

Presentation given at the
WCS Workshop on Land Change Modeling for REDD

October 25– 29, 2010

Wildlife Conservation Society - Bronx Zoo
Bronx, New York, USA

Hosted by

Clark Labs and the Wildlife Conservation Society



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REDD Readiness in the Southern Highlands of Tanzania



Southern Highlands Conservation Programme, Tanzania



Based in Mbeya, South West TZ

Southern Highlands
Montane Forest & Grasslands
High Population Density
3000 mm per annum
1500 – 2800 m asl

S. Lake Tanganyika Landscape
Riverine forest strips & miombo
Sparse population density
1000 mm per annum
800 – 1850 m asl

SHCP Goal and Design

SHCP is one of landscape programs of WCS that works in Iringa, Rukwa and Mbeya regions.

The program has employed 34 Tanzanians as full time

SHCP was established 10 years ago in order to conserve and manage key upland species and habitats

The southern highlands of Tanzania are of national importance for their catchment value – WCS' research in the area has also established them as a key conservation priority in the country.

General SHCP Activities

- 1 . Research and monitoring of key issues, habitats and species (fire, montane grasslands, montane forests, kipunji, chimpanzee, abbots duiker, carnivores, reptiles, amphibian, and invertebrates)
2. Community conservation activities in villages (environmental education in school, village conservation groups, tree nursery and planting – woodlots & indigenous reforestation)
3. Protected areas designing and management (Raise status of potential neglected areas e.g. Rungwe, Kitulo, South Tanganyika, Mbizi etc in past ten years)
4. Establishment and ongoing support for botanical research and collections

Tanzanian Forest Resources

Approximately 35.3 million hectares of forests and woodlands
(FAO, 2006)

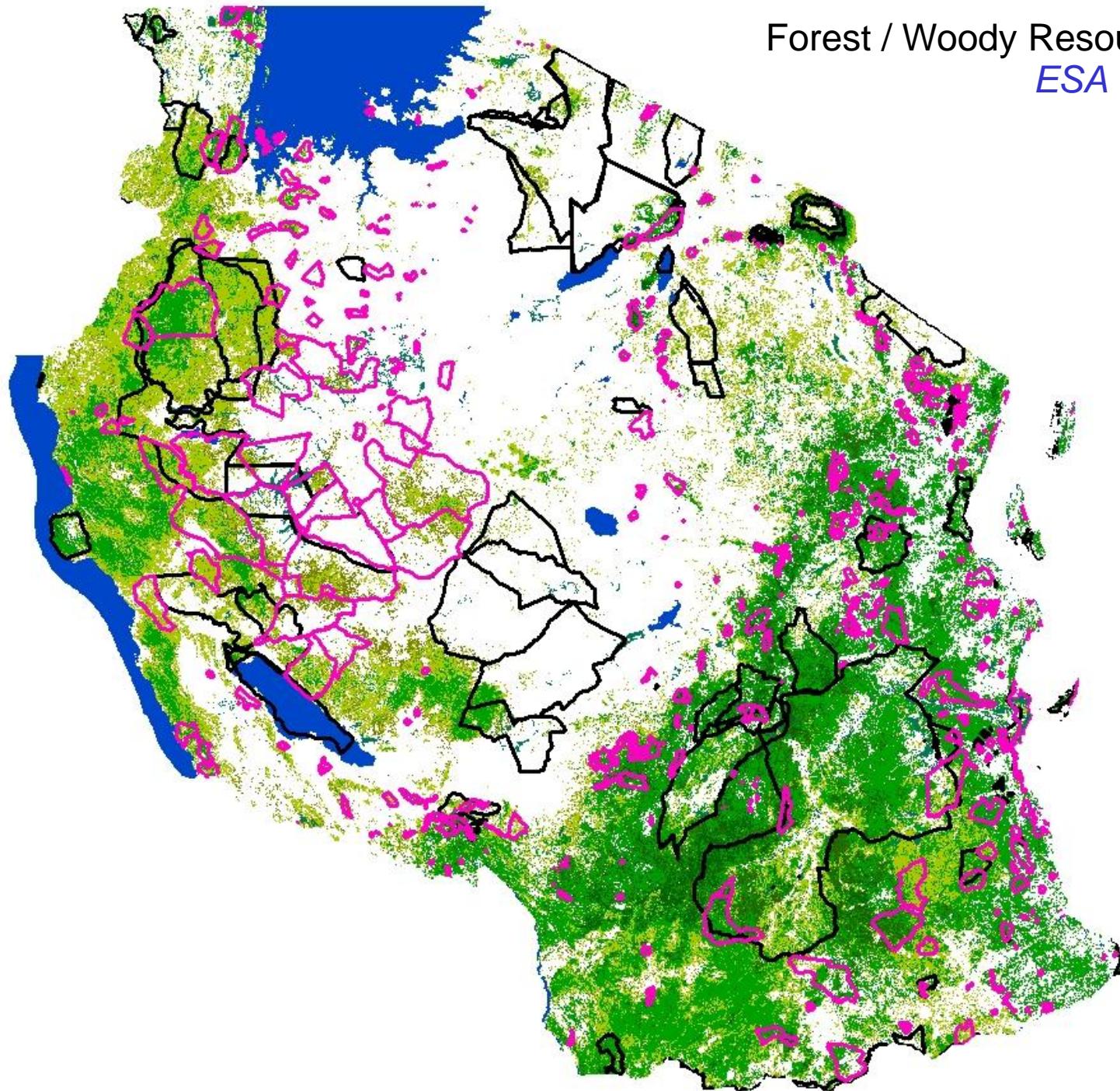
17 million hectares on Village land – referred to in the R-PP as
“General” land

