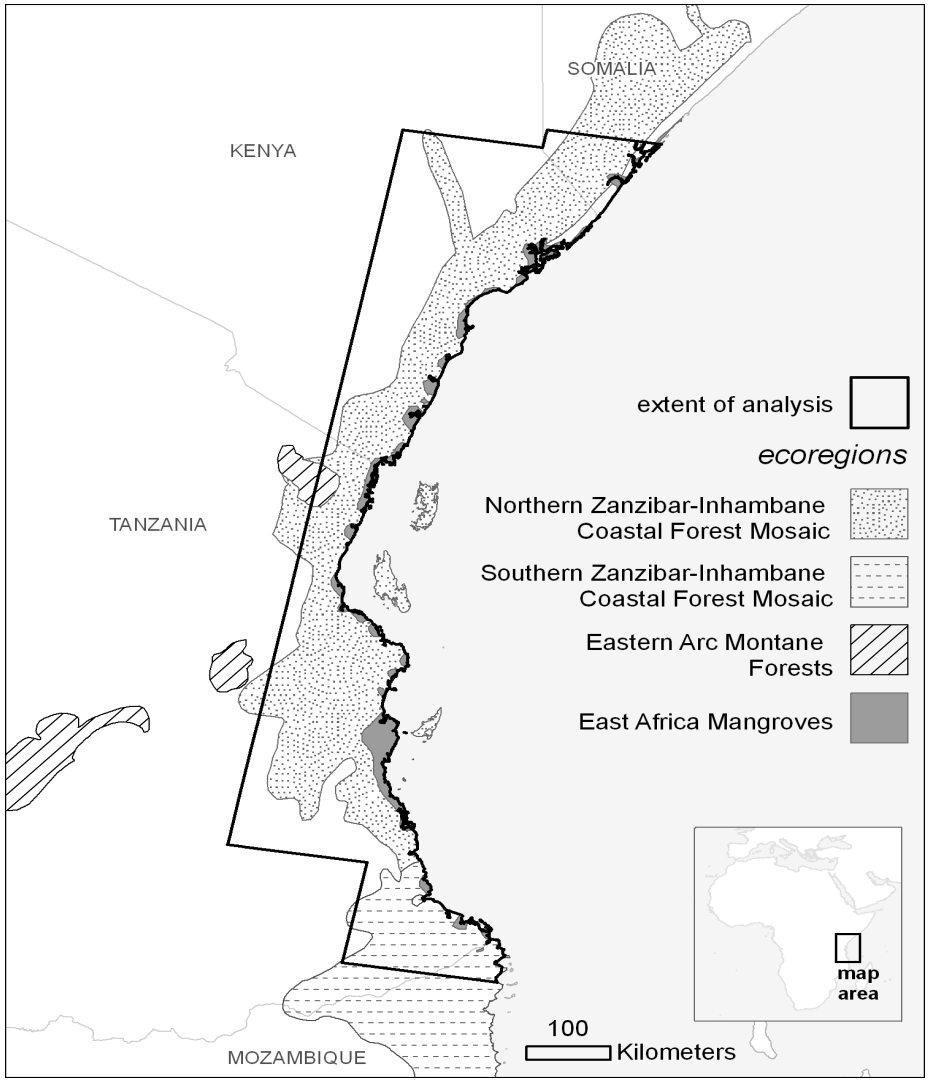
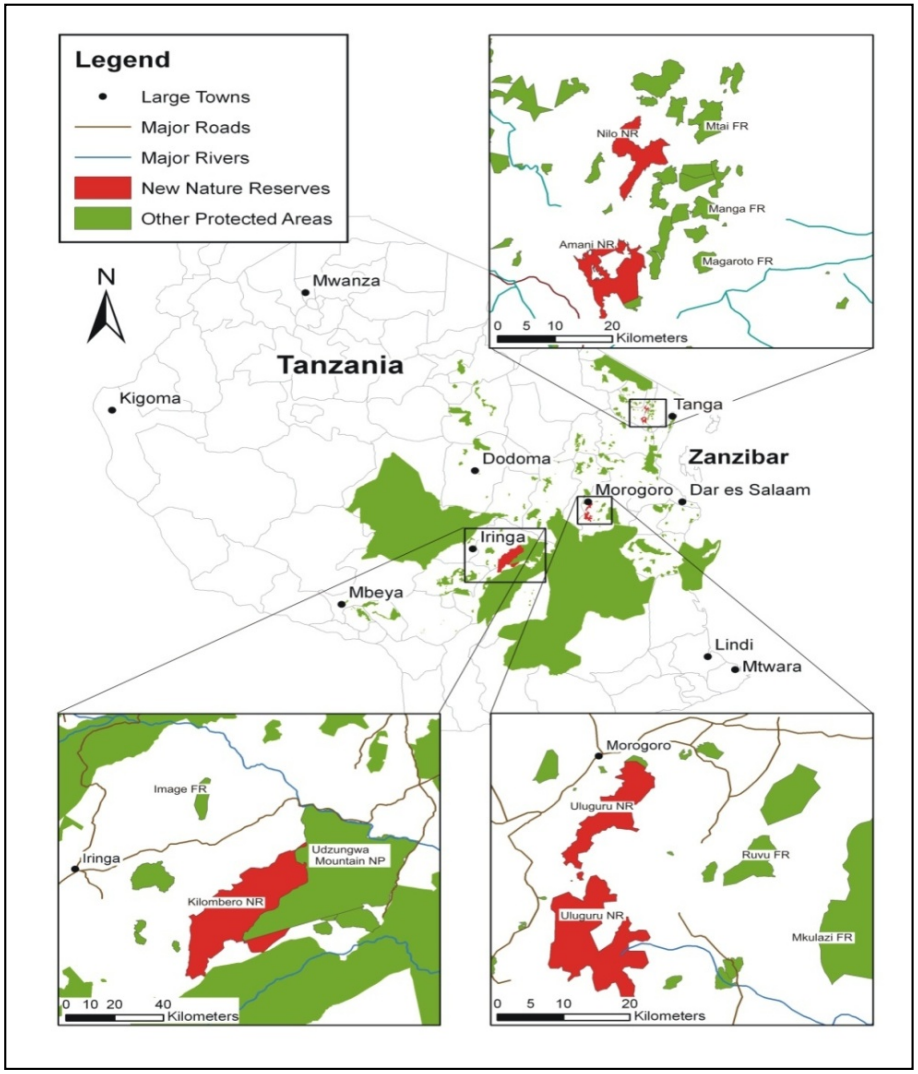
Eastern Arc Mountains (EAMs) and Coastal Forests of Tanzania





