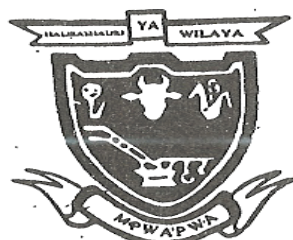


**UNITED REPUBLIC OF TANZANIA**

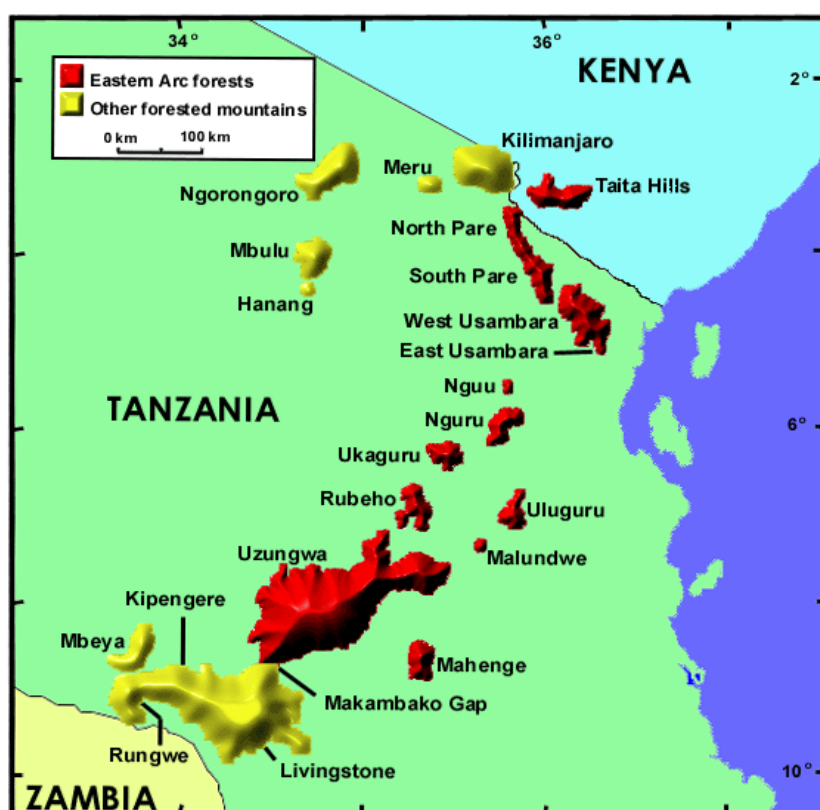
**PRIME MINISTER'S OFFICE**

**REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT**

**MPWAPWA DISTRICT COUNCIL**



**A REPORT ON THE STATUS OF RUBEHO MOUNTAINS  
ECOSYSTEM IN MPWAPWA DISTRICT**



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# **SUMMARY OF THE PRESENTATION**

## **1. Description of Mountain Ecosystem**

- Name of the Mountain ecosystem
- Location of the Mountain ecosystem
- Ownership status of the Rubeho Mountains
- Coverage of the Mountain ecosystem
- Nature of the Mountain ecosystem
- Vegetation and other description of the Mountain ecosystems

## **2. Socio - economic data**

- Population and villages nearby the Mountain ecosystem (Rubeho)
- Socio-economic activities and Productivity

## **3. Ecosystem services**

- Services that community benefits from the ecosystem

## **4. Status and trends**

- Biodiversity
- General landscape/terrain and etc.....

## **5. Drivers of change/threats (if any)**

- Mention any driver which cause change the ecosystem/cause threats

## **6. Management initiatives in place**

- Management actions taking place

## **7. Recommendations for future action (s)**

## **8. Maps and photos of the Rubeho**

## **1. DESCRIPTION OF THE MOUNTAIN ECOSYSTEMS**

- **Name of the Ecosystem:** Known as Rubeho Mountain Forests. It is one of the least known mountain ranges within the Eastern Arc Mountain Forest.

