




May 2018

IMPROVING CONSERVATION OF THE EASTERN ARC MOUNTAINS FORESTS OF TANZANIA

FACTS AND FIGURES



"The survival of our wildlife is a matter of grave concern to all of us in Africa. These wild creatures amid the wild places they inhabit are not only important as a source of wonder and inspiration but are an integral part of our natural resources and our future livelihood and wellbeing. In accepting the trusteeship of our wildlife we solemnly declare that we will do everything in our power to make sure that our children's grand-children will be able to enjoy this rich and precious inheritance. The conservation of wildlife and wild places calls for specialist knowledge, trained manpower, and money, and we look to other nations to cooperate with us in this important task – the success or failure of which not only affects the continent of Africa but the rest of the world as well"

Mwalimu Julius K. Nyerere, September 1961

Introduction

This document presents quick Facts and Figures to communicate key Results of the project “Improving Conservation of the Eastern Arc Mountains Forests of Tanzania” implemented by the Eastern Arc Mountains Conservation Endowment Fund (EAMCEF), in collaboration with the Ministry of Natural Resources and Tourism-Forestry and Beekeeping Division, Local Government Authorities in 11 Target Districts (Mkinga, Muheza, Korogwe, Lushoto, Same, Morogoro Rural, Morogoro Urban, Mvomero, Kilombero, Kilolo and Mufindi) and field project grantees (Research and Academic Institutions, NGOs, CBOs, Local and Central Government Departments, Private Entities, Individuals). The Royal Government of Norway funded the project at a budget of USD 5.9 Million for a five-year project (June 2011 to May 2016) designed to realize effective conservation and sustainable outcomes for the Eastern Arc Mountains (EAMs) ecosystem, improved social welfare of the adjacent communities as well as enhanced financial sustainability for the EAMCEF.

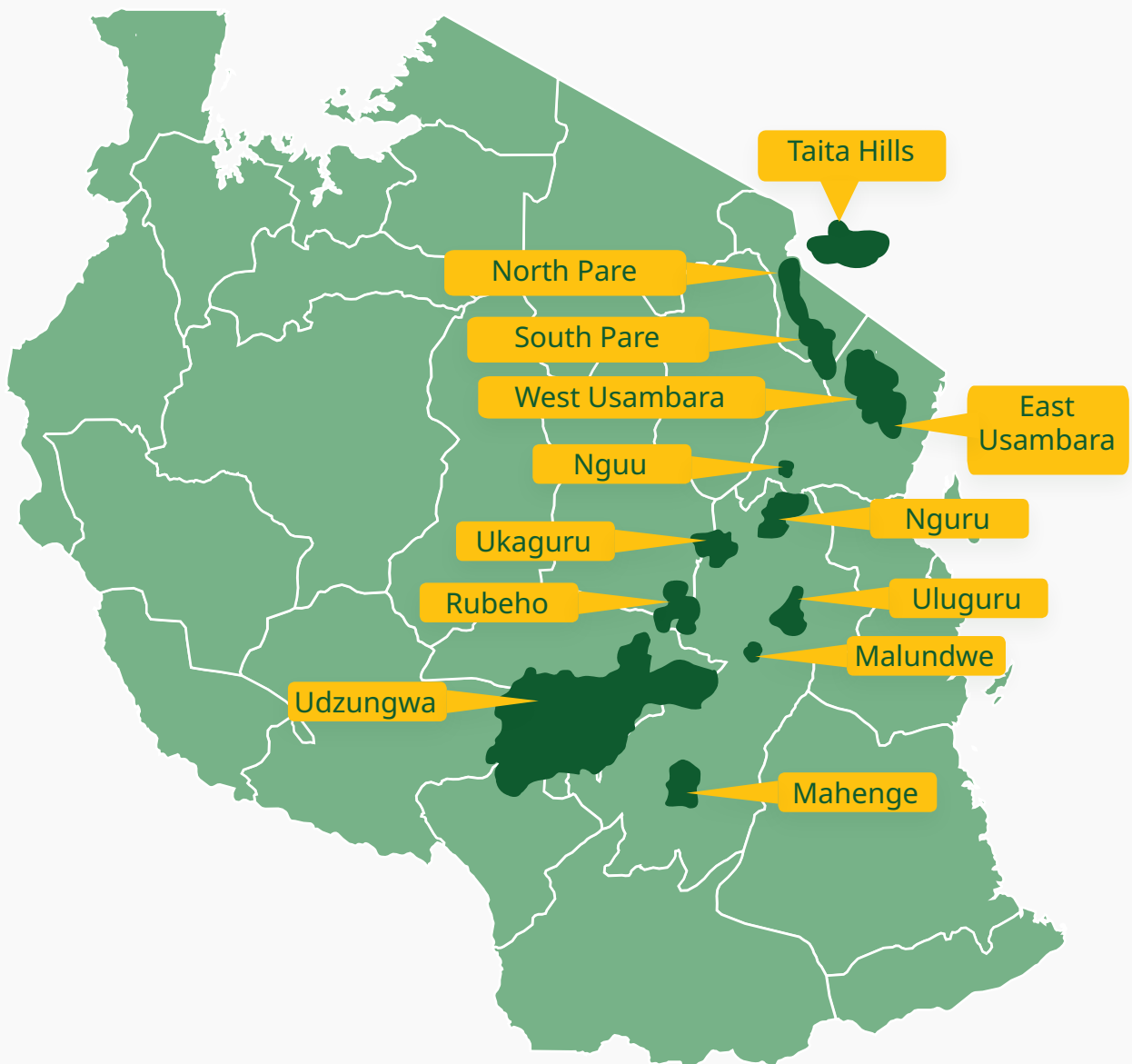
The Eastern Arc Mountains Conservation Endowment Fund (EAMCEF) is a Trust Fund established in June 2001 as a long-term funding mechanism to provide sufficient and reliable financial support for effective conservation of the Eastern Arc Mountains (EAMs) in Tanzania. Governed by a Board of Trustees and operating as a Not-for-Profit Trust Fund organization, the EAMCEF is managed on a day-to-day basis by an Endowment Fund Secretariat based in Morogoro Municipality and headed by an Executive Director. Since mid-2006 EAMCEF has been financing the conservation of the Eastern Arc Mountains forests through issuing project grants to field partners (Central and Local Government Departments, NGOs, CBOs, Local Communities, Research and Academic Institutions, Private Entities, etc.) who carries out the actual implementation of the projects on the ground. EAMCEF relies on this existing network than creating parallel structures for the purpose.