18.3 million hectares are “reserved” forests:

- *1.6 million hectares water catchment, biodiversity and soil conservation*
- *2 million hectares for wildlife conservation*
- *80,000 hectares under plantation forestry*
- *4.1 million under participatory forest management*

NO TZ-specific definition of what constitutes a forest....as far as we are aware

Forest / Woody Resources in Tanzania
ESA Globcover (2005)
WDPA (2010)



REDD in Tanzania – October 2010

Almost ready for “final” submission of Readiness Preparation Proposal (R-PP) for review by Forest Carbon Partnership Facility (FCPF)

Number of government level administrative structures in place:

- *National Climate Change Steering Committee (NCCSC)*
- *National Climate Change Technical Committee (NCCTC)*
- *National REDD Secretariat*
- *National REDD Taskforce*

National Forestry Resources Monitoring and Assessment (NAFORMA) project in progress (early 2012 completion) --- will feed into Tanzanian Forestry Policy 2011 - 2021

Several NGO led REDD Readiness Projects funded by Royal Norwegian Government (NORAD) as part of \$80 million investment in REDD for Tanzania – WCS, Tanzania Forest Conservation Group, CARE

5 Key REDD Research Elements identified by NORAD and National REDD Taskforce

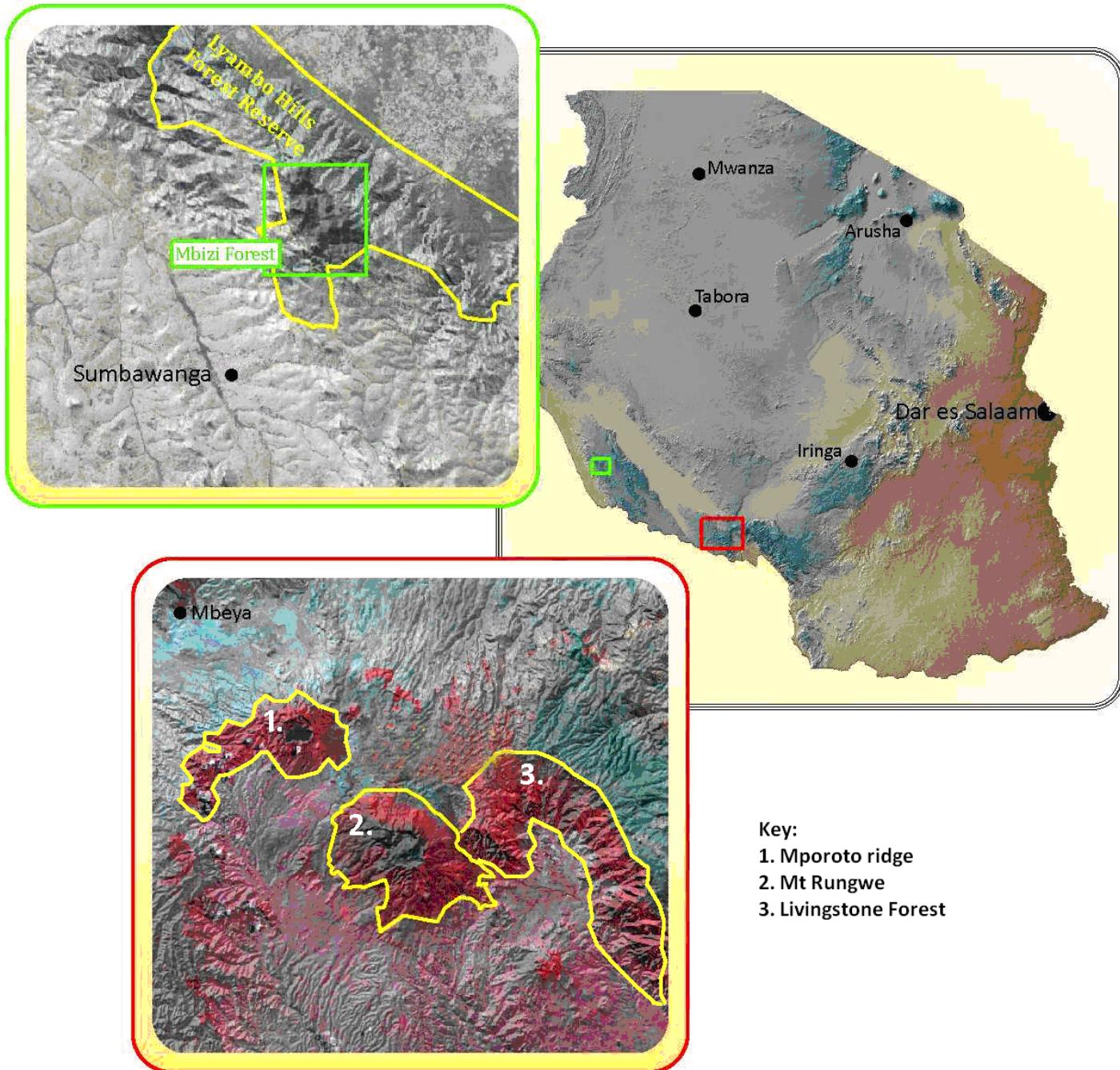
Approaches to organizing REDD work at the local level, with a focus on governance and tenure

Incentive schemes that provided equitable benefit sharing mechanisms, especially to local communities

Baseline studies and methods for estimating deforestation, carbon sequestration and emissions

Participatory methods for monitoring, assessing, reporting and verifying

Approaches that address drivers of deforestation and forest degradation



WCS/SHCP REDD Baseline Forests

Total Area –526.8 km² *Mporoto (93.3 km²), Rungwe (136.5 km²), Livingstone (260 km²) and Mbizi (37 km²)*

