Strategy
ANCWG	Amani and Nilo Corridor Working Group
ANFR	Amani Nature Forest Reserve
CAN	Connecting Amani and Nilo
CBFM	Community Based Forest Management
CBOs	Community Based Organisations
CSA	Climate-Smart Agriculture
CSF	Climate-Smart Forestry
CSOs	Civil Society Organisations
DFC	Derema Forest Corridor
EAMCEF	Eastern Arc Mountain Conservation Fund
EUTCO	East Usambara Tea Company
GDs	Group Discussions
GFP	Golden Food Product
GIS	Geographical Information System
JFM	Joint Forest Management
KIIs	Key Informant Interviews
LGAs	Local Government Authorities
MDC	Muheza District Council
MJUMITA	Community Forest Conservation Network of Tanzania
MNRT	Ministry of Natural Resources and Tourism
NGOs	Non-Governmental Organisations
NNFR	Nilo Nature Forest Reserve
RTI	Regional Triangle Institute
TAFORI	Tanzania Forest Research Institute
TFCG	Tanzania Forest Conservation Group
TFS	Tanzania Forest Services Agency
URT	United Republic of Tanzania
USAID	United State Agency for International Development
UWAMAKIZI	Umoja wa Wakulima Wahifadhi wa Mazingira Kihuhwi-Zigi
VLFR	Village Land Forest Reserve
VLUM	Village Land Use Management Committee
VLUP	Village Land Use Plan
VNRC	Village Natural Resources Committee
WWF	World Wide Fund for Nature

Definition of Terms and Terminologies

Biodiversity is the variability among living organisms and the ecological complexes of which they are part. This includes diversity within species, between species and of ecosystems.

Climate change refers to both global warming driven by human emissions of greenhouse gases and the results in large-scale shifts in weather patterns.

Corridor is a land area used by wildlife species in their seasonal movements from one part of an ecosystem to another in search of basic needs such as water, food, space and habitat.

Deforestation is the direct human-induced conversion of forested land to non-forested land.

Ecosystem services are the various direct and indirect benefits that people derive from ecosystems. These include provisioning (eg. food, fiber, biomass, freshwater, natural medicine), supporting (eg. nutrient cycling, water cycling, soil formation, photosynthesis), regulating (eg. air quality, climate, erosion, pollination) and cultural (eg. recreational, eco-tourism, spiritual).

Forest degradation is any process that reduces the density of flora or fauna in a forest, especially by the removal of trees, which results in decreased provision of ecosystem services.

Forest is an area of land covering at least 0.5 hectares, with a minimum tree crown cover of 10% and a minimum height of 3.0 meters.

Forest reserve is a forest area that is legally recognised and demarcated for the production of timber and other forest products or water catchment and biodiversity conservation.

Forest resources means forest and forest produce (wood and non–wood capitals in a forest).

Land use plan is a plan that allocates and zones land to its desirable use with respect to the environmental conditions and needs of the people, and formulation of legal and administrative tools to enforce the plan.

Local community is a group of interacting people with a common culture, traditions and beliefs and sharing a common environment.

Nature forest reserve is a forest whose prime function is the protection of the biodiversity and environment. Nature forest reserves are common in mountainous areas where they stabilize slopes, prevent avalanches, and protect water quality, and in coastal areas, where they stabilize sand dunes.

Stakeholder is any individual, group, organised or unorganised, or institution that shares a common interest or stake and can negatively or positively impact a specific issue or system within forest sector development.

Village Land Forest Reserve is a type of forest reserve within the village land of which its management is vested in the community itself.

Village Land Use Plan is a plan prepared at the village level that allocates and zone land to its desirable use with respect to the environmental conditions and needs of the people, and formulation of legal and administrative tools to enforce the plan.

Wildlife means any wild and indigenous animals and plants, and their constituent habitats and ecosystems found on and, or in land or water, as well as exotic species that have been introduced in Tanzania and established in the wild, and, includes wild animals on transit, temporarily maintained in captivity or have become established in the wild.

Executive Summary

Amani-Nilo Corridor (ANC) is one of the forest corridor in Tanzania located in the East Usambara Landscape part of the Eastern Arc Mountain Forests – a global biodiversity hotspot. The ANC connects two (2) nature forest reserves (Amani Nature Forest Reserve-ANFR and Nilo Nature Forest Reserve-NNFR). The ANC is a unique corridor composed of a mosaic of forest reserves-forest patches-tea plantations, and crop farms-settlement situated between ANFR and NNFR. It encompasses three (3) forest reserves (Semdoe, Kambai and Derema), patches of forest and tea plantations, and four (4) Village Land Forest Reserves (VLFRs) namely Kwengogo, Kwezitu, Mzungui, and Shambangeda. The ANC holds significant conservation value, fostering biodiversity of both flora and fauna, and ecological connectivity by facilitating wildlife movement. The corridor connects two reserves (ANFR and NNFR) that have almost 800 species of plants, 100 species of birds and 89 species which are categorised in the IUCN Red List as vulnerable, endangered or critically endangered. Forty-eight species of flora and fauna are endemic to the East Usambara including the ANC. The East Usambara also support the livelihoods of people estimated at 135,000 distributed across 35 villages. Despite its importance, the ANC faces threats from anthropogenic activities such as agriculture (notably spice farming), settlements, illegal harvesting of logs for timber, poles and firewood, wildfires, illegal alluvial mining and poaching. Consequently, the corridor is experiencing deforestation and forest degradation, with some forests gradually being turned into and/or containing patches of spice farms. This has been a major driver of ecological degradation, loss of species and ecosystem services for the local communities. The initiative to link ANFR and NNFR along with their respective protected areas across all VLFRs and private lands has thus led to the creation of the Amani – Nilo Corridor Working Group (ANCWG).

This group comprises two representatives from each of the seven villages: Antakae, Kwezitu, Kizerui, Msasa IBC, Magoda, Kwemdimu and Shambangeda. Additionally, it includes one representative from each of the Tanzania Forest Services Agency (TFS)-ANFR, TFS-NNFR, and TFS-Muheza, two representative from Muheza District Council (MDC), one councillor from each of Misalai and Kwezitu wards, and one representative from each of the Non-Governmental Organisations (NGOs) such as Nature Tanzania, Amani Friends of Nature (AFON), Eastern Arc Mountains Conservation Endowment Fund (EAMCEF), World Wide Fund for Nature (WWF), Regional Triangle Institute (RTI), and Tanzania Forest Conservation Group (TFCG). Community Based Organisations (CBOs) like the Community Forest Network of Tanzania (MJUMITA) and *Umoja wa Wakulima Wahifadhi Mazingira Kihuhwi-Zigi* (UWAMAKIZI), along with research institutions such as the Tanzania Forestry Research Institute (TAORI) and National Institute for Medical Research (NIMR) are also represented with one representative each. The MDC and TFS play a central role in regulating and monitoring the management of the ANC and in developing the Amani - Nilo Corridor Conservation Strategy (ANCCS) 2024-2034, which serves as a guiding tool for the working group. Besides, this strategy is designed to bolster a collective commitment to the ANC landscape by various stakeholders. It aims to foster multi-stakeholder collaboration for the protection, management, and conservation of the ANC at the landscape level, yielding socio-economic and ecological-connectivity benefits. The strategy focuses on addressing the shared concerns that unite different stakeholders at the ANC, including its protection, management, and conservation.

The strategy was developed using a participatory approach, gathering insights and feedback on various management and conservation issues about the ANC from stakeholders and reviewing pertinent literature. Additionally, a two-day consultative and validation workshop was conducted to garner stakeholders (including communities) feedback and validate the strategy before finalising the draft.

The strategy's vision is a well-managed Amani-Nilo Corridor (ANC) that sustainably provides vital ecosystem services and community livelihoods. Its mission is to provide effective and sustainable guidance for the management and conservation of the ANC through the promotion of best practices and technologies. The overall objective is to enhance the ecological, social and economic benefits of ANC for present and future generations.

The strategy contains seven (7) strategic objectives to be implemented for 10 years from 2024 to 2034. These include: -

i. Enhanced stakeholders' coordination, capacity and engagement in the management of the ANC;
ii. Strengthened communities' capacity to conserve the threatened ecological connectivity points along the ANC;
iii. Ensured sustainable management and conservation of the ANC;
iv. Improved community livelihood outcomes through a sustainable agricultural value chain in the ANC;
v. Enhanced Government and Private sector engagement in the management of the ANC;
vi. Strengthened stakeholders' capacity for addressing climate change in the ANC; and
vii. Strengthened management and conservation of water sources and riverbanks in the ANC.

The strategies and targets for each strategic objective are outlined to guide the pursuit of these objectives. All stakeholders in the ANC including local communities, NGOs, CBOs, Government, Development partners, and Research and Academic Institutions will implement the strategy. The strategy includes a resource mobilization mechanism to finance its implementation sustainably proposing both internal and external funding sources. These sources encompass budgetary allocations from the Local Government Authority (MDC), development of proposals to secure funds from development partners and internal funding organisations, establishment of payment of ecosystem services scheme (eg. Biocredits), and contributions from the community via internal sources. In addition to these initial plans for resource mobilization, a comprehensive strategy for mobilizing resources needs to be developed.

The strategy's monitoring and evaluation will adhere to the approved ANCWG monitoring framework with daily follow-ups proposed. The ANCWG in collaboration with other stakeholders in the ANC will evaluate the strategy during a mid-term review at the middle of the strategy's implementation (2029) and the final evaluation at the end of implementation (2034). In addition to the mid-term and final evaluations, will conduct periodic reviews every two years to assess progress and make necessary adjustments. The monitoring and evaluation reports will be presented and shared with the stakeholders for scrutiny and advice.

The successful implementation of the ANCCS hinges on several key factors: prioritizing local needs, ensuring gender equality, fostering strong community engagement, motivating stakeholders, encouraging public-private partnerships, co-creating impact-driven research, and fostering collaboration across sectoral policies. Other factors for sustainable financing include leveraging multiple funding sources, developing a long-term financial plan, and enhancing public-private partnerships.

The strategy recognises the potential risks and assumptions. The major risks include changes in national and local political will, escalation of conflicts (conservation versus anthropogenic activities and human-wildlife), climate changes, high rate of technological advancement, and changes in economic conditions. The key assumptions are effective coordination and cooperation, availability of technical capacity, ability to adapt to climate change impacts, market stability, political stability and policy continuity, no occurrence of environmental disaster and social stability.

It is anticipated that this strategy will serve as a living document, fostering positive and expected changes within the ANC. Spanning a decade from 2024-2034, the strategy will undergo a review informed by monitoring and evaluation reports. All stakeholders are urged to fully engage with the strategy to ensure the ANC is sustainably managed and conserved thereby continuing to provide ecosystem services for present and future generations.

1.0. INTRODUCTION

1.1. Background and Description of the Amani-Nilo Corridor (ANC)

Tanzania is a country rich in forests and biodiversity. Its forests cover approximately 48.1 million hectares, accounting for 55% of the total land area and include woodlands (93%), lowland (3.4%), montane (2.1%), plantations (1.2%), and mangroves (0.3%) (URT, 2017). The country's biodiversity richness is attributed to various factors including a diversity of habitats and ecosystems, and climatic conditions (MNRT, 2022). The country has devoted about 32.5% of its land surface to wildlife conservation, encompassing National Parks, Game Reserves, the Ngorongoro Conservation Area, Game Controlled Areas, Ramsar Sites, and Wildlife Management Areas (WMAs)(*ibid*). These areas of high biodiversity value, including water catchments, are interconnected by corridors. The corridors facilitate the movement of wildlife and the dispersion of plants, enabling access to essential resources like water, food, shelter, breeding sites, geophagy, and safety (MNRT, 2022).

Amani-Nilo corridor (ANC) (5743 ha) is one of the forest corridors in Tanzania located in the East Usambara Landscape in Muheza District part of the Eastern Arc Mountain Forests – a global biodiversity hotspot (USAID 2021a). The Muheza District is home to 238,260 people spread over 129 villages, covering an area of 1,974 km². This results in a population density of 121 people per km² (URT, 2022a). The ANC connects two (2) nature forest reserves (Amani Nature Forest Reserve-ANFR with 8,380 ha and Nilo Nature Forest Reserve-NNFR with 6,025 ha) (USAID 2021a, 2021b). These reserves have almost 800 species of plants, 100 species of birds and 89 species which are categorised in the IUCN Red List as vulnerable, endangered or critically endangered. Forty-eight species of flora and fauna are endemic to the East Usambara (USAID 2021a). The East Usambara Mountains (39,000 ha) contain 40 richness of endemic vertebrates (birds-7, mammals-4, reptiles-14 and amphibians-15) (Rovero et al., 2014). Generally, 3% of plants are endemic and 22% are qualified as 'near endemics' (Birdlife International, 2018, 2023). The ANC also encompasses three (3) forest reserves (Semdoe – 950ha, Segoma-1,168.2ha- and Derema – 960ha), patches of forest and tea plantations, and four (4) Village Land Forest Reserves namely Kwengogo (13.6ha), Kwezitu (4.5ha), Mzungui (28.1ha), and Shambangeda (4.05ha). Overall, this is a unique corridor composed of a mosaic of forest reserves-forest patches-tee plantations, crop farms – settlements situated between ANFR and NNFR (Plate 1.1).

Plate 1.1: A mosaic landscape parts of the ANC

Communities are nestled among these nature forest reserves, forest patches and tea estates, primarily depend on subsistence agriculture for their livelihoods, supplemented by income from cash crop production and wage labor, such as work in tea estates (Powell et al., 2011). The main subsistence food crops include maize, beans, yams, banana and cassava. The major cash crop grown are spices such as cardamom (Elettaria cardamomum (L.) Maton.), cinnamon (Cinnamomum verum J. Presl.), cloves (Syzygium aromaticum (L.) Merr.), and black pepper (Piper nigrum L.). Others are sugarcane, fruits, tea and some horticultural produce (tomatoes, onions, green leaves) (Powell et al., 2013; Tripath et al., 2020).

1.2. Values and Threats to the Amani-Nilo Corridor (ANC)

The ANC holds significant conservation value, fostering biodiversity of both flora and fauna. As noted earlier, the corridor connects two reserves in the East Usambara Mountain landscape that have 89 species which are categorised in the IUCN Red List as vulnerable, endangered or critically endangered. Have almost 800 species of plants and 100 species of birds. Forty-eight species of flora and fauna are endemic to the East Usambara Mountain Landscape (USAID, 2021a). Earlier records by Burgess et al., (2007), indicated that the East Usambara Mountains biodiverse humid forests including the ANC support 7 endemic animals and 42 strictly endemic plant species. According to the Missouri Botanical Garden's TROPICOS database, 15% of plant species endemic to the Eastern Arc Mountains occur in the Derema forest (part of ANC), including 69% of the endemic plants of the East Usambaras (Hall et al., 2014).