*Eastern Arc Mountains: The Eastern Arc is a chain of ancient mountains covered by rain forests and grasslands in Tanzania and Kenya. Originally encompassing 23,700km<sup>2</sup> and stretching in scattered mountain blocks from the Taita Hills in southern Kenya to the Udzungwa Mountains in southern Tanzania, the Eastern Arc Forests are among the oldest and most biologically diverse forests in the world. The main mountains, from north to south, are: Taita Hills, North and South Pare, West and East Usambara, North and South Nguru, Ukaguru, Uluguru, Rubeho, and Udzungwa.*

- **Location:** It is within Eastern Arc Mountain Forest located in two Districts of Mpwapwa (Dodoma Region) and Kilosa (Morogoro Region)
- **Ownership Status of Rubeho Mountains:** Two NFR's (Pala – Ulanga and Ukwiva) and two VLFR's (Ilele and Lunenzi) are in Kilosa and three National Forest Reserves (Mafwemela, Wotta and Mang'aliza) and nine VLFR's (Ipondelo, Ndege, Mbikimkiwa, Mbuga, Galigali, Bulu, Chemchem, Isoliwaya and Kiyegea) are in Mpwapwa.
- **Coverage area of the Ecosystem:** Mafwemela NFR = 3,237ha; Mang'alisa NFR = 4,988ha; Wotta NFR = 1,024ha; Ukwiva NFR = 78,780ha; Pala-Ulanga NFR = 10,610.3ha; proposed Kiboriani Forest Reserve which includes 56,000 ha of woodland with Eastern Arc forest and grassland habitats at higher altitudes and Ilele, Ipondelo = 916.27ha, Ndege = 131.78ha, Mbikimkiwa = 39.79ha, Mbuga = 804.61ha and Lunenzi VFRs with montane forests and various woodlands in almost all villages in the ecosystem.
- **Nature of the ecosystem:** It is one of the least known mountain ranges within the Eastern Arc with montane and submontane forest, lowland, woodland and fire damaged forest. The Rubeho Mountains include a main highland area and various

isolated ridges and massifs; such as Mang'alisa, the Kiboriani Mountains, Pala-Ulanga (east) and Wota (west). The highest point within these areas is 2,225m.

- **Vegetation:** Large part of the ecosystem is mainly of montane forest and woodland characteristics. The vegetation of the Rubeho mountains contains a number of different types of forest include *Podocarpus trees*, *Agauria salicifolia*, *Aphloia theiformis*, *Bridelia micrantha*, *Catha edulis*, *Diospyros whyteana*, *Halleria lucida*, *Macaranga kilimandscharica*, *Maesa lanceolata*, *Maytenus acuminata*, *Nuxia congesta*, *Parinari excelsa*, *Polyscias fulva*, *Rapanea melanophloeos* and *Xymalos monospora*.

## **2. SOCIO – ECONOMIC DATA**

- **Population status and villages surrounding the ecosystem:** The forest of the Rubeho Mountains is surrounded by more than 48 villages in Mpwapwa district with an estimated population of 166,537 who are surrounding the ecosystem at highland and lowland area of the Rubeho Mountains.
- **Socio - Economic Activities and Productivity:** The primary economic activity of the majority of people living in the vicinity of the Rubeho Mountains is cultivation of maize, potatoes, cabbages and beans. Some communities have promoted irrigation initiatives for rice, onions, bananas, sugar and vegetable cultivation.
- **Transportation:** Transport costs for agricultural produce is high due to poor roads and long distances.

## **3. ECOSYSTEM SERVICES**

- **Services that community benefits from the ecosystem:**
  - 1) Irrigation of agricultural crops such as beans, onions, rice, etc
  - 2) Water from the Mafwemela National FR and Ipondelo VFR (Lufusi) is used in hydro-electric power production at Roman Catholic Mission Centre

- 3) Water from the forest is also used for domestic purposes
- 4) Collecting firewood and other non-wood products from the forest
- 5) Being part of the Eastern Arc Mountains Forest, various researchers are visiting hence the community in the landscape are benefitting directly or indirectly from various project activities.