EAMCEF's supported projects recorded significant contribution in the conservation of biodiversity resources of the EAMs ecosystem as well as improved the livelihoods of communities within and hence contributed to achievements of local, national and global conservation and poverty reduction initiatives. Facts and Figures presented in this document have been extracted from project documentation and detailed technical report to help the reader grasp key highlights, but also increase publicity of EAMCEF work – especially key Results and Impacts of the project “Improving Conservation of the Eastern Arc Mountains Forests of Tanzania”

1.

Eastern Arc Mountains (EAMs) Location and Basic Features

EAMs – Location Map



Situated between
34.5°-36.5° E
and
3°-9° S



Spread in five regions
of Tanzania – **Tanga,**
Kilimanjaro, Morogoro,
Iringa and Dodoma.

Features



13 Blocks

separate Mountain blocks form the EAMs



600Km

of a broad arc formed by EAMs blocks



23,000 km²

of the area covered by EAMs blocks



12 Blocks

of the EAMs blocks are within Tanzania, spreading in over 15 Districts – forming amazing landscapes!



40%

of the Tanzania's remaining Tropical high forests are within the EAMs blocks



535 km²

Of EAMs blocks are covered by tropical forests



200 tons of Carbon

Released into the atmosphere per each hectare degraded



152 Mill. tons of Carbon

Estimated to be stored in EAMs forests, potential for climate change mitigation

2.

**Eastern Arc
Mountains:
Global Centres of
Biodiversity, with
High Endemism**



Among World's top 5

for diversity of plants, herpetofauna, birds and mammals of the Tropical forest World Heritage sites



Amongst World's 34 Biodiversity Hotspots

Defined by the Conservation International during 2007



Part of EBA

Categorized by Birdlife International (2003) as part of Endemic Bird Area (EBA)



A Global Ecoregion

EAMs are one of the Global 200 eco-regions as defined by WWF (2002)



Includes Amani Nature Reserve - The paradise of nature

Comprised of unique animal and plant species, often referred to as the "last paradise"



'A World Heritage Site'

Proposed by the Ministry of Natural Resources and Tourism, and UNESCO in 2010

High Endemism

12

Endemic Mammals species, incl. 4 primates spp



32

Endemic Reptiles species, incl. famous three-horned and dwarf chameleons



43

Endemic Butterfly spp



50+

Species of Amphibians



80+

Invertebrates (millipedes and spiders) endemic to single Mountain Block



100+

Endemic Vertebrate species



400+

Bird species, 21 being endemic and unique spp



550+

Endemic and unique plant species (trees, shrubs and herbs)



3.