The East Usambara Mountain including the ANC supports a range of ecosystem goods and services to neighbouring population (135,000 people, distributed across 35 villages) (USAID 2021b). These ecosystem goods and services include providing habitat for various species (flora and fauna), offering forest products like honey, medicinal plants, wild berries, vegetables, timber, water and fuelwood, building materials as well as facilitating pollination, climate regulations, cultural practices (ritual practices) (USAID 2021a, 2021b). For example, the corridor plays a critical role in rain catchment and reducing the effects of climate change in the Tanga region (USAID, 2021a). EAMCEF (2021) revealed that the East Usambara Mountain Block including the ANC is estimated to have an economic value of 30.72 million tons of carbon dioxide (tCo_2) whose total economic value is around 153.60 USD). Additionally, the corridor is a mosaic landscape of its kind (Plate 1.1) and offers eco-tourism opportunities including spice tour, tea farm visits, bird watching, forest walks, and hiking. These goods and services are also integral to the livelihoods and well-being of the people.

However, despite its importance, the ANC faces threats from anthropogenic activities such as agriculture (notably spice farming), illegal harvesting of logs for timber, poles and firewood, wildfires, illegal alluvial mining and poaching. Consequently, the corridor is experiencing deforestation and forest degradation, with some forests gradually being turned into and/or containing patches of spice farms (See Appendix 2 and Figure 1.1). The increase in population, and poverty have been linked to the use of poor agricultural technologies/practices, settlement expansion, illegal mining and logging, all of which exert additional pressure on the forests. Poor price of produce, reliance on middlemen to sell crops, and limited agriculture-extension service provision are also significant to poor agriculture practices. Wildfires are often the result of

inadequate fire management during farm preparation and hunting, exacerbated in dry periods. The Government's restriction of commercially viable butterfly farming and trading in 2019 as an alternative source of income further increases the pressure on forest resources. Generally, this scenario poses a severe risk to the biodiversity of both flora and fauna, protection of water sources and livelihoods, and thus undermines the long-term conservation efforts invested over decades in the East Usambara Landscape, including the ANC.

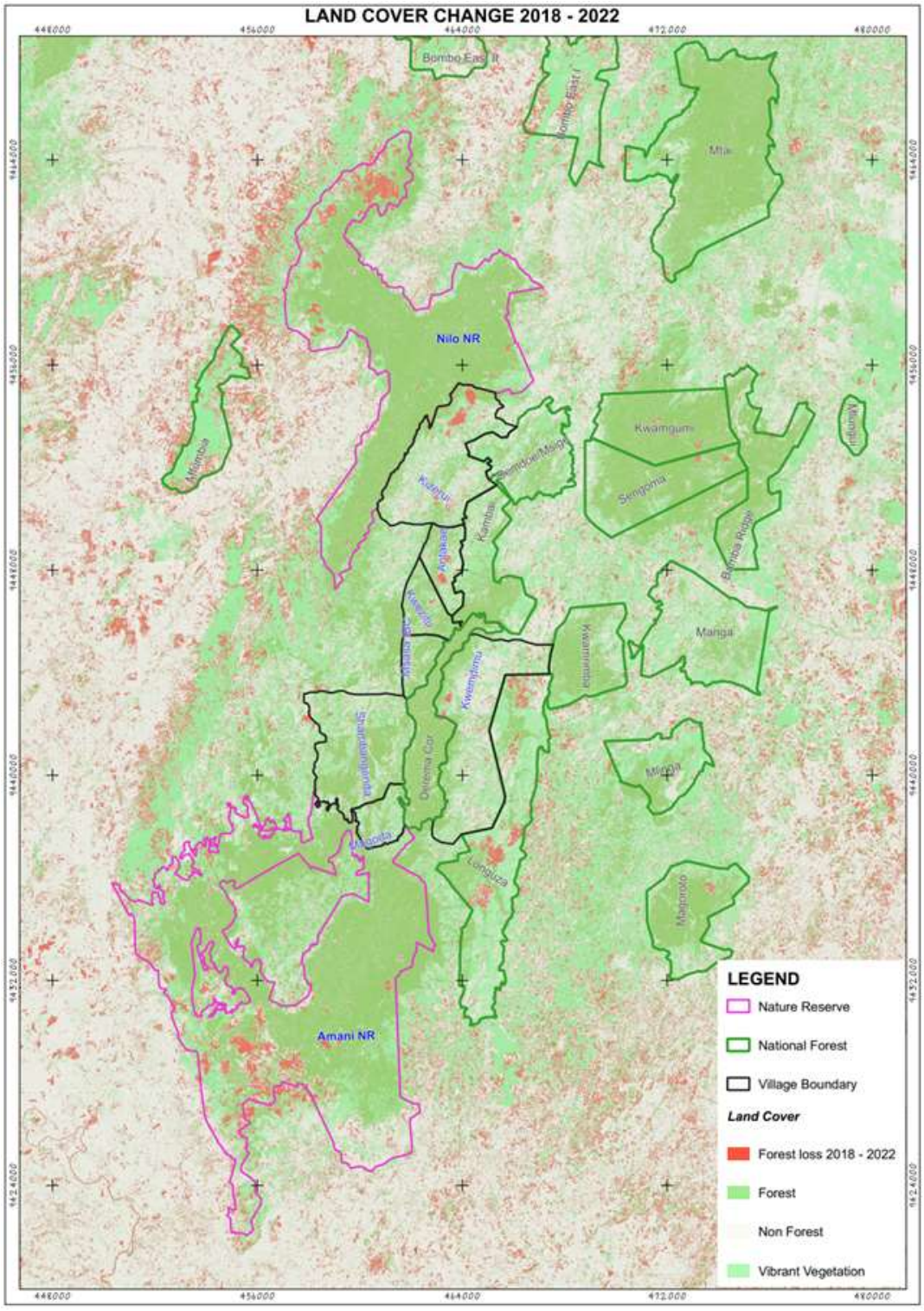

Figure 1.1: Land use cover change in the East Usambara Mountain Forest Landscape

1.3. History of Interventions in the Amani-Nilo Corridor (ANC)

The management and conservation of corridors is recognised as important by the Tanzanian government supported by the Wildlife Conservation Act of 2009 and the Corridor Regulations of 2018. In the East Usambara Mountain Forests including the ANC, the conservation initiatives could be traced dates back to the colonial period especially German time (the 1880s and 1900s). During this period, although the Germans interest was on commercial agricultural estates (plantation agriculture) (Hamilton and Bensted-Smith, 1989) associated with intensive lodging and unsustainable agriculture practices, there were also conservation initiatives (Hamilton and Bensted-Smith, 1989; Vihemäki, 2005). The Germans set up the Amani Botanical Garden (340 ha) in 1902 as an extensive arboretum of long-term botanical trial plots for exotic plant species (TBA, 2007; TFCG, 2017). More than 1,000 tree species (TFCG, 2017) were introduced in the arboretum from various parts of the world for agricultural trials with different economic interests, such as medicinal plants (i.e. Cinchona spp.), fruits and spices (e.g. Garcinia spp.), valuable timber (e.g. Cedrela, Eucalyptus), cosmetics (i.e. Cananga), rubber, fibre, oil (e.g. Hevea) and ornamental plants (e.g. fan palms) (TBA, 2007).

After the First World War (1914-1918) when the British took over from Germans in 1919, commercial tea cultivation expanded in the East Usambara Mountain resulting in more deforestation and forest degradation (Vihemaki 2005). However, the Government's awareness of the value of the East Usambara Forest Landscape gained a new momentum since the 1930's (TBA, 2007) and new forest reserves were established because of catchment values. Strick rules were set for the management and conservation of these forests (Hamilton and Bensted-Smith 1989).

After the independence (1961), the Tanzanian Government's regulations over natural resources were relaxed, partly as a result of government policy and partly due to the government' s decreased capacity to enforce them (Hamilton and Bensted-Smith 1989). Agricultural expansion and commercial logging further reduced the forest cover. The cultivation of cardamom, a valuable cash crop began to spread (Iversen 1991). In the mid-1970s the conservation organizations and the government recognised that the Derema forest area was unprotected, leading to its degradation (Mtango and Kijazi 2014; USAID, 2021a). Thus, initiated the strategy for the conservation of the Derema forest area.

In 1976 most forest resources on the East Usambara Mountain were categorised as "catchment forests" in recognition of their environmental importance including water catchment. These forests were primarily at protecting catchment with the conservation of genetic resources and secondary for the production of timber (Hamilton and Bensted-Smith, 1989). From the 1980s to 1984s several research and development conservation projects were implemented aiming at the management and conservation of the East Usambara Forest Landscape. Notably, in 1983 a joint Tanzania, Swedish and Hungarian project on integrated Usambara Rain Forest was implemented. It aimed at investigating the forest flora and fauna of the mountain to identify places of biological importance and hence their protection and conservation.

In the mid-1980s, two Finnish donor-funded conservation projects were launched namely; the East Usambara Conservation and Agricultural Development Project (EUCADEP) (1987-1997) worked with communities and focused on the public land, and the East Usambara Catchment Forest Project (EUCFP) (1990-2002) focused on reserved forests (Vihemaki, 2005). EUCADEP tested an approach to "conservation based rural development". It focuses on agriculture and forestry to examine land use practices, the status of forests and advice on actions. This resulted in the project implementing sustainable agriculture practices including enrichment planting, (Hamilton and Bensted-Smith, 1989). The EUCFP in the last phase, the former EUCADEP and the EUCFP were combined and named EUCAMP (1998-2002). The project contributed to the efforts to conserve biodiversity with consideration of people's livelihoods by promoting community participation in establishing Village Forest Reserves (Community Based Forest Management) - managed and owned by villagers and Joint Forest Management (collaborative forest management between government forests and local communities). This approach also led to the participatory establishment of the Amani Nature Reserve, one of the major achievements of the EUCFP in promoting biodiversity conservation (Vihemaki, 2005). Other strategies included introducing various income-generating activities, environmental education and farm-forestry to support conservation in the area.

Furthermore, given the nationally and internationally recognised importance of the East Usambara Forest Landscape in the late 1990s, ANFR) was gazetted in 1997 (GN No. 151 and 152), amalgamating six forest reserves (Amani-Zigi, Amani-East, Amani-West, Kwamsambia, Kwamkoro and Mnyuzi Scarp), public land and 1068 ha of forest donated by the East Usambara Tea Company (established in 1940) (TBA, 2007; TFCG 2017). This forest was the first in the country dedicated as a nature reserve giving it a special mission in national and international conservation efforts (Mtango and Kijazi, 2014). In the same vain in 2017, Nilo Forest Reserve was also declared and gazetted as a Nilo Nature Forest Reserve (NNFR) (GN No 234) (Mtango and Kijazi, 2014; TFCG, 2017).

As noted above that in the 1970s the Derema forest area which connects ANFR and NNFR was degraded, its Gazettement process as a national forest reserve started in the 1990s through the efforts of the government of Tanzania and with funding from the government of Finland and the European Union (Hall et al., 2014). Overall the funding used to complete compensation of farmers for land loss due to the gazettement of the Derema forest was obtained from the Government of Finland, the Government of Tanzania through the Ministry of Natural Resources and Tourism (MNRT), the Global Conservation Fund, the World Bank, and the Critical Ecosystem Partnership Fund (CEPF) (*ibid*). However, it wasn't until 9th July 2010, when the Derema area was declared in the Government Gazette of Tanzania Government Note 255) as the Derema Forest Corridor (DFC) (Hall et al., 2014), becoming a national forest reserve connected to the Amani Nature Reserve (ANR) (Mtango and Kijazi 2014; USAID, 2021a). This was possible after the appropriation of about 960 ha of native canopy agroforest and steep slopes for the corridor and monetary compensation to more than 1100 claimants in the five surrounding villages to DFC. (Hall et al., 2014; USAID, 2021a). The DFC's establishment was facilitated by the East Usambara Forest Landscape Project (EUFLRP), carried out from 2004 to 2013 by the World Wide Fund for Nature (WWF) and the Tanzania Forest Conservation Group (TFCG), with financial support from the Finnish Ministry of Foreign Affairs. The DFC was the first gazettement process in East Africa

to attempt to adhere the World Bank's 2001 Resettlement Safeguards Policy of do no harm (Hall et al., 2024). Generally, the EUFLRP aimed to prevent the loss of critical biodiversity, enhance local livelihoods, and sustain the multifunctional role of forests. Key interventions included creating Village Land Use Plans (VLUPs), Joint Forest Management (JFM), Community Based Forest Management (CBFM), and alternative income-generating activities such as beekeeping, brick-making, spice farming, butterfly farming, fish farming, agroforestry, Village Savings and Loan Associations (VSLAs), and energy-saving stoves (Mansourian et al., 2021; Njoghomi et al., 2022). Also, between 2009 and 2011, the WWF implemented a project called the Equitable Payment for Water Services (EPWS), which focused on conserving water sources, particularly the Kihuhwi and Zigi water catchments. Zigi forms part of ANC. This project also led to the creation of a Community Based Organization (CBO) named "Umoja wa Wakulima wa Hifadhi Mazingira Kihuhwi na Zigi" (UWAMAKIZI), dedicated to the conservation of water sources through community-based initiatives. The primary activities of the project included tree planting and promoting conservation agriculture (FAO, 2013; Njoghomi et al., 2022).