#### **4. STATUS AND TRENDS OF THE ECOSYSTEM**

- **Biodiversity:** Until recently the Rubeho was the least known of the Eastern Arc Mountain blocks. But through recent biodiversity research conducted by the TFCG in partnership with the Zoological Museum of Copenhagen and the Trento Museum of Natural History, Italy, scientists have realized that the Rubeho Mountain forests are far more important than was previously thought.
- Since 2000, two vertebrate species strictly endemic to the Rubeho Mountains have been discovered, the partridge *Xenoperdix obscurata* and the frog, *Arthroleptis nikeae*. Both are found in the Mafwemela forest. TFCG surveys have also identified a significant population of the Abbott's duiker in Isole Forest, a species categorized as being Vulnerable to extinction by IUCN. A further 12 Eastern Arc endemic vertebrate species and 22 vertebrate species with ranges that include the Eastern Arc, the Coastal Forests and/or the Southern have also been recorded from this area. The Rubeho support no Eastern Arc endemic trees.

#### **5. DRIVERS OF CHANGE/THREATS OF ECOSYSTEM**

- **Drivers of change/Threats of the ecosystem:** The Rubeho forests face a variety of threats affecting different sites. Various surveys conducted by District council, TFCG and local communities have identified significant threats to the forest. Mang'alisa Forest on the western edge of the Rubeho Mountains has one of the highest rates of forest loss recorded in the Eastern Arc. Threats include illegal logging, uncontrolled fires and clearance of forest for agricultural land (agricultural encroachment). In

Mafwemela, Wotta and Mang'alisa there has also been significant harvesting of timber especially the *Podocarpus trees*. The district council is urgently seeking funds to halt the destruction of these forests.

## **6. MANAGEMENT INITIATIVES OF THE ECOSYSTEM**

- **Some of the Management Actions taking place:** Currently TFCG, DONET, Mpwapa District Council in collaboration with local communities are implementing some activities in only seven (7) villages surrounding Mafwemela NFR including: Mbuga, Galigali, Lufu, Gomhungile, Idaho, Lufusi and Kizi and two (2) villages surrounding Kiboriani mountains including Nghambi and Chunyu. The activities which are being implemented are: -

- 1) Facilitate on Village Land use Plan (4 villages have LUP)
- 2) Facilitate local communities on establishment of VLFRs and/or CFRs (implement Land Act No. 5, 1999 and Forest Act 2002). 12 villages are now practicing CBFM process; 7 at Mafwemela, 4 at Wotta and 1 at Kiboriani. Two these villages are implementing their Forest Management Plans with approved bylaws.
- 3) Facilitate the community with tree seeds and other facilities
- 4) Facilitate the community on election of VNRCs and strengthen them with various trainings.
- 5) Facilitate participatory survey and mapping of VLFRs and/or CFRs (5 villages)
- 6) Establishment of Forest Conservation Networking/Mtandao wa Jamii ya Mafwemela (MJAMA) for community of Mafwemela as part of Rubeho.
- 7) Raising awareness on environmental education in schools (9 schools)
- 8) Provide training to local communities on improved agricultural conservation techniques (6 villages)

9) TFCG has started to implement REDD activities to 6 villages.

10) Train local communities on improved energy efficient stoves

▪ **District Initiatives:**

1. While Mwanawotta, Lwihomelo, Bumila, Kingiti and Iyenge have been implementing CBFM activities through TASAF fund.
2. The District Council has also allocated few funds for survey and mapping of only one VLFR/CFR in this financial year 2011/2012.
3. In Financial year 2012/2013, the District is planning to budget for 7 villages to undertake survey and mapping of their VLFRs/CFRs.
4. Moreover the District has been participating little in raising trees and distribute them to the communities