The EAMs and Coastal Forests: Biodiversity Importance:

- EAMs comprise only **0.1 percent** of tropical Africa's land area yet contain **13 percent** of the entire continent's vascular plants.
- Over **25 percent** (800 species) of the Eastern Arc plant species are endemic while **60 percent** of all Tanzanian endemic plants occur in the EAMs (Rodgers, 1993; Hamilton and Mwasha, 1989).
- Current data indicate that the Coastal Forests Hotspot contains over 4,000 plant species in more than 1,000 plant genera, of which around 1,750 plant species and 27 genera are endemic.
- Some 201 mammal species are recorded from this hotspot, of which 14 are endemic. 247 reptiles are recorded, 132 species are endemic or near-endemic to the hotspot.

Carbon Values in Tanzanian Forests

TABLE 1 The nine main forest types in Tanzania, with a brief description of their structure, height and biological values, historical (pre-1850) area, area in 1990 and 2000 (where known), percentage loss from 1990 to 2000, estimates of carbon (stem, branches and roots; not soil carbon) in pristine and degraded forest, and indicative loss through degradation.

Forest type	Description	Historical area (ha)	Area in 1990 (ha)	Area in 2000 (ha)	% loss 1990–2000	Carbon in pristine forest (t ha^{-1})[1]	Carbon in degraded forest (t ha^{-1})[1]	Loss (t ha^{-1})[1]
Miombo woodlands[2,3]	Closed canopy forest on poor soils; deciduous in dry season; to 30 m; moderate biodiversity value	40% of land area (estimate)[4]	Only partial data[2]	Only partial data[2]	13[2]	70[1,3]	40[1,3]	30[1,3]
Acacia savannah	Open canopy forest in dry areas; deciduous in dry season; to 20 m; moderate biodiversity value	No data	No data	No data		No estimates available	No estimates available	
Eastern Arc Mountains (upper montane & montane forest areas)[5]	Closed canopy evergreen forest on crystalline mountains; to 40 m; exceptional biodiversity value	1,799,200	355,000	353,100	1[5]	306[1,6]	83[1,6]	223[1,6]
Kenya/Tanzania mountains	Closed canopy evergreen forest on volcanic mountains; to 40 m; high biodiversity value	No data	No data	No data		No estimates available	No estimates available	
Eastern African coastal forest mosaic[7]	Semi-evergreen closed canopy forest within a mosaic of other vegetation types located along E coast; to 30 m; high biodiversity value	1,500,000	704,200	684,100	7[7]	157[1]	33[1]	124[1]
Guineo-Congolian forests[3,8]	Closed canopy evergreen forest found in NW lowlands; to 50 m; high biodiversity value	< 1,000,000	No data	670,000		No estimates available	No estimates available	
Mangrove forests[9]	Closed canopy evergreen forest in marine mud; to 25 m; low biodiversity value	No data	109,500	108,100	2[9]	No estimates available	No estimates available	
Albertine rift forests	Closed canopy evergreen forest on crystalline mountains; to 40 m; high biodiversity value	No data	No data	No data		No estimates available	No estimates available	
Southern rift forests	Closed canopy evergreen forest on crystalline mountains; to 40 m; high biodiversity value	No data	No data	No data		No estimates available	No estimates available	