Additionally, in 2006 the Government of Tanzania through the MNRT created the Eastern Arc Mountains Conservation Endowment Fund (EAMCEF) to provide long-term financing for conservation efforts in the Eastern Arc Mountains (EAM) area including the ANC (EAMCEF, 2019). Since 2006 to date, the EAMCEF has been supporting the conservation of forest biodiversity in Tanzania's Eastern Arc Mountains, including the ANC, by empowering community development projects and enhancing community livelihoods. This support extends to sustainable management of conservation areas, biodiversity, and climate change research. Supported initiatives include tree planting, beekeeping, ecological organic agriculture, and water and soil erosion conservation practices. In 2007, the first EAM Strategic Plan was developed to guide the management and conservation of the EAM including the East Usambara Mountains. However, due to significant socio-economic and ecological developments in the area, the strategy became outdated and required an immediate review to accommodate these changes and remain relevant. As such in 2019, EAM Forests Overarching Strategic Management Plan (2019-2028) was created to provide better technical and proper management guidance for the EAM forests. Furthermore, this strategy aimed to establish a more effective benchmark for quality control and monitoring of management practices within the EAM forests and the EAM World Heritage Site (*ibid*). In the EAM forests, the ANFR and NNFR are categorised under the UNESCO Man and Biosphere World Heritage Site (East Usambara Landscape Biosphere Reserve) designated in 2000 covering 90,000ha (MNRT, 2010; TFCG, 2017; Mansourian et al., 2019; Uisso et al., 2023b). The process of developing the nomination of the Eastern Arc World Heritage property was supported by the Forest and Beekeeping Divison (FBD) and UNDP-GEF Project, 'Conservation and Management of the Eastern Arc Mountain Forests' 2003-2010 (MNRT, 2010; EAMCEF, 2019). Moreover, according to Bird International, the East Usambara Mountain is ranked 12th world best bird watching sites since 2013 (Important Bird Area – IBA and Key Biodiversity Area – KBA) (Bird International, 2023). The East Usambara Mountains are one of the most important sites in Africa for the conservation of globally threatened birds including *Bubo vosseleri*, *Otus ireneae*, *Orthotomus moreaui*, *Modulatrix orostruthus*, *Swynnertonia swynnertoni* and *Ploceus nicolli (ibid).*

Integrated Approaches for Climate Change Adaptation (IACCA) project, was implemented from 2015 to 2019 by ONGAWA 'Engineering for Human Development' and TFCG with the European

Union's support under the Global Climate Change Alliance (GCCA). It aimed to showcase effective strategies aiding poor, rural Tanzanian households in adapting to climate change's adverse effects and reducing poverty. It specifically aimed to assist eight communities near high biodiversity forests in Kwemsoso, Mgambo, Misalai, Kazita and Shambangeda, in Misalai ward, and Kizerui, Zirai and Kwelumbizi in Zirai ward (Shembageda and Kizerui are part of ANC) in enhancing and diversifying their incomes, strengthen resilience, and reduce vulnerability to climate-related impacts. The project's interventions included capacity building for climate change adaptation, forest, water source and land management, sustainable agricultural practices (climate-smart agriculture - CSA, agroforestry), dairy cattle husbandry, tree planting, energy-saving stoves, forest-based enterprises (eco-tourism, beekeeping, butterfly farming), entrepreneurship skills and microfinance services (Eze et al., 2021; Smith et al., 2021; Njoghomi et al., 2022). These were the livelihood activities linked to forest conservation in the ANC. Moreover, the project facilitated the development of forest management plans, good governance training in natural resource management, and patrol equipment such as rain clothes and bicycles for the five communities already establishment Village Land Forest Reserves (VLFRs) (Handei, Kwewina, Kizingata, Mzungui, and Shambangeda). The NNFR was supported through training and awareness campaigns for climate change adaptation (Njoghomi et al., 2022; Gaworek-Michalczenia, 2024).

Likewise, over the past two decades, Golden Food Products (GFP) company has been active in the East Usambara including the ANC to support sustainable spice farming which seems to be the major source of livelihood of the people and yet a threat to the conservation efforts. In this case, the GFP is enhancing the capacity of farmers in sustainable ecological spice agriculture to bolster the livelihoods of smallholder farmers and conserve forests. The company has educated local farmers on ecological organic agriculture, with a particular focus on spice cultivation, including cinnamon, cardamom, cloves, and black pepper. They have also aided the communities in setting up spice nurseries and have provided training on water source conservation. These efforts are crucial for improving the livelihood and well-being of the community and forest conservation.

From 2019-2021, a New Origins Sustainable Spices (NOSS) project supported by the Dutch Government and spice company (GFP) was implemented in East Usambara. The project targeted on ginger crop and aimed to transfer knowledge and expertise, by way of nurseries, ginger model farms, and farmer capacity building through training. The project focuses on promoting sustainable cultivation methods, and creating a sustainable ginger value chain for export, aiming for an increase in the quality and quantity of organic and conventional ginger exports from East Usambara to the European Union.

Currently there is an ongoing project on 'Connecting Amani and Nilo (CAN) Forest' from 2022 to 2025 implemented by TFCG with financial support from the United States Agency for International Development (USAID). The project is being implemented in the ANC and focuses on ANFR, NNFR, Derema Forest Reserve (DFR) and seven villages namely; Kwemdimu, Magoda, Shambangeda, Msasa IBC, Antakae, Kwezitu and Kizerui in Muheza District, Tanga Region. The project aims to improve the management of the Amani-Nilo biodiversity corridor and increase stakeholder capacity to conserve biodiversity and sustainably manage natural resources. The project has supported the establishment of VLUPs, VLFRs, training on gender issues and created

VSLA groups (Uisso et al., 2023b). The project also has developed the Amani-Nilo Corridor Working Group (ANCWG) comprised of various conservation stakeholders such as two representatives from each of the seven villages: Antakae, Kwezitu, Kizerui, Msasa IBC, Magoda, Kwemdimu, and Shambangeda. It also includes one representative from each of the Muheza District Council (MDC), Tanzania Forest Services Agency (TFS)-ANFR, TFS-NNFR, and TFS-Muheza. Additional members include one councillor from each of the Misalai and Kwezitu wards, and one representative from Non-Governmental Organisations (NGOs) such as Nature Tanzania, Amani Friends of Nature (AFON), Eastern Arc Mountains Conservation Endowment Fund (EAMCEF), World Wide Fund for Nature (WWF), Regional Triangle Institute (RTI), and Tanzania Forest Conservation Group (TFCG). Furthermore, Community Based Organisations (CBOs) like the Community Forest Network of Tanzania (MJUMITA) and *Umoja wa Wakulima Wahifadhi Mazingira Kihuhwi-Zigi* (UWAMAKIZI), as well as research institutions like the Tanzania Forestry Research Institute (TAORI) and National Institute for Medical Research (NIMR), each have one representative. The working group aims at improving stakeholder coordination and engagement in achieving long-term forest connectivity, biodiversity conservation, and community development in the ANC.

Similarly, recently, Nature Tanzania (an NGO), has been implementing a project on the School Environmental Education in Derema (SEED) Project (2022-2024) in East Usambara especially on the ANC to establish Eco-Schools. School children are learning about care for the environment and nursery establishment and management, becoming agents of change and sharing their knowledge with the wider community. The project has established alternative income activities of priority in the schools including nurseries for spices, avocado tree planting, vegetable production and beekeeping. The project involves six primary schools (Kwezitu, Kambai, Msasa IBC, Antakae, Kwemdimu and Zigi) and two secondary schools (Shebomeza and Zirai). A total of 26 school teachers and 9 tour guides (villagers) have been trained in the management of natural resources and biodiversity conservation.

Finally, recently, the WWF is carrying out a four-year project on Resilience for People and Biodiversity (RPB) project from 2023 to 2026. This project is implemented in three wards and nine villages within the Derema area. Its objective is to strengthen the conservation of forests, water sources, and biodiversity, including flora and fauna, across the upper and lower zones of East Usambara and the coastal zone. This initiative aims to enhance ecological services and improve the livelihoods of the local communities (ecosystem for the benefit of people and nature). The project involves; i) awareness raising/mobilization and capacity building of Local Governments, Communities, Village CBOs, and CSOs on Natural resources policies and advocacy, ii) Forest Restoration to ensure wildlife habitat connectivity, iii) promoting sustainable energy technologies, iv) spatial planning, and v) promoting sustainable CSA.

1.4. Stakeholders Analysis

A stakeholder is any individual, group, organised or unorganised, or institution that shares a common interest or stake and can negatively or positively impact a specific issue or system within forest sector development (DFID, 2003). In this strategy, the stakeholders in the ANC. In the ANC, stakeholder analysis was done via desk review to identify the stakeholders including their interests

and influence (*ibid*). Stakeholder interest and influence were also obtained from the stakeholders themselves during interviews. The stakeholders were further refined during the validation workshop. Overall, there is high interest and medium to high influence of the stakeholders in the management and conservation of the ANC. In the ANC, stakeholders are collaborating in several ways. For instance, the TFS collaborates with local communities to manage nature reserves via Joint Forest Management (JFM). The TFS also supports village natural resources by providing environmental training and patrol equipment. Additionally, NGOs and CBOs are working together or with the private sector to implement projects, such as those by TFCG and MJUMITA, and TFCG with Nature Tanzania. Institutional cooperation is equally important among universities, research institutions, and NGOs, exemplified by collaborations between Leeds University and Sokoine University (SUA), and between TFGG and TAFORI. Table 1.1 presents key stakeholders in the ANC and their roles, interests and influence.

Table 1.1: Stakeholders in the Amani-Nilo Corridor (ANC)

S/ No	Category/Level	Role in the ANC	Interest	Influence
1.	**Government**			
	Sectoral Ministry of Natural resources and Tourism (MNRT), Land and Human settlements (MLHS), Agriculture (MoA) and Water (MoW)	Provide policy guidance, direction and interpretation, and law enforcement	H	H
	President's Office - Regional Administration and Local Government (PO-RALG)	Provide policy guidance, direction and interpretation, and law enforcement	H	H
	Regional Administrative Secretary (RAS) - Tanga	Technical support, provide policy guidance, direction and interpretation, and law enforcement. Monitor and evaluate the implementation of the Strategy	H	H
	Local Government Authority – MDC	Technical support, provide policy guidance, direction and interpretation, and law enforcement. Monitor and evaluate the implementation of the Strategy through ANCWG	H	H
	Pangani Water Basin Authority	Sustainable management and utilization of water	H	M
	Tanga Urban Water Supply and Sanitation	Sustainable management and utilization of water	H	M

S/ No	Category/Level	Role in the ANC	Interest	Influence
	Authority (Tanga-UWASA)			
	TFS (ANFR, NNFR and DFC)	Sustainable management and conservation of forests and allied natural resources, improvement of community livelihoods	H	H
2.	**NGOs and CBOs**			
	TFCG	Supports to strengthen community capacity to improve their livelihoods, to secure rights to land and natural resources and to sustainably manage them	H	H
	MJUMITA	Strengthens community capacity to manage and conserve forests, especially on good governance and gender equality	H	H
	WWF	Supports conservation, management, and ensuring sustainable utilization of the corridor and its resources for the benefit of present and future generation	H	H
	EAMCEF	Supports management and conservation of forests and allied natural resources and improves community livelihoods	H	H
	Nature Tanzania	Supports the community especially school children to take care of the environment through eco-schools	H	M
	Umoja wa Wakulima Wahifadhi wa Mazingira Kihuhwa Zigi (UWAMAKIZI)	Supports conserving forests and water sources	H	H
	Amani Friends of Nature (AFON)	Supports management and conservation of forests	H	H
	Water users' group	Sustainable management and utilization of water	H	H
	Agricultural Markets Cooperative Society (AMCOS)	Supports marketing of agricultural products	M	M
3.	**Local Communities**			

S/ No	Category/Level	Role in the ANC	Interest	Influence
	Village Leaders including the Village Natural Resource Committee (VNRC) and Village Land Use Management Committee (VLUMC)	Ensures compliance with the laws and policies	H	H
	Villagers	Main actors in the implementation of the strategy, involved directly in the management, conservation and utilization of forests and allied resources	M	H
	Amani Nature Guides	Supports eco-tourism services	H	H
4.	**Private Sector**			
	East Usambara Tea Company (EUTCO)	Tea plantation and conservation of forest patches	M	M
	Bombay Burmah-Marvela tea company	Tea plantation and conservation of forest patches	M	M
	Golden Food Products (GFP)	Strengthen the capacity of farmers in ecological spice agriculture for improved smallholder farmers' livelihood and forest conservation	H	M
	Trianon Tanzania – Tanzania Spice Company	Spice trade (business)	M	M
	Trianon spices	Spice trade (business)	M	M
	Zigi Spice Company	Spice trade (business)	M	M
	NOSS	Spice farming and trade	M	M
	Tanzania Private Sector Foundation	Change in public policy	M	M
	Eastern Arc Birding	Birding tour	M	M
5.	**Research and Academic Institution**			
	NIMR	Research to inform the management and conservation of medicinal plants	H	M
	TAFORI	Research to inform the management and conservation of forests and allied natural resources	H	M
	TARI	Research to inform the management and conservation of forests and allied natural resources	H	M

S/ No	Category/Level	Role in the ANC	Interest	Influence
	ESRF	Research to inform the management and conservation of forests and allied natural resources	H	M
	Leeds University	Research to inform the management and conservation of forests and allied natural resources	H	M
	SUA	Research to inform the management and conservation of forests and allied natural resources and Teaching/Field practical site	H	M
	Dodoma University	Research to inform the management and conservation of forests and allied natural resources	H	M
6.	**Development partners**			
	USAID	Financing projects/initiatives	H	M
	European Union	Financing projects/initiatives	H	M
	World Bank	Financing projects/initiatives	H	M
	Government of Finland	Financing projects/initiatives	H	M
	Dutch Government	Financing projects/initiatives	H	M
7.	**Media**			
	Radio, TV, Magazine	Awareness raising on the ANC and ANCCS	H	H

Note: Low= L; Medium = M and High = H

Source: Field survey 2024: CAN Forest Project Team, 2022

1.5. Legal Frameworks Context

The strategy is guided by several legal frameworks, which set the basis for what the strategy is building on (i.e. contribution). For the strategy to be implemented successfully it will require close collaborations with the cross-sectoral policies and legal frameworks. Here under are the key legal frameworks associated with the strategy.

1.5.1. Linkage with National and International Planning Frameworks

1.5.1.1. Tanzania Development Vision 2025

The Tanzania Development Vision 2025 is focused on achieving a high-quality life for its citizens, establishing good governance through the rule of law, and building a robust and competitive economy. It serves as a roadmap for economic and social development efforts until the year 2025. The Vision acknowledges the critical role of environmental protection in improving livelihoods and advocates for a harmonious balance between conservation and human development. Given the

significance of environmental health for socio-economic progress, including ecosystem services, the Tanzanian Government has integrated issues concerning environmental and biodiversity conservation issues as crosscutting into the Vision. The Vision anticipates rapid growth while simultaneously addressing and reversing the negative trends in environmental resource loss and degradation, such as in forests, fisheries, freshwater, climate, soils, and biodiversity. These considerations in Vision 2025 lay the groundwork for formulating ANCCS that seeks an equilibrium between conservation efforts and socio-economic advancement.