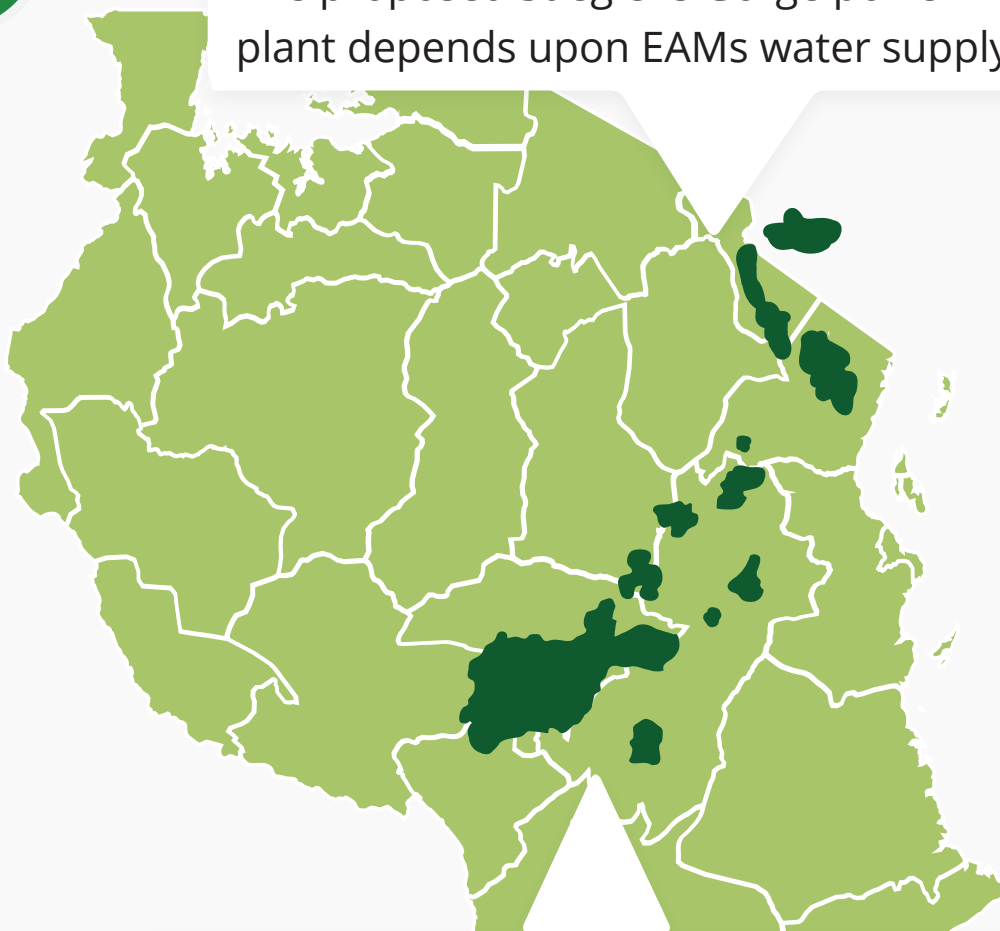
Eastern Arc Mountains: And the Tanzania's Economy

Economy: Hydroelectricity and watershed



90%

Tanzania's hydro-electricity is produced at major hydro-power stations such as Kidatu, Mtera, Kihansi, Nyumba ya Mungu, Pangani and Hale – all fed by water supply from EAMs catchment area. The proposed Stiegler's Gorge power plant depends upon EAMs water supply.