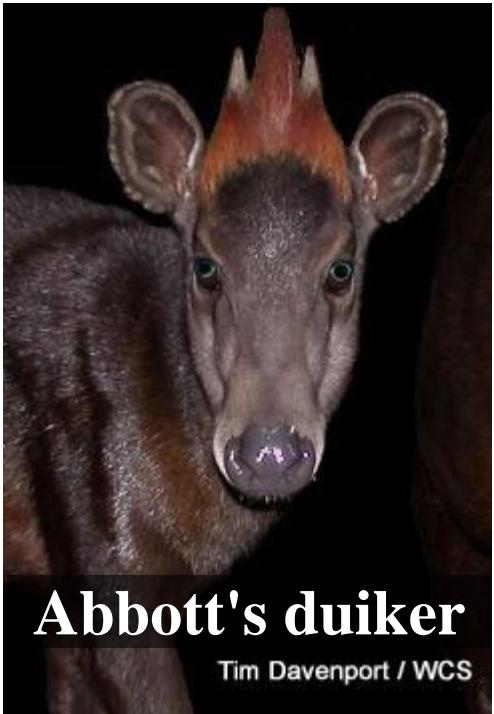
Mporoto, Rungwe and Livingstone

- Tanzania's wettest forest protected areas, receiving 3000 mm + per year
- Range of endemic species including the kipunji and Rungwe galago
- Catchments support broad range of economic activity and some of the highest population densities in Tanzania

Mbizi

- Described as Tanzania's only cloud forest
- Last remnant of Euphorbia dominated Ufipa-Congolian habitat in Tanzania
- Threatened and genetically distinct population of red colobus
- Only remaining significant forested area within the Lyambo Hills Forest Reserve