1.5.1.2. National Five-Year Development Plan for 2021/2022-2025/2026

The National Five-Year Development Plan (2021/22-2025/26), themed "Realising competitiveness and industrialization for human development," is a continuation of the Tanzanian Government's efforts to achieve the objectives set forth in the National Development Vision 2025. This plan focuses on enhancing the standard of living for all Tanzanians by increasing efficiency and productivity in manufacturing, utilizing the country's abundant resources. It acknowledges the natural resources such as land, airspace, water, minerals, petroleum, natural gas, wildlife, and forestry, ensuring these resources benefit all Tanzanians. The plan also recognizes the importance of environmental protection, climate change mitigation, and adaptation. It emphasizes proper land use and management, water source protection, water harvesting technologies, afforestation programs, community-based natural resource management, and enforcing legislation against pollution and harmful extractive practices. Additionally, it includes measures to mitigate environmental disasters, such as flooding, drought, and the impact of refugee influxes. The plan also highlights the provision of incentives for women and youth in climate change mitigation efforts and improving institutional coordination for natural resource management. Moreover, it advocates for the development and implementation of strategies to combat poaching, illegal harvesting, and trade of wildlife, forest, bee, and antiquities resources. Thus, the proposed ANCCS should address several issues, including the strengthening of systems to protect and sustainably use the ANC's natural resources for present and future generations, with an emphasis on wildlife, forests, rivers, habitats, and land.

1.5.1.3. Sustainable Development Goals (SDGs)

In 2005, United Nations (UN) member states, including Tanzania adopted the Sustainable Development Goals (SDGs) in 2015. These goals represent a global call to action to end poverty, protect the planet and ensure peace and prosperity for all. The SDGs aim to harmonise the economic, social and environmental facets of sustainable development. They target some of the world’s most pressing problems/challenges, including hunger, poverty, gender inequality, climate change, biodiversity loss, deforestation, and the unsustainable use of natural resources. For example, SDG 1 is dedicated to improving livelihoods for poverty alleviation and welfare (ending poverty), SDG 2 promotes hunger-free, SDG 5 focuses on gender equality, SDG 6 emphasises attaining “clean water and sanitation”, SDG 8 advocates decent work and economic growth and SDG 9 fostering on developing technologies and innovations. Additionally, SDG 13 underscores the need for climate actions, SGD 15 emphasises protection and restoration of terrestrial ecosystems including forests and woodlands, combating desertification, reversing land degradation and preventing biodiversity loss (life on land). The proposed ANCCS should align its

strategies with these global goals, emphasising significant contributions through enhanced conservation, and effective management and utilization of forests and allied natural resources.

1.5.2. Linkage with National Policies

1.5.1.1 The National Forest Policy (1998) and Forest Act (2002)

The National Forest Policy of 1998 and the Forest Act No. 14 of 2002 recognise the significance of Participatory Forest Management (PFM) as a key strategy for managing forest resources in the country. Both the Policy and the Act advocate for the implementation of PFM in Tanzania. PFM is executed through two main approaches namely Joint Forest Management (JFM) and Community-Based Forest Management (CBFM). JFM occurs on reserved land and is owned and managed by either the government (central or local) or the private sector. In this approach, communities adjacent to forests agree jointly to manage the area, sharing responsibilities, costs and benefits with the forest owner. CBFM happens in forests located on village lands and in reserved forests on general lands where local communities have full mandates to own and manage the forests (URT 1998; URT, 2002; URT, 2022b). The Forest Act recognised four types of forests namely; i) National forests reserve which consists of forest reserves, nature forest reserves and forests on general land, ii) Local authority forest reserves which consist of local authority forest reserves and forests on general land, iii) Village forests which consist of village land forest reserves, community forest reserves created out of village forests, (iii) Forests which are not reserved which are on village land and of which the management is vested in the village council; and iv) Private forests which are: forests on village land held by one or more individuals under a customary right of occupancy, forests on general or village land of which the rights of occupancy or a lease has been granted to a person or persons or a partnership or a corporate body or an NGO or any other body or organization. With this ANCCS it is obliged to conform to the provisions of this forest policy and act.

1.5.2 The National Forest Policy Implementation Strategy (2021-2031)

The National Forest Policy Implementation Strategy (NFPIS) of 2021 is aimed to spearhead the achievement of the Policy goal of enhancing the contribution of the forest sector to the sustainable development of Tanzania, and the conservation and management of her natural resources for the benefit of present and future generations. Hence, expected results emanating from effective and efficient implementation of the Strategy will lead to; a sustainable supply of forest products and services, increased employment opportunities and foreign exchange earnings, enhanced ecosystem stability, and enhanced national capacity to develop and manage the forest sector. For example, in the context of Community-Based Forest Management (CBFM), the strategy embraces the need to enhance the contribution of the contribution of CBFM through a sustainable supply of forest produce, employment opportunities, and enhancing ecosystem stability among others. The strategy again insists that all forests under central, local authority and private forests are managed in accordance with the approved management plan (URT, 2021a). The development and implementation of the ANCCS will, therefore, adhere to and address the NFPIS.

1.5.3 The National Community-Based Forest Management (CBFM) Action Plan (2021-2031)

The National CBFM Action Plan (2021-2031) serves as an operational instrument that facilitates the execution of the National Forest Policy Implementation Strategy for 2021-2031. Its objectives are to: i) improve effective management of forests in CBFM areas to increase the supply of forest products and services, ii) support the development of sustainable forest-based industries in CBFM areas as sources of employment and earnings, iii) contribute to forest ecosystems stability through conservation of forest biodiversity, water catchments and soil fertility, and iv) engage with key stakeholders to enhance the country's capacity in forest sector management and development (URT, 2022b). The development and implementation of the ANCCS need to implement the CBFM initiatives in the ANC according to the objectives of the action plan.

1.5.4 The National Biodiversity Strategy and Action Plan (NBSAP) (2015-2020)

The current NBSAP (2015-2020) which is under revision is in line with the National Development Vision 2025 articulation on the importance of biodiversity, i.e. to build a society that values all the biodiversity richness, using it sustainably and equitably, while taking the responsibility for actions that meet both the competing requirements of the present and the legitimate claims of the future generations (URT, 2015). Taking in mind that the ANC is a biodiversity hotspot, the proposed ANC will also be implemented following the NBSAP to ensure that biodiversity and ecosystems are well protected, restored and used sustainably, and ecosystem functioning is maintained, so that they perpetually deliver sustainable intrinsic benefits for socio-economic development.

1.5.5 The Tanzania Wildlife Policy (1998) and Wildlife Conservation Act (2009)

The Wildlife Policy of Tanzania (1998) strives for wildlife protection through strengthening legal frameworks and community participation, sustainable and appropriate wildlife utilization through investment and community involvement in wildlife conservation, proper management and development of protected areas (PAs), and integration of wildlife sector with international agencies and neighbouring countries through adoption of international conventions and treaties (URT 1998b). The legal framework for implementing the Wildlife Policy is provided by the Wildlife Conservation Act of 2009 and Corridor Regulations of 2018 (URT 2009; URT, 2018). The Act promotes the establishment of wildlife conservation areas that are obliged to be managed in a manner that is socially and ecologically sound. The Act gives a clear definition of wildlife (see definition of terms above) and corridor, and recognises the need to establish corridor functional working groups and participatory management and conservation of the forests, wildlife and corridor important for ecological conservation and community development (URT, 2009). Wildlife Corridor is defined as the area of land used by wild animal species in their seasonal movements from one part of an ecosystem to another, in search of basic requirements such as water, food, space and habitat (*ibid*). The Wildlife Corridor Regulations acknowledge the crucial role that protected areas play in community survival through the provision of ecosystem goods and services (URT, 2018). They emphasise the importance of balancing development with the conservation of biodiversity. The regulations also embrace the creation of a priority corridor action plan that takes into account biological and ecological importance, wildlife populations, and the

integrity of the protected area system (*ibid*). The development and implementation of the ANCCS which focuses on the ANC, one of the essential wildlife corridors in Tanzania need to conform to the provisions of this policy and legislation.

1.5.6 The National Climate Change Response Strategy (2021-2026)

The National Climate Change Response Strategy (NCCRS) (2021-2026) has been prepared in the wake of growing concerns about the negative impacts of climate change and variability on the country's social, economic and physical environment. The landmark developments include the adoption of the Paris Agreement in 2015 by the United Nations Framework Convention on Climate Change which is geared towards enhancing the implementation of the Convention. The overall objective of the NCCRS is, therefore, to enhance the national resilience to the adverse impacts of climate change and enable the country to pursue low-emission development pathways to achieve sustainable development (URT, 2021b). For example, the strategy plans to reduce deforestation and improve energy availability and diversification. The development and implementation of the proposed ANCCS will also focus on enhancing local communities' resilience to the adverse impacts of climate change in the ANC through awareness campaigns and education, and support to various adaptation strategies such as CSA and climate-smart forestry (CSF).

1.5.7 The National Land Policy (2016), Land Act (1999) and Village Land Act (1999)

The Land Policy of 2016, Land Act of 1999 and Village Land Act of 1999 established the framework for land tenure (URT, 1999a; URT 1999b; URT, 2016). The land policy ensures that land is put to its most productive use to promote rapid the environmental and social-economic development of the country. The policy also seeks to promote an equitable distribution of and access to land by all people (URT, 2016). The land law recognises two forms of land tenure namely; i) customary rights of occupancy, which are indefinite and are obtained by individuals or communities with Tanzanian citizenship, and (ii) granted rights of occupancy, which the government issues to individuals, villages, companies, parastatal organizations and investors. The land laws recognise several categories of land: i) reserved land, designated for wildlife, forests, marine parks, etc, ii) village land, encompassing all land within registered village boundaries with the Village Land Act outlining it administration and management, and iii) general land which includes neither reserved land nor village land such as urban areas (URT 1999a; URT1999b). The village land act provides villages the responsibility to conduct participatory land use planning (URT, 1999b). These are the key land-related issues that need to be taken on board while developing and implementing the ANCCS.

1.5.8 The Land Use Planning Act (2007)

The Land Use Planning Act of 2007 establishes procedures for the preparation, administration, and enforcement of land use plans. The Act acknowledges the importance of preserving village land resources, including forests and wildlife. It also acknowledges the allocation of land for various purposes such as cropland, rangeland, forestland, water sources, fisheries, farming, and industrial areas, including factories and workshops. Additionally, it recognises the establishment

of buffer zones to protect natural forests, forest reserves, water catchment areas, rivers, dams, and riverbanks. Moreover, it mandates the reservation and maintenance of all land designated for open spaces, parks, wetlands, urban forests, and green belts as per the approved plan and acknowledges the significant role of forests in the development of local communities (URT, 2007). Generally, the Land Use Planning Act recognises the importance of forests and other natural resources and the roles it plays for the community's livelihoods. The ANCCS especially on the issues of VLUP should consider forests and other natural resources and their linkage to community development.

1.6. Gender and Climate Change Issues

1.6.1. Gender Issues

Consultation with various stakeholders revealed that in the villages within the ANC, there is a significant recognition of the need to consider gender equality when planning, managing and conserving natural resources, including forests. This recognition is attributed to supportive government policies and the advocacy for gender equality by some conservation initiatives in the area (e.g. TFCG, MJUMITA, and WWF). Smith et al., (2021) during the implementation of the IACCA programme (see Section 1.3), prescribed gender-equal representation for the farmer group membership (e.g. village saving and loan association), with a stipulation for inclusion of members from more vulnerable groups. However, according to villagers, women, unlike men, often have additional domestic responsibilities such as cooking, childcare, washing clothes, firewood collection, fetching water, and cleaning utensils, alongside their conservation activities. Villagers claimed that, although it is decreasing, this scenario is largely attributed to the existing social system in the area (Patriarchy). Patriarchy refers to a social system where men predominantly hold positions of dominance and privilege. Smith et al., (2021) observed that conflicting activities, such as attending livestock, childcare, running a business, dealing with ill-health and old age, often pose challenges in attending training sessions implemented by a conservation initiative. The most affected people are usually those from more marginalized groups, particularly women and the elderly. Generally, there is a higher participation rate among men compared to other groups like women, youth (girls and boys) and other disadvantages people in forest management and conservation within the corridor. The disadvantaged often feel incapable of participating, feeling inferior. The lack of social inclusion for certain gender categories (men) poses a risk to the sustainability of the strategy and the ongoing management and conservation actions in the ANC. Mansourian et al., (2019) noted that more vulnerable groups in the community at East Usambra Mountain, particularly women and youth, need to be better targeted for the conservation activities. Addressing gender issues is crucial and requires focus to ensure equal opportunities for women, youth, and vulnerable groups in biodiversity management and conservation. This will promote economic inclusiveness and social welfare within natural resource management and socio-economic development.

1.6.2. Climate Change Issues

Like in the other parts of the country (URT, 2022b), climate change is no exception in the East Usambara Forests including the ANC. Climate has been highly variable and complex. According to Hamilton and Bensted-Smith (1989), in the East Usambara Forests there has been some

evidence of temperature increase from the mid-1970s and also an increase in the number of years with extreme rainfall especially very dry years since the 1960s. Since the mid-1970s there has been less sustained rainfall, decreased mistness and increased warmth. There has been a major decrease in the abundance of *Vascular epiphytes* around Amani linked with decreased atmospheric humidity (*ibid*). As a result there are noticeable changes in rainfall patterns, including increased dramatic shifts, increased uncertainty in the onset of the rain season, and an increase in the occurrence and severity of diseases, prolonged drought, and heavy rainfall (Kingazi et al., 2021). For example, according to farmers prolonged drought, heavy and prolonged rainfall, and a decline in soil fertility, combined with a decreasing government/development project focus on cardamom have led to the failure of cardamom and hence low/decline in production. Increasing intensity of rainfall increases the risk of soil erosion. It is claimed that prolonged drought has led to water scarcity in a major river and its tributaries (Zigi River). Zigi River is one of the major sources of water for the Tanga City (Njoghomi et al., 2022). Furthermore, in recent years, farmers in the area have faced significant challenges due to extreme climate events and increasing soil degradation. These issues have impacted timely crop planting and germination, increased crop pests and diseases, exacerbated soil erosion, and reduced soil fertility (Winowiecki et al., 2016; Tripath et al., 2020).

In response to climate change impacts, people in the area have embraced a range of mitigation and adaptation strategies. Mitigation efforts involve tree planting and the management and conservation of existing trees and forests. Furthermore, the significance of the East Usambara Forests in climate change mitigation is undeniable. They offer climate services by controlling atmospheric carbon dioxide levels, thus absorbing vast amounts of CO_2, which underscores their importance as carbon sinks (EAMCEF, 2021). As previously mentioned, these forests are estimated to contain 30.72 million tons of carbon dioxide (*ibid*). Adaptation actions according to farmers include adjustments to livelihood activities such as a shift from growing seasonal/annual crops to perennial crops, irrigation of crops, selling assets like cattle to purchase food due to crop failure, use of local knowledge to predict the onset of the rain season, practice CSA/conservation agriculture (zero tillage, terraces-fanya juu/fanya chini, ecological organic agriculture, use of compost manure). For instance, CSA, coupled with financial mechanisms such as loans and savings groups, community-based forestry, income-generating activities like beekeeping, butterfly farming, and tourism, as well as improved stoves, watershed conservation, and sanitation, have been integral to the IACCA, a climate change programme implemented in the area (Smith et al., 2021). However, making terraces and farm maintenance have been perceived by the local people to be labour intensive (*ibid*). Hamilton and Bensted-Smith (1989), reported that climate change in the area has also been linked to the alteration of the types of crops which can be grown at higher altitudes. Likewise, farmers revealed that prolonged drought has forced people to cultivate in the riverbeds and banks to continue crop production. Consequently, leading to the destruction of water sources and water pollution.