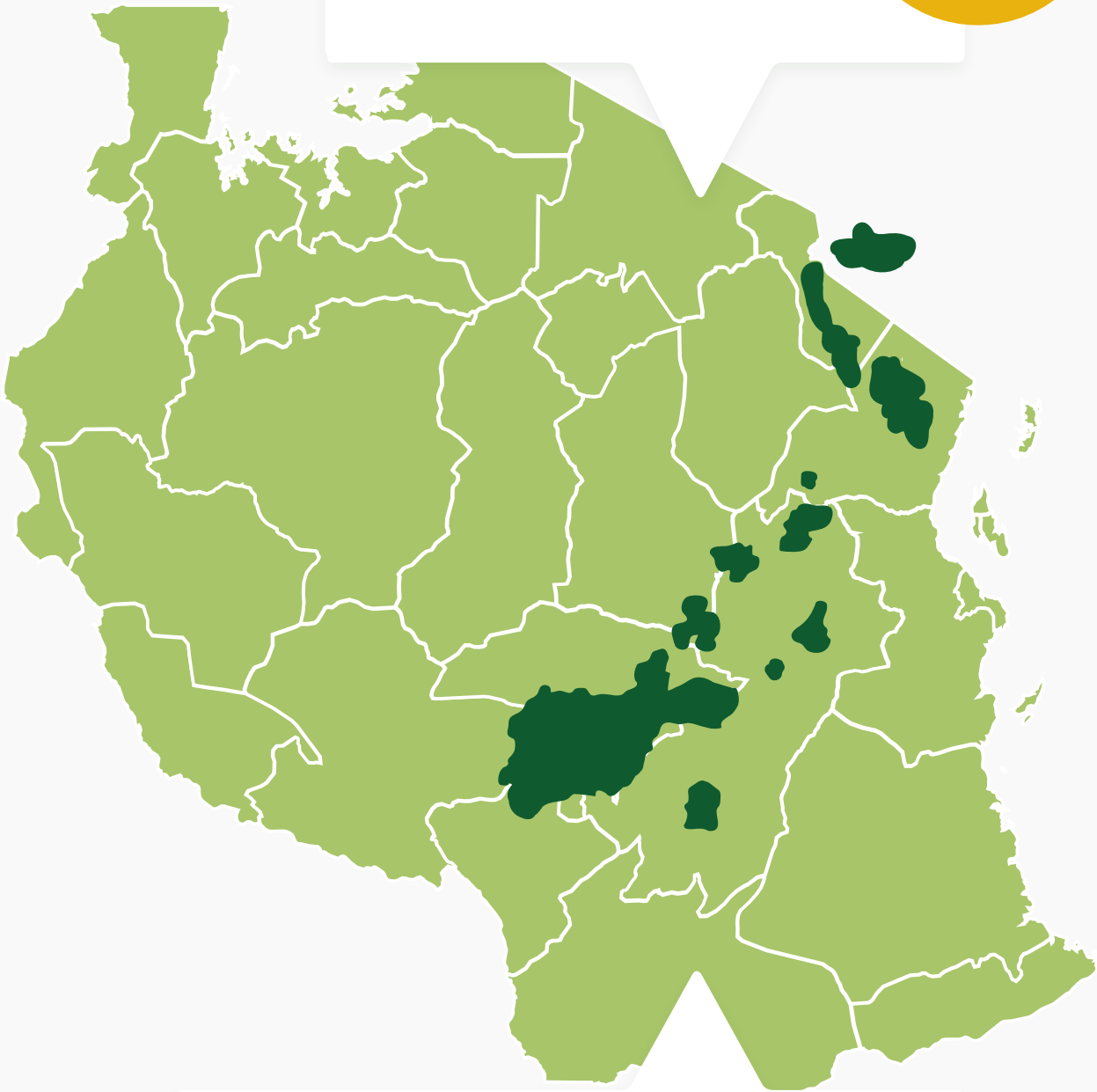
25%



25% of Tanzania's population in upstream and downstream Regions of the EAMs depends on water from rivers fed by EAMs catchment areas. Includes water for industries and small and large-scale agriculture. The more than 70% contribution to Tanzania's GDP by Dar Es Salaam City is highly dependent upon water supply from the EAMs.

Economy: Tourism and Livelihood

Millions of Tanzanians benefit from direct access to forest products of EAMs



Tourists visit the EAMs Protected Areas providing revenue to the Government

4.