## **7. RECOMMENDATION FOR FUTURE ACTION (S)**

- Gazette all VLFRs/CFRs
- Capacity building on environmental experts on the management of mountain ecosystem
- Review of JFM guideline especially on the benefits of local communities who directly involving on the management of these forest who are owned by central or local government
- Allocate more funds for conservation activities (NEMC, MNRT, VPO Department of Environment and other stakeholders)
- Benefits for JFM should be cleared stipulated
- Support the community on establishing their VLUPs
- Review the NFRs and VLFRs boundaries so as to reduce conflicts
- Produce environmental programme (video CDs)

**Sketchmap of the Eastern Arc Mountains**

**Key**

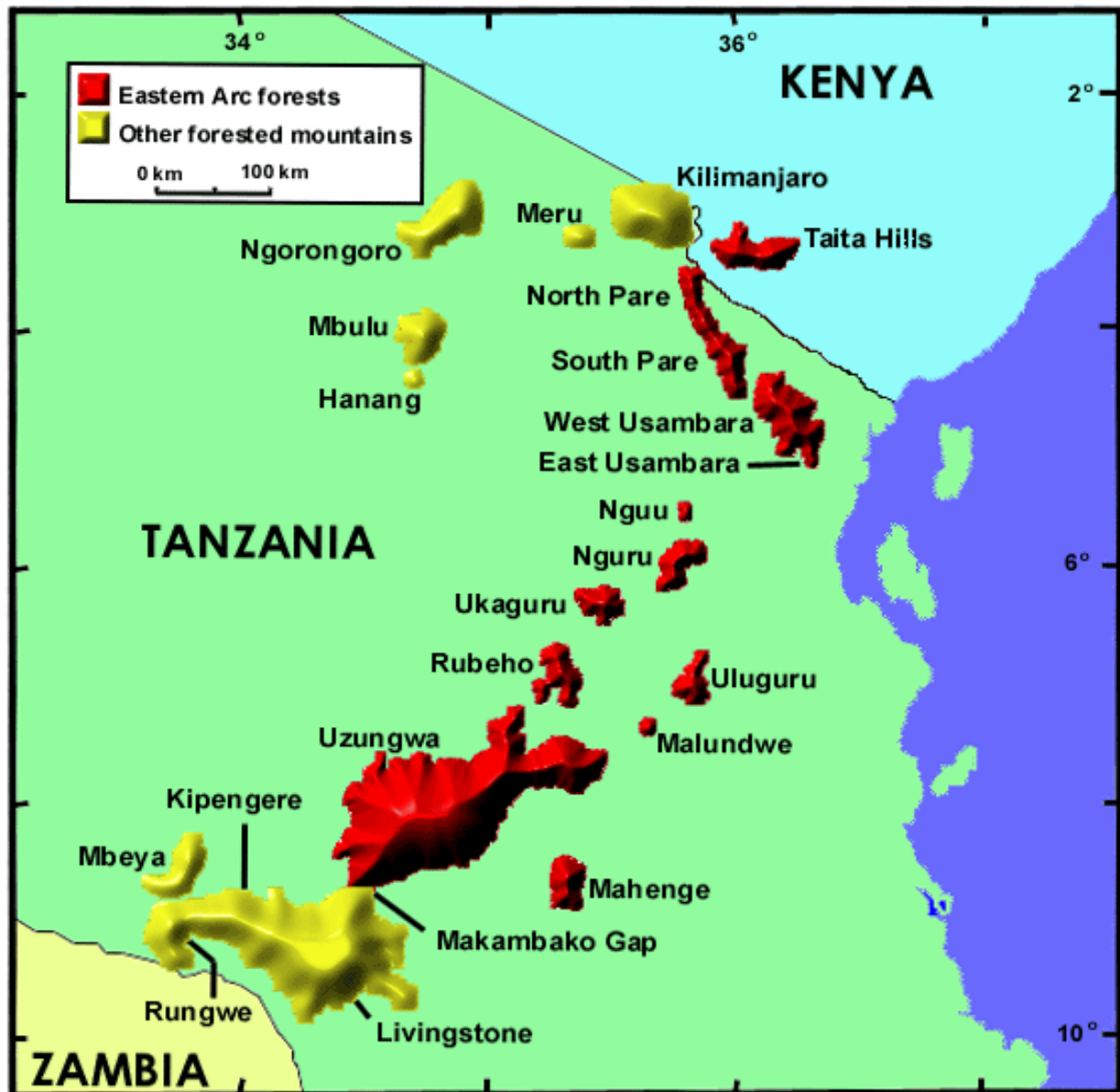
- Eastern Arc Mountains (Green)
- Other Mountain Blocks (Grey)