WCS TZ Priority Species



Abbott's duiker

Tim Davenport / WCS

Endangered



African clawless otter

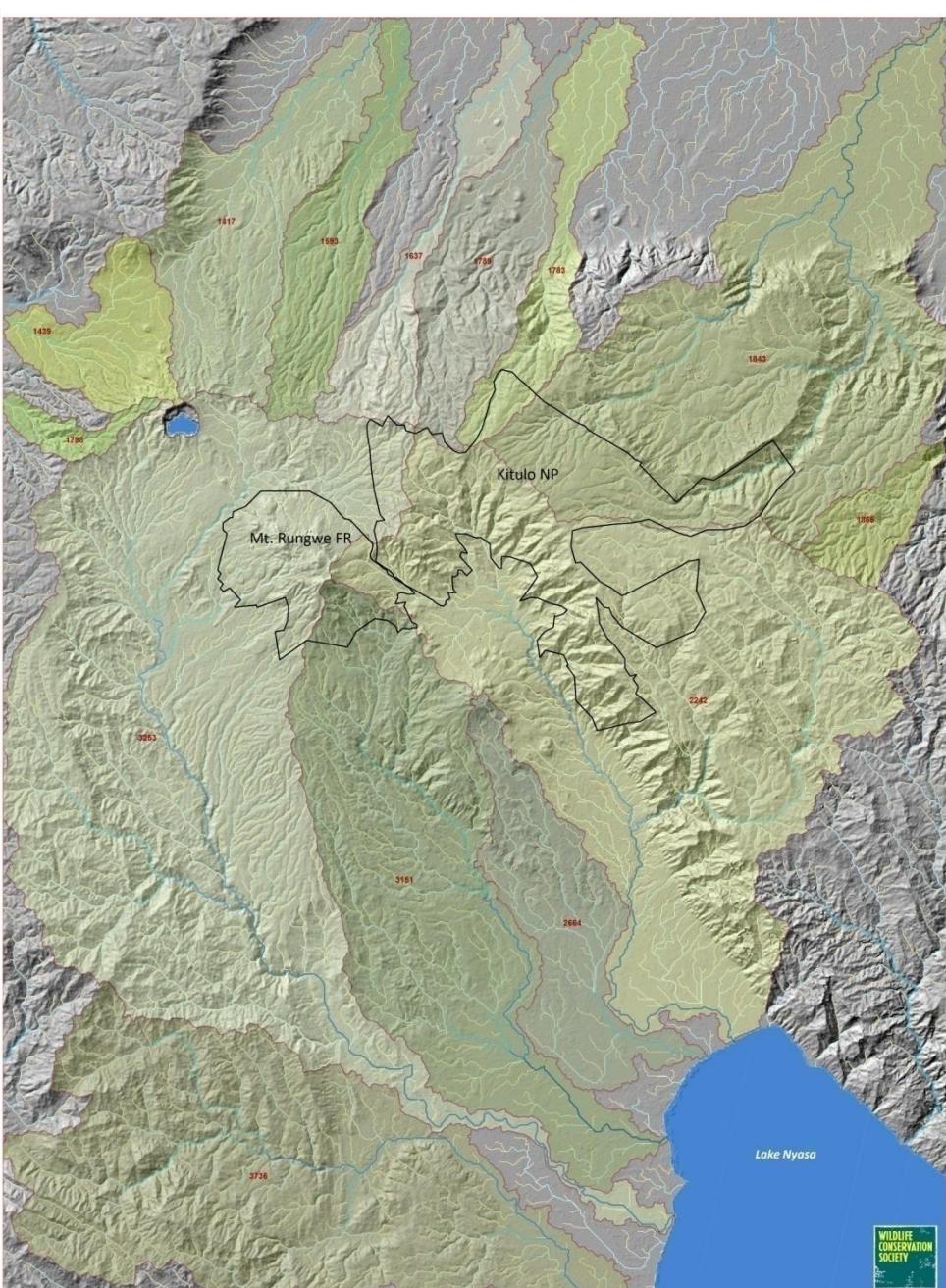
Critically Endangered
Stable



Rungwecebus kipunji

©2005 Tim Davenport / WCS

(hydrological) Ecosystem services



Major Drainage Basins

This map was developed from ASTER Global Digital Elevation Model (30m).
"Streams" were extracted by calculating flow accumulation in each cell of the elevation data.
Basin polygons were created using the ArcGIS Spatial Analyst Basin tool.

0 3.75 7.5 15 Kilometers

ID	Area_km2	Area_ha	ID	Area_km2	Area_ha
1417	322.676	32.22	1843	977.502	97.75
1439	137.182	13.72	1849	75.95	7.59
1520	367.113	36.71	2242	135.044	13.50
1637	157.577	15.76	2664	258.399	25.84
1783	171.177	17.12	3151	714.115	71.41
1789	228.546	22.85	3253	1562.411	156.24
1798	36.167	3.61	3736	943.632	94.36

Approximately 80% of Tanzania's electricity

Tens of Millions of people

Ruaha National Park ecosystem
(hippo, elephant, kudu, wild dog, lion,
numerous birds...etc.)

Approximately 3 Million People

Artisanal fisheries & agriculture

Multi million \$ commercial agriculture

Avocado

Rice

Cocoa

Sugar Cane

Habitat for African clawless otter (*Aonyx capensis*)

North / North West

South / South East

Deforestation and Degradation

Village locations, population density, continual and sustained use of the forest, Mt. Rungwe fire