2.0. STRENGTH, WEAKNESS, OPPORTUNITIES, AND CHALLENGES (SWOC) ANALYSIS

The Strength, Weakness, Opportunities and Challenges (SWOC) analysis determines the internal and external factors that influence the implementation process of the ANC. The SWOC described in this section was derived from literature reviews conducted through desk work and stakeholders consultations via interviews and group discussions. It was further refined during stakeholders' validation workshop. The SWOC analysis has a significant impact in identifying strategies for effective implementation of the ANC. Table 2.1 outlines the SWOC.

Table 2.1: Strength, Weakness, Opportunities and Challenges (SWOC) analysis

Strengths	Weaknesses
• Long conservation history of the Amani – Nilo landscape makes a strong reason for continuing the conservation efforts • Concentration of high biodiversity values in ANC with endemism in flora and fauna • Mosaic nature of the landscape with people, farmland and forests • Existence of bylaws about sustainable forest, agriculture, forestry, water, and land management in the area • Availability of competent and well-qualified technical staff in various fields such as forestry, agriculture, wildlife and extension to support the corridor • Availability of VLUPs and VLFRs and their respective VLUMCs and VNRCs • Community willingness to accept conservation initiatives • Political will at the local level (district, ward and village) • Potential areas/rich for investment in eco-tourism • Existing agroforestry systems • Favourable climatic condition for the growth of crops (spices) and trees (indigenous and exotic) • Natural mountainous forest cover • Availability of the Amani-Nilo Corridor Working Group (ANCWG)	• Unconsolidated and uncommunicated research reports/ articles to inform policy makers and communities • Inadequate working facilities for VLUMs and VNRCs • Land scarcity (the increasing competition over land i.e agriculture versus conservation) • Inadequate of funds to support conservation initiative • Bylaws are being prepared/developed but are not effectively enforced/executed • Poor infrastructure such as roads • Lack of commitment for some community members linked to unsatisfactory/weak participation of communities in the development of plans in the landscape • Some villagers are not well knowledgeable on ANC including its boundaries, components and values • High donor dependent as the major sources of income to sustain the management and conservation of forest • Inadequate coordination of management and conservation initiatives/projects • Unsustainable agriculture practices and lack of viable alternatives • Lack of eco-tourism infrastructures in the corridor • Introduction of alien and invasive species which transform natural forests/trees into exotic forests/trees

• Availability of and ongoing initiatives/projects to support management and conservation of ANC • Long history of research on agricultural development, forest management and biodiversity, and more recently, climate change adaptation and climate-resilient development	• Weak existing agricultural cooperatives • Community dissatisfaction with the conservation benefit sharing (unequitable conservation benefit sharing)
Opportunities	**Challenges/Threats**
• Conducive climate for agriculture to support livelihoods • Existence of policies and legal frameworks about sustainable forest, agriculture, water, wildlife and land management in the country • Government commitment to support conservation • Willingness of various stakeholders to cooperate such as NGOs, CBOs, Government, Private Sector, Research and Academic Institutions • Development partner/donor community willingness to provide support and resources for the management and conservation of the corridor • Political will at the National Level • Opportunity for payment for ecosystem services for example biodiversity credits (Biocredits) • Opportunity for local and international markets for agricultural products including spices	• Undeveloped value chains for spice crops, food crops and eco-tourism (cultural, spice, photography) • Lack of access to affordable loans which push farmers to seek alternatives elsewhere (eg. using middlemen). • Unstable market for spice produce, affecting livelihoods • Inadequate budget by the district for natural resources management and conservation • Climate change impacts (eg. rainfall variability, prolonged drought) and extreme rainfall events • Increasing population lead to increased pressure on land and other resources • Conflicting policies forest conservation vs agriculture • Increased wildlife –associated damage to crops (human-wildlife conflict) • Banning of butterfly's trade in Tanzania in 2019 • Pests and diseases affecting spice production and yields • Contamination issues for organically produced spices, affecting farmers access to international markets (commonly require organic spices) • Lack of functioning facilities for drying and processing spices to keep high standards affects access to international markets

3.0. JUSTIFICATION AND APPROACH

3.1. Justification

Tanzania Forest Conservation Group (TFCG) is a national non-governmental organization established in 1985 which promotes innovative solutions to conserve Tanzania's high biodiversity forests in Tanzania. With financial support from USAID, TFCG is implementing a three years project entitled "Connecting Amani and Nilo (CAN) Forest" from November 2022 to October 2025. The goal of the project is to improve the management of the Amani-Nilo biodiversity corridor and increase stakeholder capacity to conserve biodiversity and sustainably manage natural resources. The project covers seven villages including Kwemdimu, Magoda, Shambangeda, Msasa IBC, Antakae, Kwezitu and Kizerui in the ANC in Muheza District, Tanga Region. During the project's first year, the Tanzania Forest Conservation Group (TFCG) successfully established the Amani-Nilo Corridor Working Group (ANCWG), charged with the management of the corridor. The ANCWG members include Tanga Regional Administrative Secretary, LGA- (MDC), TFS, Private Sector (Tea Estates), local communities (community leaders), CBOs (MJUMITA and UWAMAKIZI), NGOs such as TFCG, EAMCEF, WWF, Nature Tanzania, and Research Institution (TAFORI) and National Institute for Medical Research (NIMR). Nevertheless, the working group requires clear guidelines that will provide strategic direction for the conservation and management of the corridor over the next decade. This necessitates the development of the Amani – Nilo Corridor Conservation Strategy (ANCCS). Such information is crucial for enhancing the capacity of communities, including women and youth, to participate in sustainable livelihoods and to rehabilitate and preserve critical ecological connectivity points along the ANC. It also supports TFCG's mission to achieve positive outcomes for biodiversity and rural livelihoods in an effective, efficient, and sustainable manner. Apart from the requirements by the working group, this strategy (2024 - 2034) is created to reinforce collective landscape commitment by various stakeholders to encourage multi-stakeholder collaboration to protect, manage and conserve the ANC at the landscape level for socio-ecological, economic and cultural benefits. The ANCCS does not aim to usurp the ongoing intervention but to add value to what various stakeholders are already doing. The strategy intends to pay attention to the common issues that bring various stakeholders together at the ANC including protection, management and conservation.

3.2. Approach

The process of developing the ANCCS was consultative to ensure that the proposed strategy is demand-driven and meets the needs of the expected users. The stakeholders were consulted via Key Informant Interviews (KIIs) and Group Discussions (GDs). The consulted key stakeholders/users via KIIs (17) included communities (Ward councillor), LGA -MDC, TFS, NGOs, CBOs, Research Institutions and Universities and private sector/company (see Appendix 3). GDs (comprising 6-20 people) were performed for UWAMAKIZI-CBO (6) and in 4 villages (Kwezitu - 24, Magoda -20, Msasa IBC -8 and Shambangeda -14) and included villagers (women, men, youths, and VLUM and VNRC members). They were consulted to provide their inputs on the values, threats, strategies, gender and climate change issues, main stakeholders in the area, strengths, weaknesses, opportunities, challenges, commitment of LGA and TFS and past conservation initiatives. They were also consulted to propose on sustainability plan, resource

mobilisations, monitoring and evaluation plan. In addition to stakeholders' consultation a desk review was also conducted by reviewing and synthesising various literature related to the same issues as for consultations. The literature reviewed included books, journal articles, technical reports, strategies, workshop reports and CAN project documents. Furthermore, a two-day consultative and validation workshop was held on 23rd and 24th July 2024, at Dolphin Hotel in Tanga City, with 36 participants comprised of stakeholders who participated in the consultation as well as new ones who were not involved initially. The aim was to garner stakeholders (including communities) feedback and validate the strategy before finalising the draft for implementation. This workshop was attended by representatives from seven villages: Antakae, Kwezitu, Kizerui, Msasa IBC, Magoda, Kwemdimu and Shambangeda. Other attendees included officials from the Tanga Regional Administrative Secretary (Tanga-RAS), MDC, TFS (ANFR, NNFR and Muheza-Derema), Ward councillors from Misalai and Kwezitu, NGOs such as TFCG, Nature Tanzania, MJUMITA and Amani Friends of Nature-AFON, and CBO like UWAMAKIZI. Additionally, representatives from research institutions (TAFORI and NIMR), private companies (GFP and EUTCO), and a development partner (USAID) participated (see Appendix 4).

4.0. THE PLAN FOR 2024-2034

This plan outlines the Vision, Mission, Strategic Objectives and Targets which were initially formulated following consultation with the stakeholders through interviews and discussions. These elements were further refined and confirmed in a stakeholders consultative and validation workshop (see Section 3.2).

4.1. Vision

A well-managed Amani-Nilo Corridor (ANC) that sustainably provides vital ecosystem services and community livelihoods.

4.2. Mission

To provide effective and sustainable guidance for the management and conservation of the ANC through the promotion of best practices and technologies.

4.3. Objectives

4.3.1. General objective

To enhance the ecological, social and economic benefits of ANC for present and future generations.

4.3.2. Specific objectives (strategic objectives)

The strategic objectives are set out to achieve the general objectives and the associated mission and vision. These objectives, along with their strategies and targets, were defined by experts (consultants) based on literature reviews and stakeholder consultations through interviews and group discussions. The focus was mainly on the results of the SWOC analysis and other key issues such as policy context, gender and climate change, interventions in the ANC, values, and threats. The defined objectives were further refined during the consultative and validation workshop (see Section 3.2).

The specific objectives are:

viii. Enhanced stakeholders' coordination, capacity and engagement in the management of the ANC;
ix. Strengthened communities' capacity to conserve the threatened ecological connectivity points along the ANC;
x. Ensured sustainable management and conservation of the ANC;
xi. Improved community livelihood outcomes through a sustainable agricultural value chain in the ANC;
xii. Enhanced Government and Private sector engagement in the management of the ANC;
xiii. Strengthened stakeholders' capacity for addressing climate change in the ANC; and
xiv. Strengthened the management and conservation of water sources and riverbanks in the ANC.

4.4. Strategies and Targets

This strategy proposes strategic interventions and targets to address the strategic objectives.

Strategic Objective 1: Enhanced stakeholders' coordination, capacity and engagement in the management of the ANC.

Context: Stakeholders' coordination, capacity and engagement in forest management and conservation are prioritised in various strategies. For example, the Participatory Forest Management (PFM) framework under Joint Forest Management (JFM) and Community Based Forest Management (CBFM). The former fosters collaboration between the local community and government in forest management and the latter fosters the community own management of their forest resources (URT 1998; URT, 2002). Capacity building is also a key focus aiming to empower forest stakeholders' participation and cooperation at all levels, ensuring effective management and conservation of forests. Furthermore, stakeholders' engagements are emphasised and facilitated through various platforms and initiatives to promote integrated forest management and conservation (URT, 2021a).

Strategies:

- Identify and develop a centralized data base for all stakeholders and their core roles, interests and influence in the management of the ANC;
- Synthesise available knowledge and identify knowledge gaps in the ANC;
- Co-develop, implement and disseminate collaborative demand-driven research in the ANC;
- Establish ANC information sharing and exchange mechanism;
- Strengthen ANCWG to mobilise resources for the management and conservation of the ANC;
- Develop project proposals and solicit funds for the management and conservation of the ANC; and
- Enhance stakeholders' knowledge through capacity building on natural resources management in the ANC.

Targets:

- All stakeholders identified, analysed (interest, influence, relationship and activities)and a centralized data developed by June 2025;
- All stakeholders' Strategic Plans and Annual Plans of Operations (APOs) submitted to the ANCWG for review by June 2025;
- Information synthesised and knowledge gap identified by June 2025;
- Two prioritised demand-driven research to address the identified gaps conducted and disseminated by June 2034;
- One stakeholders' forum developed and organised per year for analysing and knowledge sharing in the management of the ANC by June 2034;
- Establishment Web site and Blogs for ANC by June 2026;
- Two training conducted to build capacity to mobilise resources by June 2034;
- Develop a resource mobilization strategy by June 2025;

- At least two projects developed and implemented by June 2034; and
- Two training on natural resource management conducted annually by June 2034.

Strategic Objective 2: Strengthened communities' capacity to conserve the threatened ecological connectivity points along the ANC.

Context: Strengthening the community's capacity to conserve the threatened ecological connectivity is key in Tanzanian policies (URT, 2009; URT, 2021a). The policies recognise that continued threatening ecological connectivity would result in loss of biodiversity, and ecosystem services and threatened community livelihoods (*ibid*).

Strategies:

- Enhance community awareness of the values and threats to ANC; and
- Promote capacity building on good governance from ward to village level in the ANC.

Targets:

- Two awareness campaigns conducted each per year by June 2034;
- At least 80% of the community members are aware of the values and threats to ANC by June 2034;
- One art group formed and performing by June 2034;
- One sports competition conducted every year by June, 2034;
- At least 80% of ward and village officials and committees are trained on good governance by June 2028; and
- At least 60% of villagers know the indicators of good governance by June 2028.

Strategic Objective 3: Ensured sustainable management and conservation of the ANC.

Context: According to MNRT (2022) forest habitat restoration, community forests, community engagement and alternatives livelihoods as key to sustainable forest management. For example National Forest Policy and Implementation Strategy of 2022 recognise the role of CBFM areas to enhance the contribution of CBFM in the sustainable supply of forest produce, employment opportunities, enhancing ecosystem stability if well implemented.

Strategies:

- Enhance effective implementation of Village Land use plans (VLUPs) and Village Land Forest Reserves (VLFR) in the ANC;
- Establish collaborative fire management plans and control in the ANC;
- Promote/enhance gender consideration in the management and conservation of the ANC;
- Promote alternative income-generating activities such as butterfly farming, VSLA, beekeeping, dairy farming and eco-tourism in the ANC;
- Develop and implement management plans and control for addressing invasive species in the ANC; and

- Develop a comprehensive longitudinal study on biodiversity and the socio-economic of the ANC.