About the Project: Improving Conservation of the EAMs Forests of Tanzania

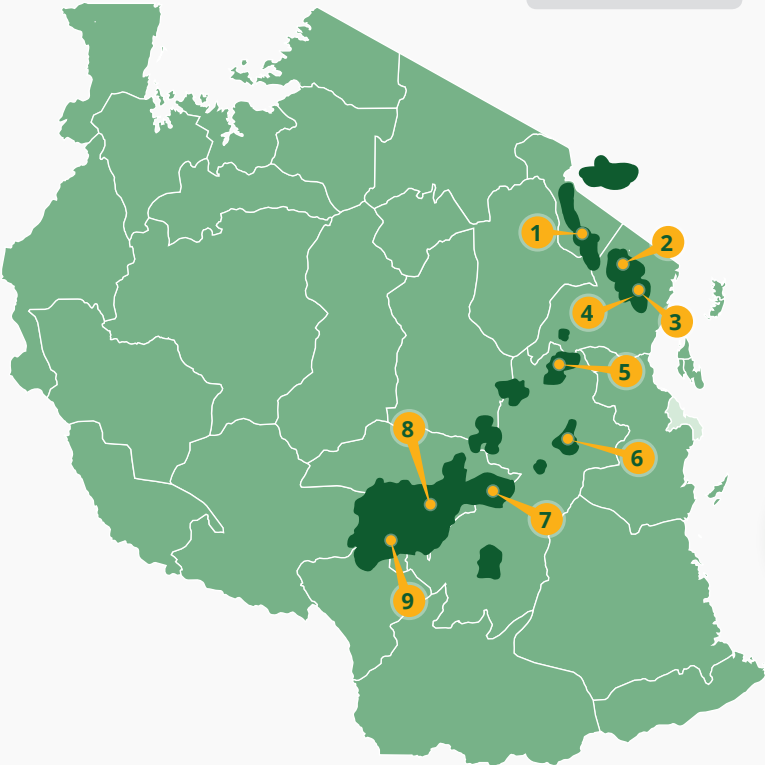
About the Project: Duration, Budget and Main Goal

5 YEARS
June 2011- May 2016

Main Goal

Enhanced conservation of the forests within the proposed Eastern Arc Mountains Forests World Heritage site in Tanzania

Total Budget
USD 5,947,700



204
Projects

Implemented in

1
National Park

8
Nature Reserves

1	Chome Nature Reserve	Same District
2	Magamba Nature Reserve	Lushoto and Korogwe Districts
3	Amani Nature Reserve	Korogwe, Muheza Districts
4	Nilo Nature Reserve	Mkinga, Muheza and Korogwe Districts
5	Mkingu Nature Reserve	Mvomero District

6	Uluguru Nature Reserve	Mvomero, Morogoro Districts and Morogoro Municipality
7	Kilombero Nature Reserve	Kilombero and Kilolo Districts
8	Uzungwa Scarp Nature Reserve	Kilolo, Mufindi and Kilombero Districts
9	Udzungwa Mountains National Park	Kilolo and Kilombero Districts

204 Projects
3 themes

146

Community-based
Conservation and
Development
Projects



Projects like

- Beekeeping
- Tree planting
- Improved stoves
- Fruit production
- Fish farming
- Local chicken
- Capacity building
- Horticulture
- Reforestation and rehabilitation
- Environmental conservation
- Agroforestry
- Biogas technology
- Hybrid chicken
- Dairy goat keeping
- Pig production
- Butterfly farming
- Ex situ conservation
- Soil conservation
- Spice tree farming
- Sunflower farming
- Soya beans farming
- Enterprise development
- Land use planning

40

Protected Areas
and Climate Change
Management
Projects



Projects like

- Boundary survey
- Boundary maintenance
- Boundary marking
- Nature trails establishment
- Nature trails maintenance
- Rehabilitation of degraded areas
- Forest surveillance
- Campsite improvement and management
- Infrastructure development
- Campsite establishment
- Ecotourism marketing

18

Applied Biodiversity
and Climate Change
Research Projects



Researches on

- Carbon storage/ climate change
- Biodiversity conservation
- Beekeeping
- Agroforestry
- Vegetation recovery
- Environmental education
- Opportunity costs for Nature Reserves

5.

**Project's Key Results:
Theme 1:
Community-Based
Conservation and
Development
Projects (CBCD)**

Key Results: CBCD Projects

Awareness raised to over 59,000
community members



Improved conservation awareness and networking with adjacent communities, resulting into increased participation of local communities in forest conservation activities.



8,750 community members received specific trainings and capacity support on alternative livelihood activities, generating up to TZS.450Million.

strengthened production, increased income and reduced pressure on forests - resulting into improved quality of life and forest condition.