**Geographical Features and Labels:**

- Mountains:** Kilimanjaro, Meru, Taita Hills, North Pare, South Pare, West Usambara, East Usambara, Nguru, Ukaguru, Rubeho, Udzungwa, Rungwe, Livingstone, Mahenge, Malundwe, Uluguru, Morogoro.
- Rivers:** Pangani River, Wami River, Rufiji River, Save River, Limpopo River, Shashani River.
- Coastal Towns:** Tanga, Dar es Salaam.
- Other Labels:** Ininga, Ifakara.
- Neighboring Countries:** Kenya, Tanzania, Malawi, Zambia.



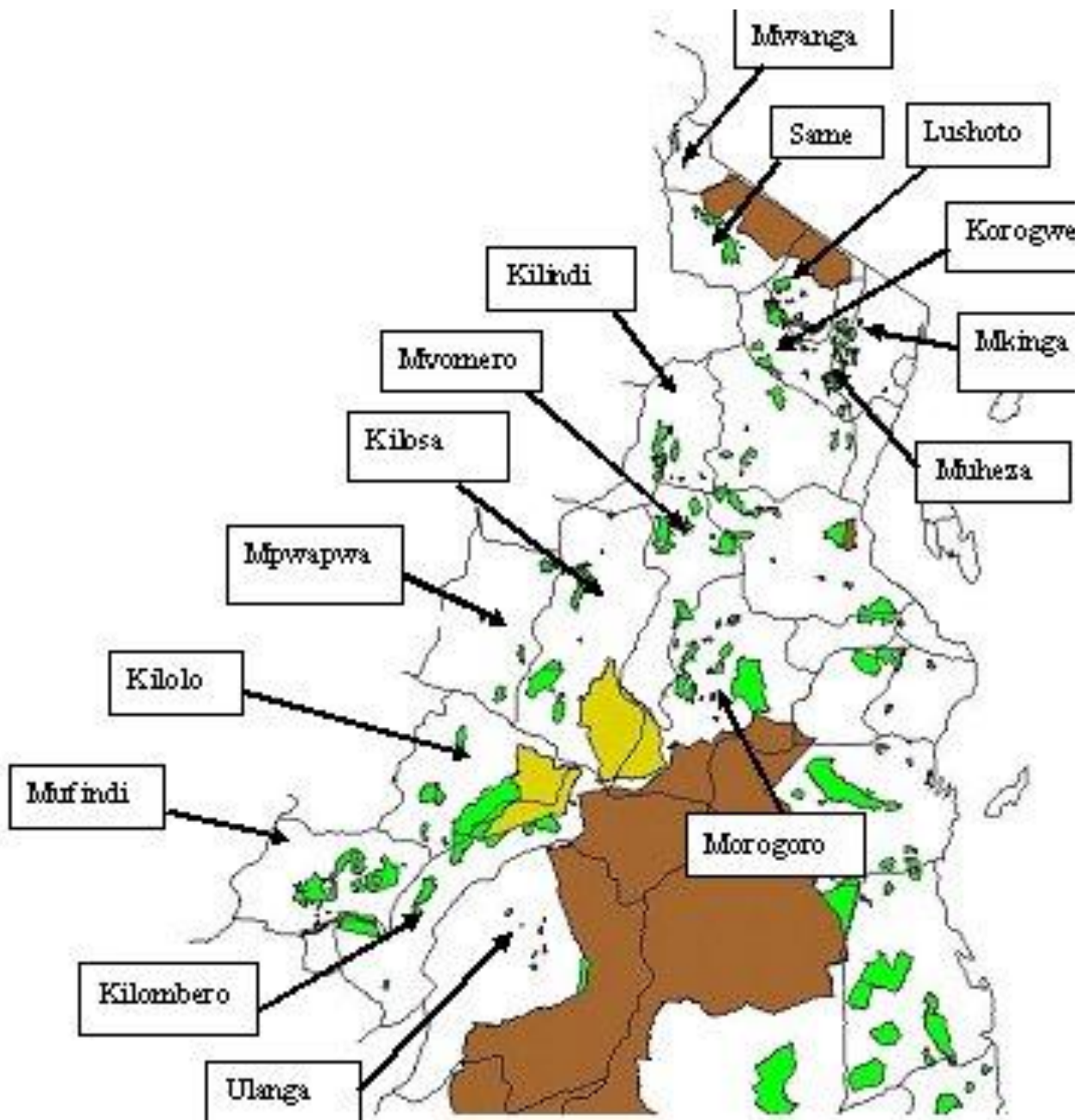
# SKETCHED MAP OF THE EASTERN ARC MOUNTAINS –B