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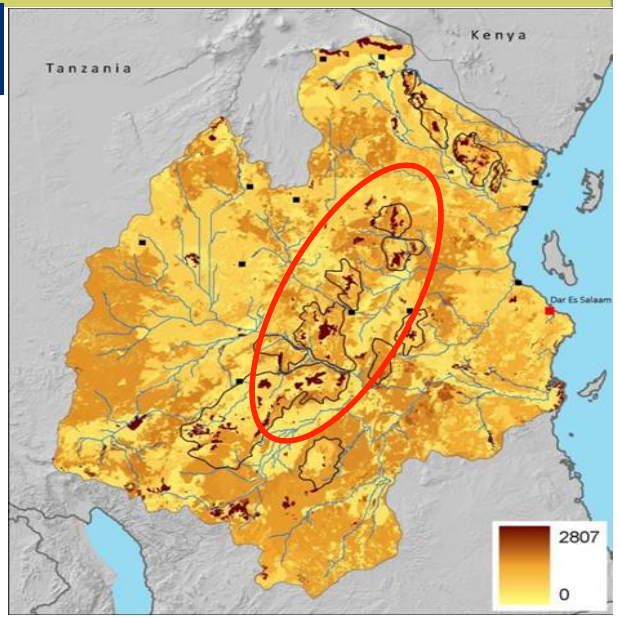
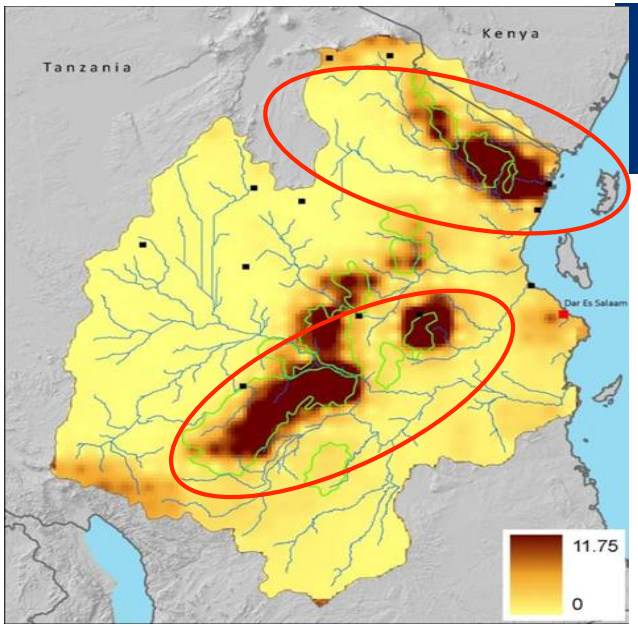
How much carbon is stored in Tanzania