14,016 households adopted use
of fuelwood efficient stoves



Over 50% reduction in firewood consumption, saving the forests from degradation, also with multiple benefits on human health.



686 households adopted conservation agriculture on 863 hactres

Soil and water conservation techniques have increased food production 2-3 folds, ensuring food security, increased production and income -changing the game at household level!



Mobilized 2255 school children, established 22 tree nurseries, 18Ha woodlots and tree planting competition introduced in schools to raise awareness

life-long learning on conservation enhanced through children



97 community-owned fish ponds increasing household revenue

Enhanced protein availability, increased income and reduced dependency on forests. Also enhanced through livestock keeping projects - thereby making protein available to more than 1500



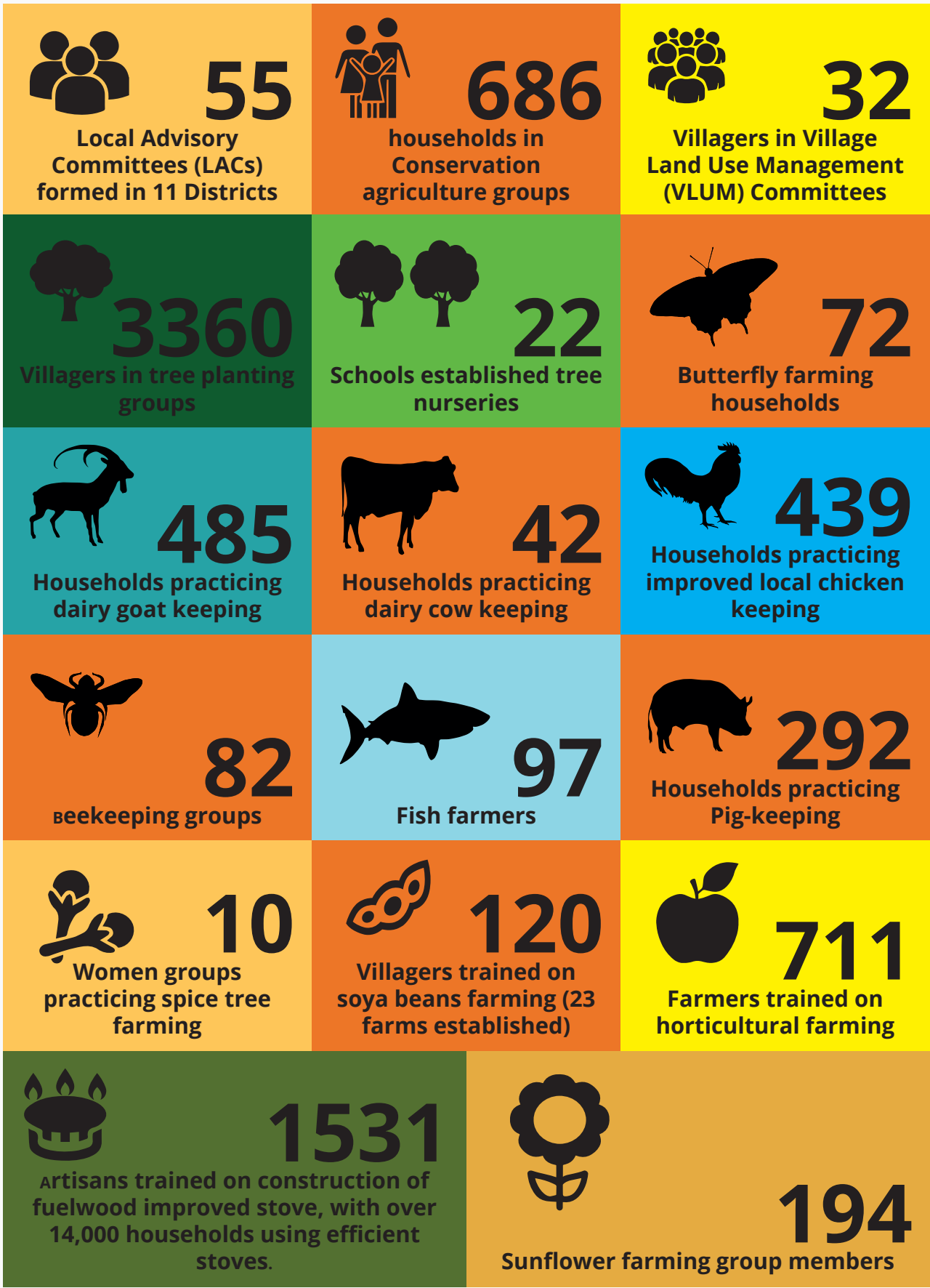
4 Land Use Plans produced through participatory exercises

Resolved 25 major land conflicts in the project sites - reducing encroachment.