## POSITION OF THE RUBEHO MOUNTAINS

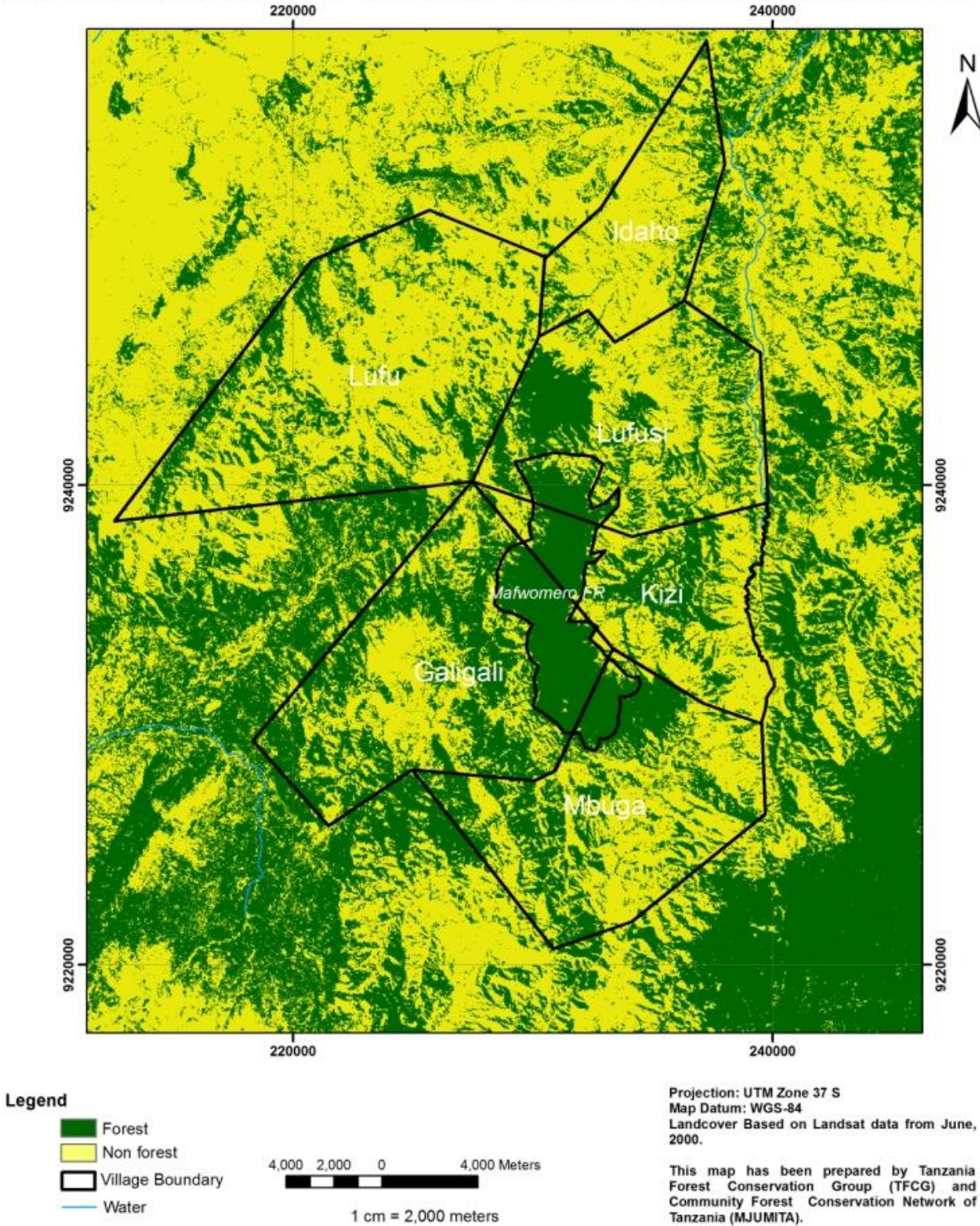


## DISTRICTS OF THE EASTERN ARC MOUNTAINS OF TANZANIA





Map showing forest and non forest areas for REDD project site, Mpwapwa 2000.





## Road condition in Rubeho Mountains





## Means of Transportation of goods in Rubeho Mountains





**Species found at Rubeho Mountain Ecosystem**



*Chameleon at Galigali village forest reserve (woodland forest)*



*Reptile specie at Galigali village forest reserve (woodland forest)*





*Nike's squeaker, a frog found at Rubeho mountain ecosystem*



*A new frog species found at Rubeho Mountain ecosystem which has never identified by scientist*





*Bushbaby (komba) is also found at Rubeho mountain ecosystem*



*Lowe's servaline genet is also found at Rubeho mountain ecosystem*





*Werner's chameleon is also found at Rubeho mountain ecosystem*



*A snake species previous was only known to be in Uluguru mountain ecosystem but recently it was found at Ilole forest within Rubeho mountain ecosystem.*



*Minde ni funo is also found at Rubeho mountain ecosystem*





*Kwale wa Rubeho (Rubeho partridge) is also found at Rubeho mountain ecosystem*



*Iringa Alakat, is also found at Rubeho ecosystem*

## Deforestation of the Rubeho Mountain Ecosystem



*Agricultural expansion in the Rubeho mountain ecosystem at Dibulilo sub-village, Galigali*