Targets:

- All villagers in all villages adhered to VLUPs and VLFRs bylaws by June 2034;
- All VLFRs have developed Management Plans including Sustainable Harvesting Plans by June 2034;
- All villages are using VLUPs and Management Plans to make decisions by June 2034;
- Rate of forest loss reduced by 60% and forest resources improved by June 2034;
- Collaborative fire management plan and control established by June 2026;
- Rate of fire incidences reduced by 80% by June 2034;
- All villages in the ANC adhere to the fire management plans and control by June 2034;
- Develop and implement community awareness programmes on the role of gender in the conservation of ANC by June 2028;
- All Village Natural Resources and Village Land Use committees comprise of women and other vulnerable groups by June 2028;
- All management and conservation projects in the ANC comprised of women and other vulnerable groups by June 2034;
- 60% of villagers are involved in alterative income-generating activities
- The government convinced to allow butterfly farming by June 2026;
- At least 20% of villagers are involved in butterfly farming by June 2034;
- At least 60% of villagers are involved in VSLA June 2034;
- At least 50% of villagers are involved in dairy farming by June 2034;
- At least 20% of villagers are involved in beekeeping by June 2034;
- All eco-tourism opportunities are identified and promoted by June 2028;
- One eco-tourism strategy developed and implemented by June 2028;
- At least 20% of villagers are involved in eco-tourism by June 2034;
- All invasive species identified and their status established by June 2028;
- Management plans and control for invasive species developed and implemented by June 2028;
- At least 60% of stakeholders are aware of various invasive species management options by June 2034;
- At least 60% of stakeholders participated in managing invasive species by June 2034;
- Incidences of invasive species reduced by 60% by June 2034;
- Two biodiversity and the socio–economic current and future status (socio-ecological connectivity) formulated and implemented by June 2034.

Strategic Objective 4: Improved community livelihood outcomes through a sustainable agricultural value chain in the ANC.

Context: The National Agriculture Policy of 2013, revolves around the goals of developing an efficient, competitive and profitable agricultural industry that contributes to the improvement of the livelihoods. The government is committed to bringing about a green revolution that entails the

transformation of agriculture from subsistence farming towards commercialization and modernisation through crop intensification, diversification, technological advancement and infrastructural development (URT, 2013). The policy recognises the role of improving the value chain for the livelihoods of farmers. Further, the policy spots the importance of using Information and Communication Technologies (ICTs) to improve for improving efficiency in agricultural value chains.

Strategies:

- Establish value chain for crops in the ANC;
- Identify and adopt appropriate technologies for agricultural production in the ANC;
- Establish and train farmers on appropriate technologies for harvesting, storage, processing and packaging in the ANC;
- Develop and coordinate crop market information system in the ANC;
- Establish price, market/sales centres and improve road infrastructure in the ANC;
- Establish new and strengthen existing farmers association in the ANC; and
- Identify and register crop producers, processors and sellers in the ANC.

Targets:

- At least 80% of crops value chain established by June 2034;
- At least 80% of farmers are aware of the value chains by June 2034;
- Average production of crops increased by 80% by June 2034;
- Efficiency use of land for crop farming increased by 80% by June 2034;
- All appropriate technologies for harvesting, storage, processing and packaging are identified and documented by June 2029;
- At least 80% of farmers are trained on appropriate technologies for harvesting, storage, processing and packaging by June 2034;
- At least one application to link producers and buyers created by June 2028
- One market information web portal created and linked with other relevant websites by June 2028;
- Price and 4 market centres established by June 2034;
- At least 80% of the road network improved by June 2034;
- One farmer association established covering all villages by June 2026;
- One existing farmer association strengthened by June 2026; and
- At least 80% of crop producers, processors and sellers registered in all villages by June 2034.

Strategic Objective 5: Enhanced Government and Private sector engagement in the management of the ANC.

Context: The government encourages collaboration on the so-called public-private partnership. For example, the government promotes Public-Private Partnership in CBFM areas in that the government is in collaboration with development partners in forest management and conservation (URT, 2022b).

Strategies:

- Supporting the Government and Private sector prioritisation in conservation and management activities in the ANC; and
- Identify and implement links between Government and Private sector in the ANC.

Targets:

- Convince the Government and Private sector for conservation initiatives become one of the priorities in their strategic plan by June 2034; and
- At least 10 links identified and implemented by June 2034.

Strategic Objective 6: Strengthened stakeholders' capacity for addressing climate change in the ANC.

Context: Climate change poses an increasing threat to the forests and biodiversity of Tanzania (URT, 2022b). There is a growing recognition that urgent mitigation and adaptations actions are necessary (URT, 2021b; URT, 2022b). Policy interventions in Tanzania to address climate change have focused on capacity building on climate change issues, enhancing the resilience of forest biodiversity, and improving governance, operations and financial management. Training in vulnerability assessment and integrating climate adaptation into land use practices (such as CSA) and policies are key components of this effort (URT, 2021b). The CBFM Action Plan outlines initiatives for adaptation and mitigation of climate change effects at the community level and contributes to broadening sinks for greenhouse gases and combating desertification (MNRT, 2022). The role of local communities is to adopt and promote agroforestry and CSA as a means to mitigate and adapt to climate change (MNRT, 2022).

Strategies:

- Develop and implement continuous programmes for raising community awareness of climate change issues in the ANC;
- Train farmers on appropriate CSA in the ANC;
- Train the communities on appropriate climate- smart forestry in the ANC; and
- Establish indigenous/local and modern climate change alert systems (early warning systems) in the ANC.

Targets:

- Five programmes for raising community awareness of climate change issues developed and implemented by June 2034;
- At least 80% of farmers are trained and practising CSA by June 2034;
- All village natural resource committees are trained on CSF by June 2028;
- At least 80% of villagers are trained on CSF by June 2034; and
- At least 2 climate change alert systems are in place by June 2028.

Strategic Objective 7: Strengthened the management and conservation of water sources and riverbanks in the ANC.

Context: One of the key objectives of the National CBFM Action Plan of 2022 is to enhance the stability of forest ecosystems by conserving forest biodiversity, water catchments, and soil fertility (URT, 2022b). Additionally, the National Forest Implementation Strategy of 2021 identifies Nature Forest Reserves (NFRs) as areas managed for biodiversity and water conservation and acknowledges the importance of local community involvement in their management (URT, 2021a). The Land Use Planning Act of 2007 acknowledges land allocation for various uses, including water sources, and establishes buffer zones to safeguard water catchment areas, rivers, dams, and riverbanks (URT, 2007).

Strategies:

- Train communities on the management and conservation of water sources and riverbanks in the ANC
- Establish the status of water sources and riverbanks in the ANC
- Develop and implement integrated community-based water management plans and bylaws for the management and conservation of water sources and riverbanks in the ANC.

Targets:

- One campaign on sustainable management and conservation of riverbanks conducted annually by June 2034;
- At least 60% of villagers are engaged in management and conservation practices by June 2034;
- At least 80% of water sources and riverbanks are identified, demarcated and their status established by June 2028;
- At least 50% of identified water sources and riverbanks are monitored and restored by June 2034;
- At least 10 management plans and associated bylaws developed and implemented by June 2034;
- Water sources and riverbanks destructed by human activities reduced by 80% by June, 2034;
- At least 80% of villagers are engaged in management and conservation practices of water sources and riverbanks by June 2034; and
- At least 60% of villagers comply with the management plan and bylaws by June 2034.

4.5. A Logframe for Implementation Strategy

A logframe for implementing the strategy is presented in Appendix 1. It defines objectives, strategies, indicators, means of verification and responsible institution. The logframe is an important component of the strategy to facilitate monitoring and evaluation.

5.0. SUSTAINABILITY PLAN AND PERCEIVED RISKS

5.1. Sustainability Plan

The sustainable management of ANC lays behind the following facts about the ANC management in the next ten years of implementing the ANCCS

5.1.1 Prioritization of local community needs and aspirations

It is an undisputed truth that sustainable conservation cannot be achieved at the expense of the community's lives. Conservation efforts should prioritise and address the diverse needs and aspirations of the local people before diving deep into conservation activities. It is crucial to seek a balance of conservation and livelihood, especially in the East Usambara where agriculture is the mainstay of the people in the area. Developing a strategy that enhances the value chain for local agricultural products, including food commercial crops by improving market access and transportation infrastructure, will contribute to the sustainability of conservation efforts.

5.1.2 Gender equality and strong community' conservation will

Taking men and women and other community groups such as youth, elders, people with disabilities and other minorities on-board in the management of the ANC is so key to its sustainability. The conservation knowledge structure abiding by the individual group in the community will ensure the sustainability of the management of the ANC. Also, a consultative approach for the development of the ANCCS indicated a sense of ownership and hence "Conservation will" from the various stakeholders (village communities to the district and regional levels). The strong conservation will is culturally rooted and that has been raised through continued awareness creation and education among community leaders and members is a strong tower for the sustainability and the management of the ANC.

5.1.3 Motivated ANCWG and other stakeholders within the ANC

The presence of the vision, mission and objectives of the formulated ANCWG is an asset in the sustainable management of the ANC. The stakeholders' interests, capacity and long experience are essential to ensure the sustainability of the ANC management. Furthermore, the motivation of stakeholders can be positively influenced by their involvement in various activities of strategy implementation, notably monitoring and evaluation. Participatory monitoring and evaluation build capacity and create a sense of ownership, which in turn enhances stakeholder motivation and the sustainability of the strategy (Holte-McKenzie et al., 2016; Mgoba and Kabote, 2020).

5.1.4 Taking onboard and supporting the LGAs in the management of ANC

Local Government Authorities (LGAs) are well equipped with manpower, policy and other infrastructures that can support conservation sustainably. However, it is an undisputed truth that conservation activities are not the priorities for most of these LGAs at the District level. However, the developed ANCCS will ensure that conservation is given priority and due weight at the respective LGA which will make the management of the ANC strategy sustainable.

5.1.5 Taking the private sector on-board

The private sector is so key in taking further conservation initiatives across the ANC. The eco-tourism potentials, spice production and carbon business potentials across the ANC can bring massive positive socio-economic transformation to the ANC via investment through the private sector (with financial power). Eco-tourism in ANC features cultural tourism, spice tourism, landscape and bird watching and photographing tends to avail massive benefits that will foster conservation across the ANC. Local tour guides in the ANC can also provide important insights into the reality of these ventures, including the challenges they are facing which are crucial for the development of the tourism sector. However, these potentials may also cause unintended negative impacts on biodiversity, and exacerbate socio-economic inequalities. Thus, to make the ANCCS sustainable there must be well-planned interventions that are inclusive and balance conservation and livelihoods.

5.1.6 Co-developing impact-oriented and communicating research

There is a long conservation history and stock of information across ANC that has been developed through research and communities' implementation of conservation initiatives. However, there have been inadequate platforms for co-developing impact-oriented research and sharing the vast knowledge and experiences on socio-economic, ecological and cultural among researchers, academicians, conservationists and other stakeholders. The plan to communicate and expose the hidden wealth of conservation information is crucial to develop inclusive sustainable landscape initiatives and is expected to impact the sustainability of the ANC management. In addition, an adaptive management circle enriched by longitudinal research across ANC is essential for making this plan sustainable.

5.1.7 Collaboration with cross-sectoral policies

The strategy will be guided by various internal and international policies and legal frameworks. Successful and sustainable implementation will require close collaboration with cross-sectoral policies and legal frameworks (see section 1.5).

5.2 Risk Analysis and Assumptions

Risks refers to the chance that someone or something of value will be adversely affected by a hazard. A "hazard" is any unsafe condition or potential source of an undesirable event with the potential for harm or damage (Marhavilas et al., 2011). The risks outlined in this strategy were identified through a qualitative approach, which included literature analysis, interviews, and consultations with various stakeholders (*ibid*). In the implementation of the strategy the following risks are foreseen; change in political will to support the strategy which could be linked to change in leadership. There is also a risk of conflict between farmers versus conservationists, and farmers versus private companies (e.g. spice companies/investors, tea companies who own more than 5,000 ha). The farmers versus tea company conflict has existed for many years and relates to historical legacies in the landscape. Many farmers blame tea companies for environmental degradation, such as planting Eucalyptus trees and occupying large areas, while land is scarcity for farming. If blame continues to be increasingly placed on their shoulders without acknowledging the environmental degradation caused by others, it creates a greater potential for conflict. Climate

change and variability, invasive species (e.g. *Maesopsis eminii, Lantana camara*), food insecurity and wildlife–associated damage to crops are also some important risks to consider. For example, food security and exposure to vagaries of regional and international markets due to farmers shifting from food-based crops to spice production. The rapid pace of technological advancement, resulting in increasingly sophisticated technologies such as Machine Learning, Artificial Intelligence, and Deep Learning, must be considered and take actions to formulate strategies to address these advancements as linked to the management and conservation of forests. Additionally, with the growing focus on conservation initiatives in the area, there is a potential risk of inadequate compensation payments due to conservation investments. This risk is associated with land scarcity, which causes land values to appreciate more rapidly. Table 5.1 indicates risks and their potential impacts and likelihood.

Table 5.1: Risks and their potential impact and likelihood of happening

S/N	Risk	Impact	Likelihood
1.	Change in stakeholders willingness to cooperate and participate (-ve)	medium	medium
2.	Climate change and variability	high	high
3.	Changes in economic conditions (economic crises) negatively affect the flow of funds	medium	medium
4.	Change in political will and supportive policies (-ve)	high	low
5.	Conflict between farmers versus conservationists over land and land use due to land scarcity	medium	low
6.	Conflict between farmers versus the tea company/and other private companies/investors	medium	medium
7.	High rate of technological advancement, leading to more sophisticated conservation technologies	medium	medium
8.	Increased invasive species (e.g. tree species)	high	medium
9.	Increase in numbers of people impacted by / reporting damage due to increase in wild animals	high	high
10.	Insufficient compensation payment due to conservation investment	medium	medium

Besides the risks, the successful implementation of this strategy will largely be dependent on the following key assumptions;

i) **Effective Coordination and Cooperation:** The ability of various stakeholders, including government agencies, NGOs, CBOs, private sector, development partners and local communities, to effectively coordinate and communicate. Equally important is the stakeholders' willingness of the stakeholders to cooperate and engage in the strategy's implementation;

ii) **Climate Change Impacts**: The strategy's ability to adapt to unforeseen impacts of climate change beyond acute droughts, such as severe storms or flooding;

iii) **Market Stability**: Stability in local and global markets that could affect the economic aspects of the strategy, such as funding and livelihood programmes;

iv) **Political Stability and Policy Continuity**: No important national and local political conflicts arise affecting the implementation of the strategy's activities. National elections in 2025 and 2030 will be conducted without major affection for the implementation of the strategy's activities. Likewise, a continuation of supportive policies and regulations that align with the strategy's goals, without major policy reversals or changes;

v) **Environmental Health**: No occurrence of environmental disasters, such as significant pest outbreaks or diseases affecting key species in the ANC;

vi) **Technological Resources**: Availability and access to necessary technological resources and innovations required for monitoring and implementing the strategy; and

vii) **Social Stability**: Maintenance of social stability and minimal occurrence of social conflicts within communities involved in the strategy.

