



# Towards an Industrialized Tanzania: Investing in Conservation of the Eastern Arc Mountains Forests for Secure Water Services



## Key Messages

- **25% of Tanzania's population** in upstream and downstream Regions of the Eastern Arc Mountains (EAMs) depends on water from rivers fed by the EAMs catchment areas.
- **90% of Tanzania's hydroelectricity** is produced at major hydro-power stations such as Kidatu, Mtera, Kihansi, Nyumba ya Mungu, Pangani and Hale – all fed by water supply from the EAMs catchment areas.
- **Strengthened conservation of upstream water catchments** of the EAMs has the potential to reduced operational costs associated with siltation of hydroelectric dams and water supply infrastructures.
- **Adequate financing (and financing strategy) is needed** to support forest management authorities and community-based interventions that address key drivers of degradation of catchment forests.
- The presence of the Eastern Arc Mountains Conservation Endowment Fund (EAMCEF) **offers an opportunity as a funding mechanism for channelling resources to support** conservation of the EAMs ecosystem.

## 1. Introduction

**This brief stresses the need for strengthening conservation of the forests of the Eastern Arc Mountains (EAMs) of Tanzania given their key function as water catchment areas.** The abundant forest resources of Tanzania, especially those concentrated at the EAMs provide essential water catchment services – hence referred to as watershed. By being watersheds, the forests collect rainwater, and run-off waters and channel them into rivers, dams, lakes, or into underground water systems – thereby controlling the flow of water into the ecosystem and beyond at all times. Water as a critical environmental service is important to the survival of the existing biodiversity and for human activities downstream – be it domestic, agricultural or industrial activities.

**The government of Tanzania has put in place key policy instruments to guide management and conservation of water.**

For example, the National Water Policy of 2002 recognizes the role of forests in conservation of water resources and stresses the need to protect water as a vulnerable resource facing pressure from increasing multi-sectoral demands of the rapidly growing population, environmental degradation and growth in economic activities such as extensive irrigated agriculture, industrial production, hydro-power production, mining, livestock keeping, fisheries, environmental sanitation and for wildlife water use. The National Forest Policy of 1998 has the main goal of ensuring that the contribution of the forest sector in the national development is enhanced while conserving and sustainably managing the natural resources.

**The Tanzania's Five-Year Development Plan III (2021/2022 -2025/2026) of June 2021 encourages the conservation and sustainable land use practices for management of water, including through integrated approaches.** The National climate change strategy of 2021 and the Nationally Determined Contributions (NDC) of 2021 view water conservation in the changing climate and outlines key strategies for building resilience in the water sector, including through sustainable management of catchment forests – watersheds.

**Despite presence of policy instruments and prioritization of water management at national level, adequate financing is needed in order to enhance conservation of watershed and ensure continued flow and resilience of water services.**

## 2. The Forests of the EAMs and Water

The EAMs forms a great source of water with rivers originating from them supporting about 25% of the country's population. Many rivers of the eastern Tanzania source their waters from the EAMs. The EAMs are major sources of water for hydropower generation, small and large-scale agriculture (such as Paddy/Rice, Maize, Sugarcane, Forest Plantations and Tea), domestic and industrial use.

**Water for domestic and industrial use:** The Uluguru Mountains give rise to the Ruvu River that supplies most of its waters to the three regions of Morogoro, Coastal and Dar es Salaam. The Ruvu River is joined by a chief tributary – the Ngerengere River, which rises in the northern part of Uluguru Mountains and flows into Morogoro town. The East Usambaras (in Amani Nature Forest Reserve and Handei Mountains) are the sources of Zigi River that supplies water in Tanga Region. The Wami, Kilombero, Little Ruaha and Pangani Rivers also flow from different ranges within the EAMs and supply water for rural activities, large scale agricultural activities, and industries in the lowlands. Towns and cities of Dodoma, Iringa, Tanga, Dar-es-Salaam, Morogoro, Ifakara, Lushoto, Mwangi, Same, Mombo, Korogwe, Kilosa, Muheza, Kibaha, Mpwapwa, Mvomero, Turiani, Kilindi, Gairo, Mikumi, Chalinze, Handeni and Kilolo rely on water tapped from the EAMs.