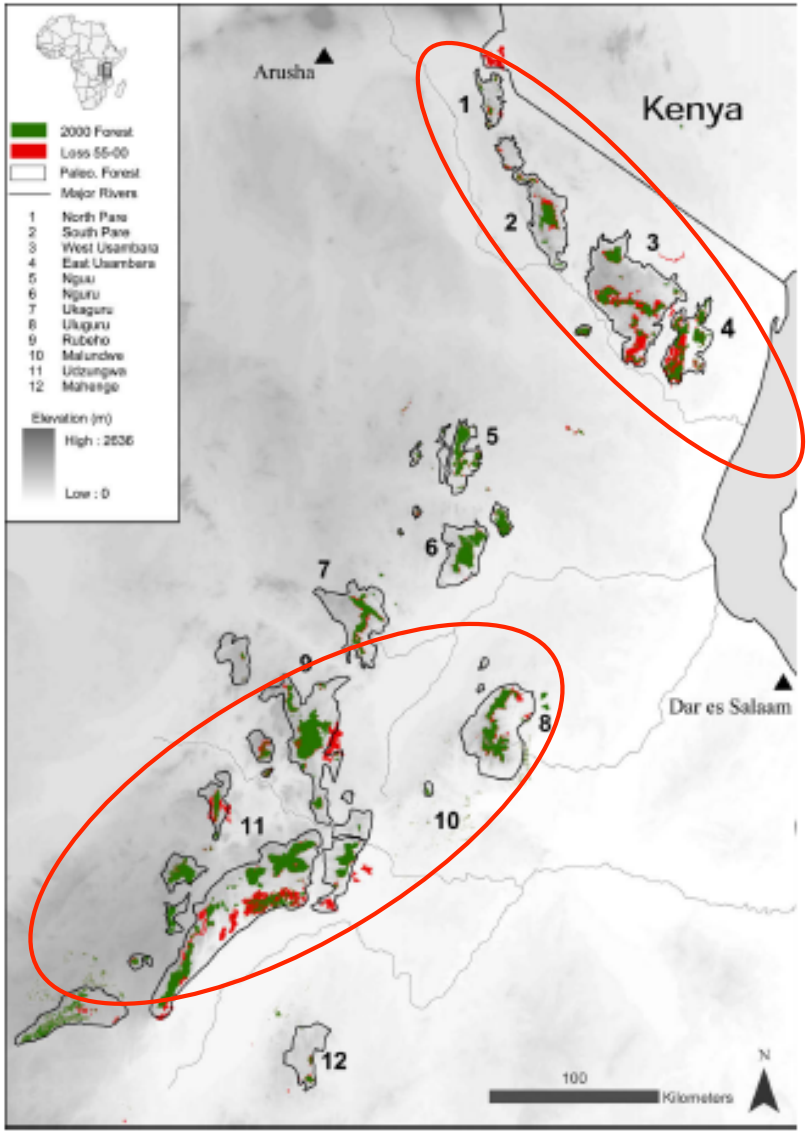
- Map of carbon storage in eastern Tanzania, 5 pools for each land cover
- The darker the brown color of an area, the greater the amount of stored carbon
- Helps: REDD



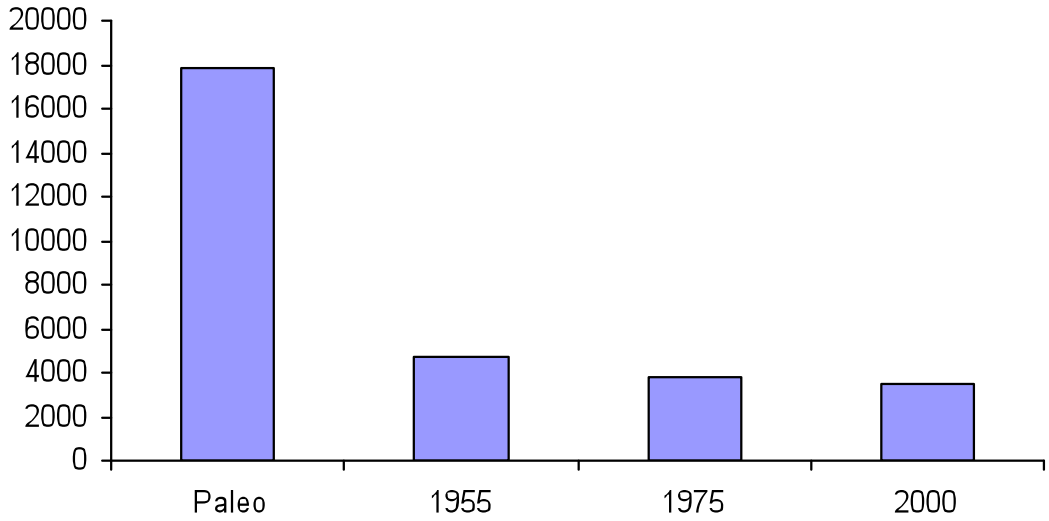


How do priorities for ecosystem services map onto priorities for biodiversity conservation

- Important areas for forest birds.
- Darker brown areas have the highest concentrations of forest birds.
- Outlines of the Eastern Arc Mountain blocks are shown in green.