6.0. SUSTAINABLE FINANCING AND RESOURCE MOBILISATION PLAN

6.1. Sustainable Financing

The successful implementation ANCCS will require sufficient funding and is contingent upon the availability of sustainable 10-year funding mechanisms from both internal and external sources. As proposed by the consultants and agreed upon during the validation workshop the ANCWG members will strategically collaborate with internal and external conservation stakeholders to gather funds to address inadequate budgetary allocation from the Government especially the MDC for the management and conservation of natural resources. The following are the strategies to achieve sustainable financing for the implementation of the strategy.

i. **Multi-Source Funding:** Leverage multiple sources of funding, including government allocations, international grants from development partners, private sector investments, and community contributions;
ii. **Long-Term Financial Planning:** Develop a long-term financial plan to ensure sustainable funding over the 10-year; and
iii. **Public-Private Partnerships:** Establish partnerships with private sector entities to attract investment and support for management and conservation efforts.

6.2. Resource Mobilisation

Resource mobilisation involves securing new and additional resources for a particular activity/project/organisation and making better use of, and maximizing, existing resources. The key resources needed to implement the ANCCS are material, human and financial resources. In this context, the MDC, ANCWG, and other conservation stakeholders will mobilize significant financial and technical resources to implement this strategy. The ANCWG members will annually prioritise the strategic objectives and actions and allocate technical resources and budgets for implementation. The MDC and ANCWG will mobilize and build on existing financial and technical opportunities, including ongoing programmes and projects, to secure additional funds to support the implementation of this Strategy. The strategies outlined below are not only essential for securing funds but also serve as prerequisites for supporting human needs and securing materials. In addition to these initial strategies, it is suggested that a 10-year resource mobilization strategy be developed by June 2025.

6.2.1 Muheza District Council Budget

Government subvention via the MDC continues to be a crucial financial source, supporting the partial implementation of the strategy.Budgetary allocations to support the strategy can be through sectoral integration by ensuring that management and conservation activities are integrated into the development plans of all relevant sectors. Conducting regular audits is also key to ensure transparency and accountability in the use of allocated funds.

6.2.2 Developing proposals to secure funds from development partners

Global funds from development partners can contribute to the implementation of the ANCCS. The stakeholders in the ANC shall develop proposals and seek funds for conservation development

partners (for example, the Global Environmental Facility (GEF), Green Climate Fund (GCF), USAID and others. Strengthen international collaboration to increase access to global funding opportunities (for example UNDP in collaboration with TFS has developed and submitted a proposal to GEF. Further building collaboration, co-developing and seeking impact-oriented research funding / embedding research in the strategy could attract funds for research and development projects from international donors. There is an opportunity to explore innovative financing mechanisms such as biodiversity credits (biocredits) - which are a way to finance biodiversity improvements (Porras and Steele, 2020).

6.2.3 Developing proposals to secure funds from internal funding organisations

Through internal funding organisations, the ANC stakeholder shall develop proposals and seek internal funding organisations such as Tanzania Forest Fund (TaFF), EAMCEF and CRDB bank under the United Nations Green Climate Fund (GCF). TaFF supports development and research projects across Tanzania. EAMCEF supports development and research projects within the Eastern Arch Mountain Blocks. The CRDB GCF also known as Kijani/Green Bonds: A green investment opportunity for all targets all parts of the country. Green bonds are financial instruments that governments, financial institutions, companies, and other entities issue to investors, with a commitment to pay a specified rate of interest and to return the principal and interest as per the agreed conditions (Tang and Zhang, 2020). To secure these funding opportunities, it is crucial to i) establish robust partnerships with local funding organizations and businesses (local partnerships), and ii) enhance capacity building by offering training in competitive proposal writing and fundraising to local stakeholders.

6.2.4 Establish internal payment for ecosystem services scheme

Establishing a payment for ecosystem services scheme such as Equitable Payment for Water Services (EPWS) with the internal organisations benefiting from the existence of ANC could be an important source of funds. EPWS entails that beneficiaries, acknowledged as buyers of environmental/ecosystem services, should compensate or reward those who contribute to or provide/conserve these services (in this context water service) (Kwayu et al., 2014). The successful implementation of this scheme requires engaging all potential beneficiaries in the design and implementation phases (stakeholder engagement). For stance, Tanga – Uwasa as a beneficiary of water services, should participate in a dialogue to support the ANC. Moreover, it is crucial to ensure transparency in the collection and distribution of funds (a transparent mechanism).

6.2.5 Local community’s contributions from the revenue obtained from VLFRs

Local communities through VLFRs can partially fund the strategy’s activities using their internal financial resources. This may involve diversifying revenue sources to encompass fines (enforced through bylaws breaches), eco-tourism, sustainable harvesting (sale of forest products), biocredits scheme, and research and educational programmes. Additionally, there is the potential to reinvest a portion of the revenue back into conservation activities to ensure sustainability.

7.0. MONITORING, EVALUATION AND COMMUNICATING THE STRATEGIC PLAN

7.1 Monitoring and Reporting

To enhance transparency, accountability, capacity building and a sense of ownership, thereby ensuring the sustainability of the strategy, monitoring will be conducted using a participatory approach (Holte-McKenzie et al., 2016; Mgoba and Kabote, 2020; Kibukho, 2021). All objective strategies will be monitored and reported annually based on their indicators. The ANC stakeholders will be involved in the monitoring exercise supervised by ANCWG (through the chairperson). Data collection will utilize modern technologies such as mobile applications (eg. SurveyCTO Collect, ODK Collect, KoboCollect, Magpi) and Geographical Information System (GIS) to facilitate real-time data collection and reporting. Training and involving local community members in the monitoring process will build local capacity and ensure comprehensive data collection. It is necessary to establish a feedback mechanism to ensure that insights from monitoring are promptly addressed and integrated into ongoing activities.

7.2 Evaluation

Similar to monitoring, evaluation will be done in a participatory approach. The ANCWG (which is comprised of various stakeholders including the local community) and other stakeholders will evaluate the strategy during a mid-term review at the middle of the strategy's implementation in 2029 and a final evaluation at the end of the implementation period in 2034. In addition to the mid-term and final evaluations, will conduct periodic reviews every two years to assess progress and make necessary adjustments. This periodic reviews is envisaged to be more proactive in measuring the performance of the strategy and suggest immediate actions. The team will evaluate the achievements in terms of effectiveness, efficiency, sustainability, outcomes and impacts. Data collection will involve the use of both qualitative and quantitative methods to provide a comprehensive evaluation of the strategy's impact. Provide training for local stakeholders on evaluation methods to build local expertise and enhance the credibility of the evaluation process.

7.3 Communication

The monitoring and evaluation reports will be presented and shared with the stakeholders for scrutiny and advice. Essential considerations for effectively communicating the reports include:

i. **Communication Strategy:** Develop a comprehensive communication strategy that includes regular updates, newsletters, and press releases to keep all stakeholders informed;
ii. **Stakeholder Workshops:** Organize regular workshops and seminars to discuss progress, challenges, and successes with stakeholders;
iii. **Digital Platforms:** Utilize digital platforms such as social media, websites, and email newsletters to disseminate information widely and engage with a broader audience; and
iv. **Transparency and Accessibility:** Ensure all communication materials are accessible to all stakeholders, including those with disabilities, and available in multiple languages as needed.

Appendix 1: Implementation Strategy (Action Plan)

S/No	Strategic Objectives	Strategies	Targets	Indicators	Means of verification	Responsible institution/actor
1.	Enhanced stakeholders' coordination, capacity and engagement in the management of the ANC	• Identify and develop a centralized data base for all stakeholders and their core roles, interests and influence in the management of the ANC	• All stakeholders identified, analysed (interest, influence, relationship and activities) and a centralized data developed by June 2025 • All stakeholders' Strategic Plans and Annual Plans of Operations (APOs) submitted to the ANCWG for review by June 2025	• Number of stakeholders identified and analysed • Presence of a centralised stakeholders' database • Presence of Strategic plans and APOs • Number of stakeholders using the database	• Quarterly, Semi-annual and annual reports • Research reports	• Government (Ministries, Departments, Regional Administration and Local Government) • Research and Academic Institutions • Civil Society Organisations-CSOs (NGOs, CBOs and FBOs)
		• Synthesise available knowledge and identify knowledge gaps in the ANC	• Information synthesised and knowledge gap identified by June 2025	• Presence of synthesis and knowledge gap report • Type of information synthesised • List knowledge gaps identified	• Research reports	• Research and Academic Institutions • CSOs • Development Partners
		• Co-develop, implement and disseminate collaborative demand-driven research in the ANC	• Two prioritised demand-driven research to address the identified gaps conducted and disseminated by June 2034	• Number of research prioritised • Number of research conducted and disseminated	• Quarterly, Semi-annual and annual reports • Research reports	• Research and Academic Institutions • CSOs • Development Partners

S/No	Strategic Objectives	Strategies	Targets	Indicators	Means of verification	Responsible institution/actor
		• Establish ANC information sharing and exchange mechanism	• One stakeholders' forum developed and organised per year for analysing and knowledge sharing in the management of the ANC by June 2034 • Establishment Web site and Blogs for ANC by June 2026	• Number of fora/workshops organised • Type of information shared and exchanged • Number of participants • Presence of website and blogs • Number of people accessing the website and blogs	• Quarterly, Semi-annual and annual reports	• Government • CSOs • Development Partners • Private Sector
		• Strengthen ANCWG to mobilise resources for the management and conservation of the ANC	• Two training conducted to build capacity to mobilise resources by June 2034 • Develop a resource mobilization strategy by June 2025	• Number of training conducted • Number of participants • Resource mobilisation strategy in place • Change in the ability of ANCWG to mobilise resources	• Quarterly, Semi-annual and annual reports	• Government • Research and Academic Institutions • CSOs • Development Partners • Private Sector
		• Develop project proposals and solicit funds for the management and conservation of the ANC	• At least two projects developed and implemented by June 2034	• Number of project proposals developed • Amount of funds secured • Number of projects implemented	• Quarterly, Semi-annual and annual reports • Research reports	• Government • Research and Academic Institutions • CSOs • Development Partners • Private Sector

S/No	Strategic Objectives	Strategies	Targets	Indicators	Means of verification	Responsible institution/actor
		• Enhance stakeholders' knowledge through capacity building on natural resources management in the ANC	• Two training on natural resource management conducted annually by June 2034	• Number of training conducted • Percentage of stakeholders trained • Change in stakeholders knowledge	• Quarterly, Semi-annual and annual reports • Research reports	• Government • Research and Academic Institutions • CSO • Development Partners • Private Sector
2.	Strengthened communities' capacity to conserve the threatened ecological connectivity points along the ANC	• Enhance community awareness of the values and threats to ANC	• Two awareness campaigns conducted each per year by June 2034 • At least 80% of the community members are aware on the values and threats to ANC by June 2034 • One art group formed and performing by June 2034 • One sports competition conducted every year by June, 2034	• Number of awareness campaigns conducted • Percentage of community members aware • Change in the status of values and threats	• Quarterly, Semi-annual and annual reports • Research reports	• Government • Research and Academic Institutions • CSO • Development Partners • Private Sector
		• Promote capacity building on good governance from ward to village level in the ANC	• At least 80% of ward and village officials and committees are trained on good governance by June 2028 • At least 60% of villagers know the indicators of good governance by June 2028	• Number of training conducted • Number of official and committee members trained • Percentage of villagers agreeing that the officials are practising good governance	• Quarterly, Semi-annual and annual reports • Research reports	• Government Ministries, Departments and LGAs • Research and Academic Institutions • CSOs

S/No	Strategic Objectives	Strategies	Targets	Indicators	Means of verification	Responsible institution/actor
				• Percentage of villagers agreeing that the officials are practising good governance • Changes in communities' capacity to conserve the threatened ecological connectivity • Number of villagers engaging in development and conservation activities		• Development Partners • Private Sector
3.	Ensured sustainable management and conservation of the ANC	• Enhance effective implementation of Village Land use plans (VLUPs) and Village Land Forest Reserves (VLFR) in the ANC	• All villagers in all villages adhered to VLUPs and VLFRs bylaws by June 2034 • All VLFRs have developed Management Plans including Sustainable Harvesting Plans by June 2034 • All villages are using VLUPs and Management Plans to make decisions by June 2034 • Rate of forest loss reduced by 60% and forest resources improved by June 2034	• Number of villagers and villages adhered to VLUPs and VNRC • Number of villages using VLUPs and Management Plans to make decisions • Percentage of forest loss • Change in the status of forest resources	• Quarterly, Semi-annual and annual reports • Research reports	• Government • Research and Academic Institutions • CSOs • Development Partners • Private Sector

S/No	Strategic Objectives	Strategies	Targets	Indicators	Means of verification	Responsible institution/actor
		• Establish collaborative fire management plans and control in the ANC	• Collaborative fire management plan and control established by June 2026 • Rate of fire incidences reduced by 80% by June 2034 • All villages in the ANC adhere to the fire management plans and control by June 2034	• Collaborative fire management plan and control in place • Rate of fire incidences • Number of villages adhered to the management plan • Number of villages using the fire management plan to make decisions	• Quarterly, Semi-annual and annual reports • Research reports	• Government • Research and Academic Institutions • CSOs FBOs) • Development Partners • Private Sector
		• Promote/enhance gender consideration in the management and conservation of the ANC	• Develop and implement community awareness programmes on the role of gender in the conservation of ANC by June 2028 • All Village Natural Resource and Village Land Use committees comprise of women and other vulnerable groups by June 2028 • All management and conservation projects in the ANC comprised of women and other vulnerable groups by June 2034	• Number of community awareness programmes on gender • Number of committees with gender consideration • Number of projects/programmes with gender consideration • Rate of gender consideration	• Quarterly, Semi-annual and annual reports • Research reports	• Government • Research and Academic Institutions • CSOs • Development Partners • Private Sector
		• Promote alternative income-generating activities such as	• 60% of villagers are involved in alterative income-generating activities	• Number of alternative income-generating activities established	• Quarterly, Semi-annual	• Government