Improved management of land and land resources through allocation of activities according to land suitability.

Issuance of 1,650 Certificates of Customary Rights of Occupancy strengthened land tenure rights of the local communities

Working with community groups and creation of Local Advisory Committees has been an important strategy in creating enabling environment for continued implementation of related future projects



6.

**Project's Key Results:
Theme 2:
Protected Areas
and Climate Change
Management
Projects (PA)**

■ Key Results: PA Projects

25 boundary conflicts resolved and encroachment reduced - ensuring full protection of Protected Areas and improved forest condition

1,500Km

of boundary cleared and maintained in 9 Protected Areas

4,500 K

boundary trees planted on 265Km boundary length

200Km

boundary resurveyed

59

boundary beacons installed

Reduced degradation and enhanced forest condition in Protected Areas, achieved, through:

915

Participatory forest patrols undertaken

70%+

Reduction in forest fire incidences per year

350H

planted with indigenous trees as part of rehabilitation of degraded areas

Improved ecotourism infrastructure - potential for attracting more tourists, resulting into increased revenue



Maintenance of **716** Nature trails and **177** drive routes



31 campsites established, renovation of ecotourism information centre

Increased publicity and media coverage of the EAMs – presenting the Arc at local, national and international community

59,000+

local communities reached through 884 awareness meetings

103

Radio and TV programmes

272

Signboards with conservation messages installed

4

Websites constructed

Publication of newspaper articles and various communication products

40 forest conservation projects developed and impelmented jointly between Central Government and local authorities

Improved coordination and team work between DVistrict Councils and the Ministry of Natural Resources and Tourism- resulting into improved management of forests especially in addressing key destructive activities.

Capacity improvement of partner institutions

Tzs. 450M





Generated through tourism and eco-tourism activities, and from fines paid by defaulters

10,811



local communities employed as casual labourers, paid in total TZS. 367+Million

created local employment opportunities and improved household income - hence, improved quality of life.

Forest Management Activities	Quantity	Employed local communities		Total amount paid (TZS)
				
Forest boundary clearance	1500KM	725	2025	141,572,400
Tree planting on forest boundaries	265KM	266	586	27,006,400
Slashing narcotic plants and farms in PAs	500Ha	122	409	22,189,000
Forest boundary survey/resurvey	199KM	36	94	8,281,000
Digging of forest boundary directional trenches	18 Trenches	0	13	65,000
Installation of forest boundary beacons	59 beacons	0	27	1,261,800
Forest patrols	915 patrols	1345	2480	44,428,499
Filling of mine pits	403 pits	114	304	13,827,000
Rehabilitation of degraded forests	288Ha	20	154	9,800,000
Establishment and maintenance of nature trails	716 KM	333	833	54,162,693
Establishment and maintenance of drive routes	177 routes	149	497	26,185,200
Establishment and maintenance of campsites	31 campsites	43	236	18,464,500
Sub-total		3153	7658	367,243,492
Grant Total (TZS)		10,811		367,243,492

7.

**Project's Key Results:
Theme 3:
Applied Biodiversity
and Climate Change
Research Projects**

Key Results: Applied Biodiversity and Climate Change Research Projects

Capacity improvement

Created enabling environment for implementation of similar projects through improved responsibility, accountability, transparency and local ownership



Enhanced financial capability of partner institutions through provision of project grants – TZS. 252,100,250.