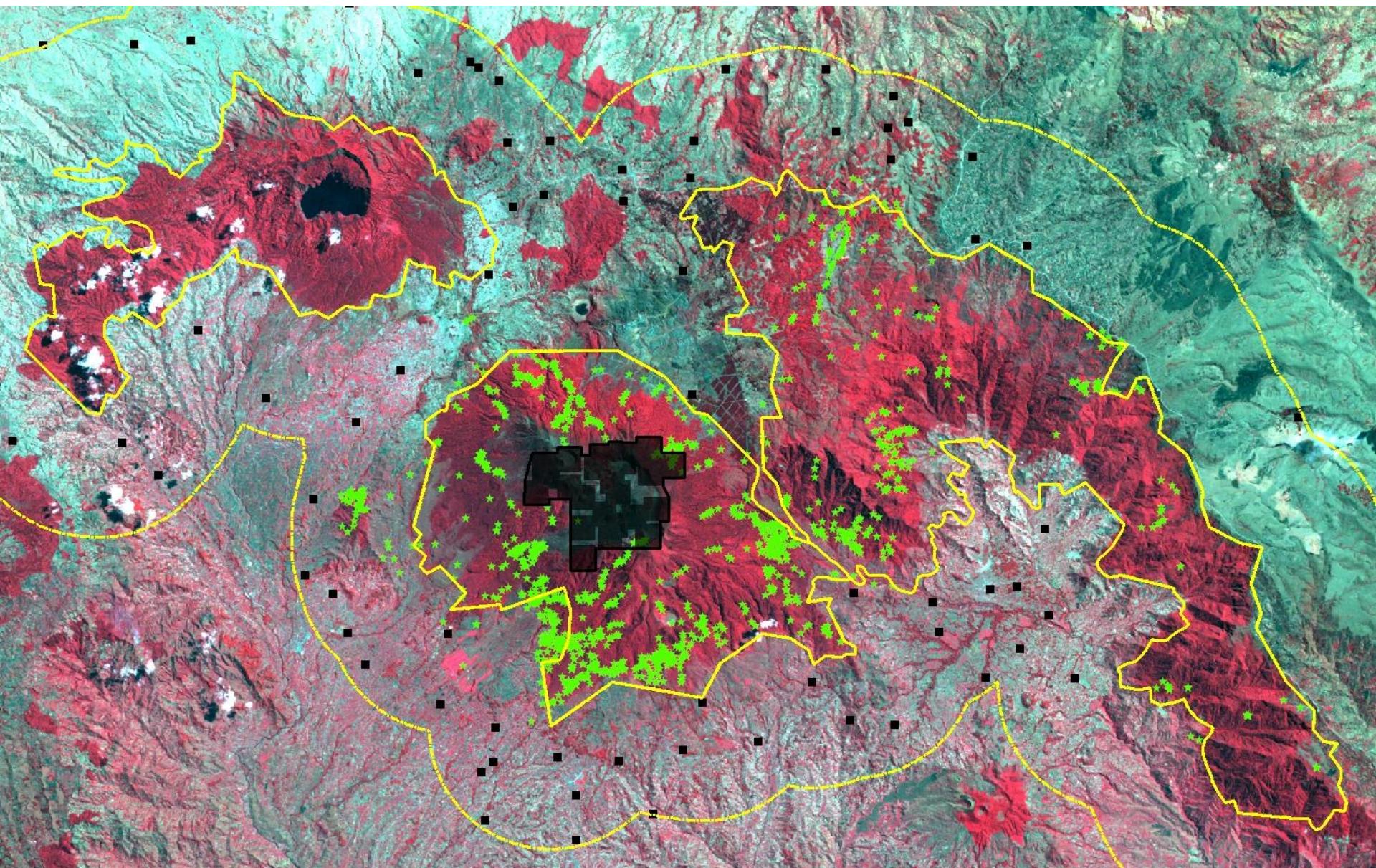
Causes of forest degradation – fuelwood collection, timber, charcoal, msafwa hunting practices, agriculture, medicinal plant collection, honey harvesting, fire