*Cleared forest within Rubeho Mountain ecosystem at Mwanawotta village*



*Deforestation caused by invading the forest land for agricultural expansion at Rubeho ecosystem in Galigali village*





*Uncontrolled fire at the forest edge of Rubeho mountain ecosystem*



*Deforestation caused by settlement within Rubeho ecosystem at Galigali village*





*Illegal logging within Rubeho mountain ecosystem*



*Kibakwe view from Isoliwaya VLFR at Lwihomelo village within Rubeho mountain ecosystem*



**Participatory Forest Resource Assessment (PFRA) at Rubeho mountain ecosystem**



*A team undertaking PFRA exercise with local community within Rubeho ecosystem*



**PFRA team collecting fruits within Rubeho Mountain**



*The PFRA team are collecting indigenous fruits (Uapaca kirkiana)*



## Undisturbed Rubeho Mountain Ecosystem



*Mafwemela forest within Rubeho Mt. ecosystem with a remaining part of undisturbed area*





*Part of Rubeho mountain ecosystem in Lufu village*



## **Agricultural production in Rubeho Mountain Ecosystem**



*Onions are agricultural products at lower altitudes/plateau of Lumuma and depends its water for irrigation from Rubeho mountain ecosystem*

## **Transportation and road condition**



*On the way to Mbuga, one of the village within Rubeho mountain ecosystem*