18 Research Projects

Research results provided evidence for informed decision making, provided in-depth understanding of the various issues across EAMs



Carbon Storage/ Climate Change Researches

1. Carbon Storage Potential of Natural Forests in Uzungwa Scarp Forest Reserve
2. Managing the Eastern Arc Mountain Forests for Carbon Credits and Emission Trading (ANR, NNR, KNR)
3. Managing the Eastern Arc Mountain Forests for Carbon Credits and Emission Trading (ANR & NNR, Muheza, Korogwe, and Mkinga)
4. Managing the Eastern Arc Mountain Forests for Carbon Credits and Emission Trading (ANR, NNR & KNR - Muheza, Mkinga, Korogwe, Kilombero and Kilolo)
5. Perception and Indicators of Climate Change, Its Impacts and Available Mitigation Strategies in Rice Growing Community Within Kilombero Valley, Adjacent to USNR



Biodiversity Conservation Researches

6. Enhancing the Long-Term Conservation of Bird Species in the Amani Nature Reserve and Adjacent Forests
7. Preserving the Endangered Tree Species *Osyris lanceolata* through Ex-situ Conservation in the Eastern Arc Mountains (Case study-Chome Nature Reserve), Tanzania
8. Serving the Endangered Tree Species *Osyris lanceolata* through Ex-situ Conservation in the Eastern Arc Mountains (Case study-Chome Nature Reserve, Tanzania)
9. Developing Strategy for Enhancing Conservation of Biodiversity and Improving Livelihoods of Local Communities Surrounding Uzungwa Scarp Nature Reserve
10. Impact Assessment of Environmental Education Towards Biodiversity Conservation in Uluguru Nature Reserve



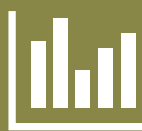
Agroforestry Researches

11. Impact of Existing Agroforestry Practices on Biodiversity Conservation and Local Peoples' Livelihoods Around Magamba Nature Reserve, Tanzania
12. The Role of On-farm Forest Resources as an Adaptation Strategy to Climate Change Effects to the Communities Around Mkingu Nature Reserve-Mvomero District



Beekeeping Researches

13. Factors Limiting Participation of Women and Youth in Beekeeping Industry: A Case Study of Mvomero District, Tanzania
14. Contribution of Beekeeping to Household Income Among Rural Communities Living Adjacent to Udzungwa Mountains, in Kilombero, Kilolo and Mufindi Districts



Other Research topics

15. Investigation of Cause Agents for Sudden Death of East African Camphor (*Ocotea usambarensis*) in Magamba Nature Reserve, Lushoto District, Tanzania
16. Monitoring of Vegetation Recovery Following Massive Death of Bamboo Stands in Uzungwa Scarp Nature Reserve
17. Community Opportunity Costs Underlying Establishment of Uluguru Nature Reserve in Morogoro, Tanzania
18. Assessing Vegetation Recovery Following Flowering and Massive Death of Bamboo Stands in the Uzungwa Scarp Forest Reserve, Kilolo District

About EAMCEF

The Eastern Arc Mountains Conservation Endowment Fund (EAMCEF) 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. EAMCEF was officially registered in Tanzania on 6th June 2001 and operates as a Conservation Trust Fund.

Vision

Our Vision is to see that Eastern Arc Mountains and the people who depend on them live in harmony as one sustainable ecosystem. The forests and mountains will provide goods and services - from water to electrical power, from food and cash crops to medicines- for the people of Tanzania. And the world community will benefit from a protected biodiversity hotspot and a major carbon sink reducing global warming.

Mission

Our mission is to catalyse resources to foster conservation of forest biodiversity in the Eastern Arc Mountains of Tanzania through investment in sustainable community development and livelihood improvement, sustained financing for protected areas management and financial support to applied biodiversity and climate change research.

The Eastern Arc Mountains of Tanzania

The Eastern Arc Mountains in Tanzania cover a total area of approximately 5,350 square kilometres. Major Mountain blocks of the Eastern Arc spread over fifteen districts in five regions of Tanzania namely, Tanga (East and West Usambara, and Nguu Mountains), Kilimanjaro (North and South Pare Mountains), Morogoro (Nguru, Uluguru, Ukaguru, Udzungwa, Malundwe, Mahenge and Rubeho Mountains), Dodoma (Rubeho Mountains) and Iringa (Udzungwa Mountains).

Focus Area

Community Based Conservation and Development activities for improvement of rural livelihoods and social welfare of forest adjacent communities.

1. Applied biodiversity and climate change research relevant to the conservation of biodiversity in the priority Eastern Arc Mountains.
2. Protected Areas and Climate Change Management to improve the ecological functions of the ecosystem and strengthen the management capabilities of the responsible institutions.
3. Protected Areas and Climate Change Management to improve the ecological functions of the ecosystem and strengthen the management capabilities of the responsible institutions.



This document was produced from the project – Improving Conservation of the Eastern Arc Mountains of Tanzania (2011-2016), supported by the Government of Norway.

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