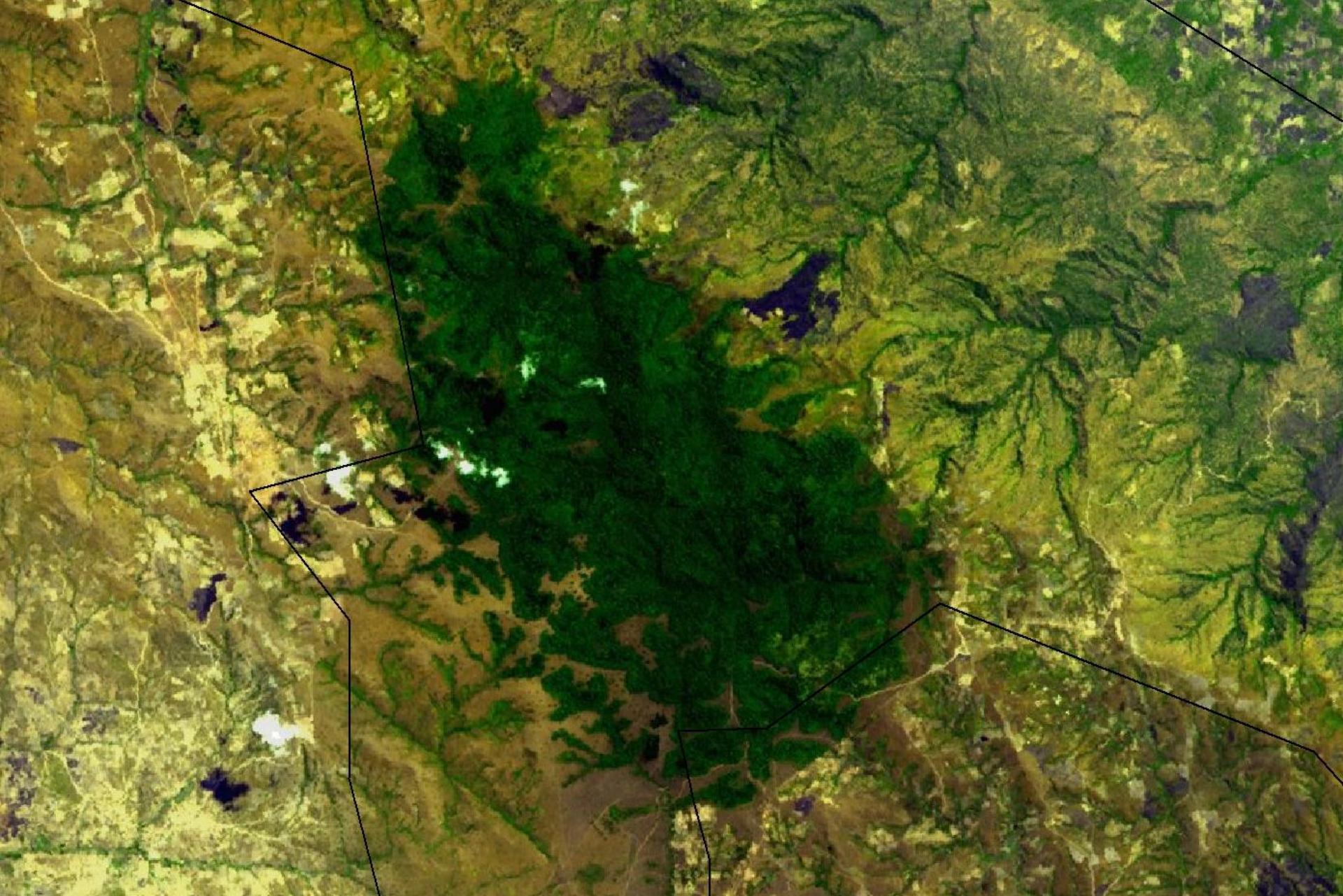
Change in Boundaries – small change for Rungwe forest boundary, and finger effect around Mbizi due to repeated burning

Other activities – e.g. Brick making & new roads on Mt. Rungwe (visible from aerial photos)

D-D threshold?

(Poroto) – Rungwe – Livingstone Forest Areas, Settlements and Forest Degradation





TERRA LOOK – ASTER
21 September 2001

REDD Readiness in the Southern Highlands - overview

Norwegian government has committed approximately \$80m to REDD preparedness in Tanzania

The activities will encompass carrying out a robust baseline study and provide methods for estimating deforestation and forest degradation, carbon sequestration and emissions, as well as participatory monitoring in the four most important forests in the Southern Highlands.

Implement a programme that will provide benefit sharing to local communities, environmental education, reforestation programs and establishment of woodlots to address the drivers of local forest degradation.

REDD Readiness in the Southern Highlands - approaches

Optical and RADaR based deforestation and degradation monitoring (past 15 years – 15 years into future)

Near real-time fire monitoring and SMS based early warning

Forest biomass plot measurement

Honey production and marketing

Woodlot establishment

Socio-economic & carbon usage surveys

Leakage monitoring system

Environmental education

Development of baseline land-use maps and reference emission levels

Carbon stock and emissions calculations

Participatory field surveys & monitoring

Development of future land cover change scenarios

WebGIS

Social Impact Assessment

A few minor challenges?

Most Urgent



Communities & benefit sharing
(*and biodiversity conservation*)

Policy development

Administrative

Technical

*Impact of climate change
on carbon stocks?*

Economic

Extreme disturbance?



**ASANTENI !
THANKYOU !**