S/No	Strategic Objectives	Strategies	Targets	Indicators	Means of verification	Responsible institution/actor
		butterfly farming, VSLA, beekeeping, dairy farming and eco-tourism in the ANC	• The government convinced to allow butterfly farming by June 2026 • At least 20% of villagers are involved in butterfly farming by June 2034 • At least 60% of villagers are involved in VSLA June 2034 • At least 50% of villagers are involved in dairy farming by June 2034 • At least 20% of villagers are involved in beekeeping by June 2034 • All eco-tourism opportunities are identified and promoted by June 2028 • One eco-tourism strategy developed and implemented by June 2028 • At least 20% of villagers are involved in eco-tourism by June 2034	• Number of farmers involved in income-generating activities • Number of butterfly farming in place • Number of farmers participating in butterfly farming • Number of VSLA groups established • Number of villagers involved in VSLA • Number of villagers involved in dairy farming • Number of villagers involved in beekeeping • Number of eco-tourism opportunities • Number of promotional materials produced • Number of people involved in tourist activities • Eco-tourism strategy in place and used by stakeholders	and annual reports • Research reports	• Research and Academic Institutions • CSOs • Development Partners • Private Sector

S/No	Strategic Objectives	Strategies	Targets	Indicators	Means of verification	Responsible institution/actor
				• Changes in villagers income and livelihood activities		
		• Develop and implement management plans and control for addressing invasive species in the ANC	• All invasive species identified and their status established by June 2028 • Management plans and control for invasive species developed and implemented by June 2028 • At least 60% of stakeholders are aware of various invasive species management options by June 2034 • At least 60% of stakeholders participated in managing invasive species by June 2034 • Incidences of invasive species reduced by 60% by June 2034	• Number of invasive species identified • Percentage of stakeholders aware of invasive species and management options • Number of stakeholders engage in the management of invasive species • Number of management plans developed and implemented • Changes in the status of invasive species • Extent of spread of invasive species	• Quarterly, Semi-annual and annual reports • Research reports	• Government • Research and Academic Institutions • CSOs • Development Partners • Private Sector
		• Develop a comprehensive longitudinal study on biodiversity and socio-economic of the ANC	• Two biodiversity and socio – economic current and future status (socio- ecological connectivity) formulated and implemented by June 2034	• Number of studies carried out • Type of information generated • Status of biodiversity and socio-economic	• Quarterly, Semi-annual and annual reports • Research reports	• Government • Research and Academic Institutions • CSOs • Development Partners • Private sector

S/No	Strategic Objectives	Strategies	Targets	Indicators	Means of verification	Responsible institution/actor
4.	Improved community livelihood outcomes through sustainable agricultural value chain in the ANC	• Establish value chain for crops in the ANC	• At least 80% of crops value chain established by June 2034 • At least 80% of farmers are aware of the value chains by June 2034	• Number of value chains established • Number of farmers aware of and benefiting from the value chains	• Quarterly, Semi-annual and annual reports • Research reports	• Government • Research and Academic Institutions • CSOs • Development Partners Private Sector
		• Identify and adopt appropriate technologies for agricultural production in the ANC	• Average production of crops increased by 80% by June 2034 • Efficiency use of land for crop farming increased by 80% by June 2034	• Amount of crops in kilograms/tons produced per year • Number of farmers use their land for crop farming efficiently	• Quarterly, Semi-annual and annual reports • Research reports	• Government • Research and Academic Institutions • CSOs • Development Partners • Private Sector
		• Establish and train farmers on appropriate technologies for harvesting, storage, processing and packaging in the ANC	• All appropriate technologies for harvesting, storage, processing and packaging are identified and documented by June 2029 • At least 80% of farmers are trained on appropriate technologies for harvesting, storage, processing and packaging by June 2034	• Number of appropriate technologies identified and documented • Number of farmers trained • Number of farmers knowledgeable and using the technologies	• Quarterly, Semi-annual and annual reports • Research reports	• Government • Research and Academic Institutions • CSOs • Development Partners • Private Sector
		• Develop and coordinate crops	• At least one application to link producers and buyers created by June 2028	• Number of application created	• Quarterly, Semi-annual	• Government

S/No	Strategic Objectives	Strategies	Targets	Indicators	Means of verification	Responsible institution/actor
		market information system in the ANC	• One market information web portal created and linked with other relevant websites by June 2028	• Number of web portal created • Number of farmers accessing the applications and web portal	and annual reports • Research reports	• Research and Academic Institutions • CSOs • Development Partners • Private Sector
		• Establish price, market/sales centres and improve road infrastructure in the ANC	• Price and 4 market centres established by June 2034 • At least 80% of the road network improved by June 2034	• Market price in place • Number of selling centres in the district • Percentage of farmers using/access the price information and centres • Percentage of the road network	• Quarterly, Semi-annual and annual reports • Research reports	• Government • Research and Academic Institutions • CSOs • Development Partners • Private Sector
		• Establish new and strengthen existing farmers association in the ANC	• One farmer association established covering all villages by June 2026 • One existing farmer association strengthened by June 2026	• Number of farmers associations • Percentage of farmers registered and using the associations • Change in the status of farmers associations	• Quarterly, Semi-annual and annual reports • Research reports	• Government • Research and Academic Institutions • CSOs • Development Partners • Private Sector
		• Identify and register crops producers, processors and sellers in the ANC	• At least 80% of crop producers, processors and sellers registered in all villages by June 2034	• Numbers of producers, processors and sellers registered • Number of villagers/ stakeholders use the	• Quarterly, Semi-annual and annual reports	• Government • Research and Academic Institutions

S/No	Strategic Objectives	Strategies	Targets	Indicators	Means of verification	Responsible institution/actor
				database to make decisions	• Research reports	• CSOs • Development Partners • Private Sector
5.	Enhanced Government and Private sector engagement in the management of the ANC	• Supporting the Government and Private sector prioritisation in conservation and management activities in the ANC	• Convince the Government and Private sector for conservation initiatives become one of the priorities in their strategic plan by June 2034	• Government and Private sector prioritise conservation initiatives in their development strategic plans • Number of conservation initiatives become one of the priorities	• Quarterly, Semi-annual and annual reports • Research reports	• Government • Research and Academic Institutions • CSOs • Development Partners • Private Sector
		• Identify and implement links between Government and Private sector in the ANC	• At least 10 links identified and implemented by June 2034	• Number of links identified and implemented • Type of links • Number of government and private sector in the links	• Quarterly, Semi-annual and annual reports	• Government • Research and Academic Institutions • CSOs • Development Partners • Private Sector
6.	Strengthened stakeholders' capacity for addressing climate change in the ANC	• Develop and implement continuous programmes for raising community awareness of climate change issues in the ANC	• Five programmes for raising community awareness of climate change issues developed and implemented by June 2034	• Number of climate change awareness programmes • Number of farmers aware on climate change issues	• Quarterly, Semi-annual and annual reports • Research reports	• Government • Research and Academic Institutions • CSOs • Development Partners • Private Sector

S/No	Strategic Objectives	Strategies	Targets	Indicators	Means of verification	Responsible institution/actor
		• Train farmers on appropriate CSA in the ANC	• At least 80% of farmers are trained and practising CSA by June 2034	• Number of training • Percentage of farmers practising CSA	• Quarterly, Semi-annual and annual reports • Research reports	• Government • Research and Academic Institutions • CSOs • Development Partners • Private Sector
		• Train the communities on appropriate climate-smart forestry in the ANC	• All village natural resource committees are trained on CSF by June 2028 • At least 80% of villagers are trained on CSF by June 2034	• Number of training conducted • Number of VNRC trained • Percentage of villagers trained on CSF • Percentage of farmers practising CSF	• Quarterly, Semi-annual and annual reports • Research reports	• Government • Research and Academic Institutions • CSOs • Development Partners • Private Sector
		• Establish indigenous/local and modern climate change alert systems (early warning systems) in the ANC	• At least 2 climate change alert systems are in place by June 2028	• Number of climate change alert systems in place • Number of farmers using climate alert systems	• Quarterly, Semi-annual and annual reports • Research reports	• Government • Research and Academic Institutions • CSOs • Development Partners • Private Sector
7.	Strengthened management and conservation	• Train communities on the management and conservation of water	• One campaign on sustainable management and conservation of riverbanks	• Number of campaigns conducted	• Quarterly, Semi-annual and annual reports	• Government • Research and Academic Institutions

S/No	Strategic Objectives	Strategies	Targets	Indicators	Means of verification	Responsible institution/actor
	of water sources and riverbanks in the ANC.	sources and riverbanks in the ANC	conducted annually by June 2034 • At least 60% of villagers are engaged in management and conservation practices by June 2034	• Number of people participate in the complains • Change in community awareness • Number of villagers engaged in management and conservation practices • Change in water quantity and quality	• Research reports	• CSOs • Development Partners • Private Sector
		• Establish the status of water sources and riverbanks in the ANC	• At least 80% of water sources and riverbanks are identified, demarcated and their status established and by June 2028 • At least 50% of identified water sources and riverbanks are monitored and restored by June 2034	• Number of water sources • Status of water sources and riverbanks • Number of anthropogenic activities • Change in the status	• Quarterly, Semi-annual and annual reports • Research reports	• Government • Research and Academic Institutions • CSOs • Development Partners • Private Sector
		• Develop and implement integrated community-based water management plans and bylaws for the management and conservation of water	• At least 10 management plans and associated bylaws developed and implemented by June 2034 • Water sources and riverbanks destructed by human activities reduced by 80% by June, 2034	• Number of management plans • Number of bylaws • Number of villages using the management plans and bylaws • Number of villagers comply with the	• Quarterly, Semi-annual and annual reports • Research reports	• Government • Research and Academic Institutions • CSOs • Development Partners • Private Sector

S/No	Strategic Objectives	Strategies	Targets	Indicators	Means of verification	Responsible institution/actor
		sources and riverbanks in the ANC.	• At least 80% of villagers are engaged in management and conservation practices of water sources and riverbanks by June 2034 • At least 60% of villagers comply with the management plan and bylaws by June 2034	management plans and bylaws • Number of villagers directly contributing to management of water sources and riverbanks • Chan ge in the status of water sources and riverbanks • Change in water quantity and quality		

Appendix 2: Land cover Changes in the ANC (Nature Forest Reserve, National Forest Reserve and Village Land)

	Land Use Cover Change Within Nature Reserve 2018 – 2022						
No	Name	Forest (ha)	Vibrant Vegetation (ha)	Grassland (ha)	Forest loss 2018 – 2022 (ha)	Total (ha)	% Annual rate of change
1	Amani Nature Forest Reserve	5014.8	1,517.4	1920.4	716.9	9169.5	-2.7%
2	Nilo Nature Forest Reserve	4001.8	949.1	702.0	371.9	6024.8	-1.8%
	Land Use Cover Change In Adjacent Protected Land (National Forest Reserve)						
	Name	Forest (ha)	Vibrant Vegetation (ha)	Grassland (ha)	Forest loss 2018 – 2022 (ha)	Total (ha)	% Annual rate of change
1	Kwamgumi	1043.1	107.7	115.1	21.2	1287.1	-0.4%
2	Kwamrimba	556.1	214.1	198.2	9.4	977.8	-0.3%
3	Longuza	450.4	1145.6	613.1	238.7	2447.6	-8.5%
4	Magoroto	634.4	250.2	213.8	34.7	1133.1	-1.1%

5	Manga	364.2	575.6	682.6	55.8	1678.2	-2.9%
6	Mfumbia	0.3	499.1	162.3	145.4	807.0	-5.1%
7	Mlinga	249.1	347.0	212.9	39.3	848.3	-2.9%
8	Mtai	2307.1	497.6	356.3	39.6	3200.6	-0.3%
9	Semdoe/Msige	334.8	323.6	326.2	12.6	997.1	-0.7%
10	Sengoma	915.6	211.0	205.1	23.8	1355.5	-0.5%
11	Derema Coridor	817.1	52.4	73.8	6.6	949.9	-0.2%
	Land Use Cover Change In Village Land						
	Name	**Forest (ha)**	**Vibrant Vegetation (ha)**	**Grassland (ha)**	**Forest loss 2018 – 2022 (ha)**	**Total (ha)**	**% Annual rate of change**
1	Antakae	124.7	124.5	125.3	29.4	403.8	-4.2%
2	Kizerui	283.2	534.7	669.8	148.0	1635.8	-8.4%
3	Kwemdimu	298.4	625.5	845.0	121.1	1890.1	-6.8%
4	Kwezitu	202.8	114.0	68.7	16.3	401.7	-1.5%
5	Magoda	129.5	130.1	80.6	9.9	350.1	-1.5%
6	Msasa IBC	149.0	69.8	57.3	10.4	286.4	-1.3%
7	Shambangenda	659.0	414.0	421.2	52.9	1547.2	-1.5%

Source: CAN Forest project report: Assessment conducted 2022 by TFCG GIS officer

Appendix 3: List of Participants in the KIIs

S/No	Name	Title	Organisation
1.	Obadia Msemo	DFO	Muheza District Council
2.	Isabela David	Conservator	TFS-Derema
3.	Victor Mwingira	Researcher	NIMR
4.	Alfonce Nyalulu	Conservator	TFS-ANFR
5.	Yakubu Msike	Administrator	EUTCO
6.	Said Mtunguja	Coordinator	Misalai Ward
7.	Baraka Daniel	Field Officer	GFP
8.	Magret Lulege	Operation Manager	GFP
9.	Silvestor Mziray	DAO	Muheza District Council
10.	Alfayo H. Ngome	Conservator	TFS-NNFR
11.	Scholastica Ndimile	Project Manager	Nature Tanzania
12.	Moses Njole	Capacity Building Manager	USAID - RTI International
13.	Dr. Nike Doggat	Researcher	Leeds University
14.	Dr. Susanne Sallu	Researcher	Leeds University
15.	Ignatio Mzalia	Secretary	Zimisa - AMCOS
16.	Rajiv Bopiah	Manager	EUTCO
17.	Magret V. Matunda	Field Project Officer	EAMCEF

Appendix 4: List of Workshop Participants/Representatives from each organisation

S/No	Organisation	Number of participant
1.	Antakae Village	4
2.	Kizerui Village	2
3.	Kwezitu Village	2
4.	Kwemdimu Village	1
5.	Madoda Village	1
6.	Msasa IBC Village	1
7.	Shambangeda Village	2
8.	Misalai Ward	1
9.	Kwezitu Ward	1
10.	Regional Administrative Secretary	1
11.	Muheza District Council	2
12.	TFS-ANFR	1
13.	TFS-NNFR	1
14.	TFS-Derema	1
15.	USAID	1
16.	TFCG	5
17.	MJUMITA	1

18.	Nature Tanzania	1
19.	Amani Friends of Nature	1
20.	UWAMAKIZI	1
21.	EUTCO	1
22.	GFP	1
23.	TAFORI	2
24.	NIMR	1
	Total	**36**

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