**Water for electricity:** The EAMs are sources of water responsible for over 90% of Tanzania's Hydro-Electric Power produced in major power stations – for example, rivers from the Udzungwa Mountains Block inputs its water in Kidatu and Mtera power stations (both within Great Ruaha River) and the Kihansi power station (within Kihansi River). The North and South Pare and West Usambara Mountain Blocks supply water to Pangani Falls and Hale power stations and Nyumba ya Mungu Dam. The Julius Nyerere Hydropower Station (JNHS), at Stiegler's Gorge site depends upon the EAMs for water supply. The total economic value of the hydropower potential of the EAMs ecosystem is estimated at USD 66 billion which is 28% of the total economic value of the entire ecosystem.

**Water for major agricultural activities:** The EAMs ecosystem provide favourable environmental conditions for agricultural activities - the soils, nutrients, water, and weather conditions support the production of both food and cash crops consumed locally and across the country. Large-scale farming of cash crops within the EAMs ecosystem is an important contributor to the national economy for crops such as sisal, tea and sugarcane. The famous Kilombero and Mtibwa Sugar Estates benefit from the soil and climatic attributes of the EAMs. The total agriculture economic value (including livestock keeping) is estimated to be more than USD 4 billion.

Within the EAMs ecosystem, the government earmarked about 287,000 Square Kilometres for attracting partnerships and private investments in the agricultural sector through intensive irrigation activities. This area is referred to as the Southern Agricultural Growth Corridor of Tanzania (SAGCOT). The SAGCOT area overlaps in eight of the EAMs blocks – Nguu, Nguru, Uluguru, Ukaguru, Rubeho, Malundwe, Udzungwa and Mahenge Highlands. These mountains provide, among others, watershed services feeding the river basins and wetlands for majority of the land in the SAGCOT area – e.g., the Ruaha/Rufiji River basin with its three main sub-catchments of Great Ruaha, Kilombero and Luwego and wetlands of Kilombero flood plain, Usangu flats and Rufiji Delta spreading across the corridor, serving large part of the corridor. Other important rivers within the corridor include the Wami/Ruvu basin, Lake Rukwa Basin and Lake Nyasa.

### 3. The Industrialization agenda and Water - What is the relationship?

Since the adoption of the Tanzania's Development Vision 2025, the government of Tanzania has been striving to transform the country into a middle-income status by 2025 (now at lower-middle income status since July 2020). An industrialization agenda has been prioritized to accelerate growth and transformation and is mainly implemented through a series of five-year development plans. Both the FYDP II (2016/2017 – 2020/2021) and FYDP III (2021/2022-2025/2026) put strategic interventions across sectors to catalyse socio-economic impacts at the national level. An industrialization agenda puts in place enabling environments for increased investments in key sectors, including through increased small, medium and large industries. Increased industrial activities means increased consumption of raw materials, energy consumption and other key inputs. Industrial inputs such as water sourced from on-ground water bodies like rivers, lakes, dams and streams are normally overlooked given the nature of their availability and low-price value attached to it.

Having understood the economic importance of the EAMs in providing sources of water for neighbouring regions and downstream population, it is apparent that increased industrial activities rises demands for water. One way to ensure continued and long-term flow of water services from the ecosystem is to intensify conservation of the water catchment (watershed) forests of the EAMs. Intensifying conservation measures means increasing financing and capacity of the forest management institutions, increasing investments on sustainable land management practices that help upstream communities, including through support to alternative income generating activities while at the same time addressing key drivers of deforestation and forest degradation. One way of addressing the financing gap in forest management is to develop and implement a comprehensive forest financing strategy that help key institutions and line ministries tap global and domestic financing opportunities.

### About the EAMCEF

The Eastern Arc Mountains Conservation Endowment Fund is a Trust Fund that was established and functions as a long-term and reliable funding mechanism to support Community Development, Biodiversity Conservation and Applied Research Projects, which promote the biological diversity, ecological functions and sustainable use of natural resources in the Eastern Arc Mountains of Tanzania. The EAMCEF operates as a Not-for-Profit Conservation Finance Trust Organization, mobilizes financial resources and issues project grants to Government Departments (Central and Local Governments), NGOs, CBOs, Local Communities, Research Institutions, Academic Institutions, Private Entities as well as interested individuals.

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