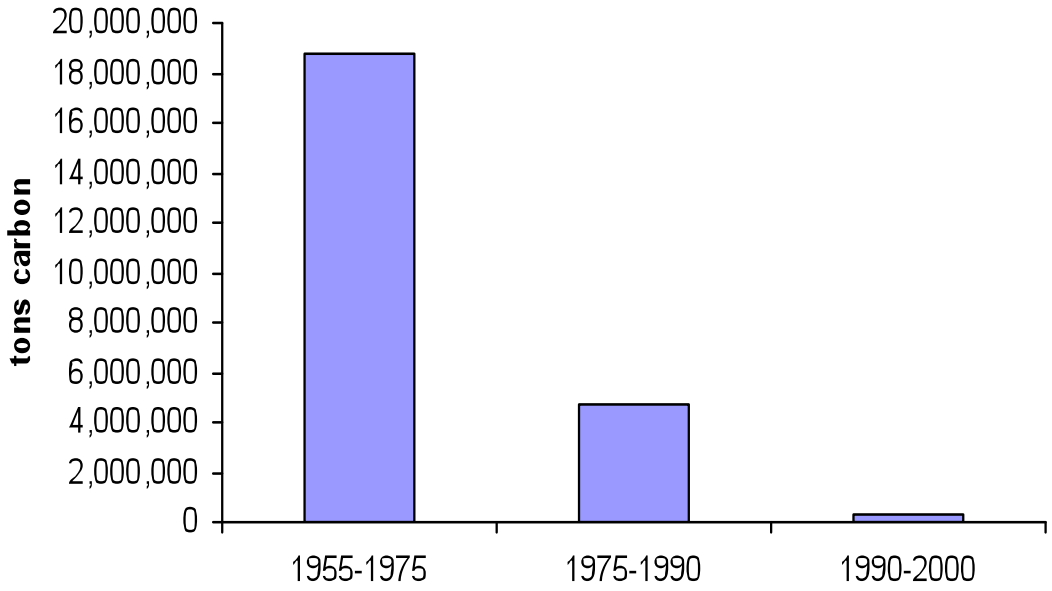
Eastern Arc Mountains Forest Loss



Carbon Loss in the Eastern Arc

- In pristine forests carbon sequestration is 300 tons/ha
- In degraded forests carbon sequestration is 80 tons/ha
- Average figure is around 200 tons /ha

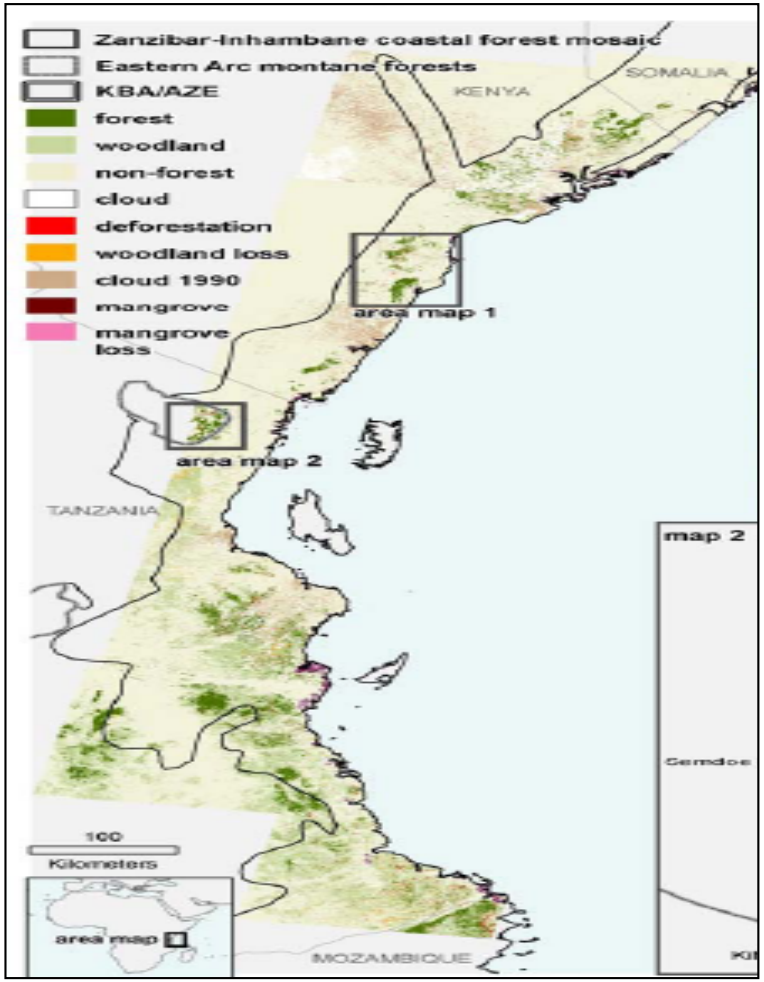
Carbon losses since 1955 -Slowing in recent years as boundaries of reserves are reached



Forest Cover and Change: Coastal Forests

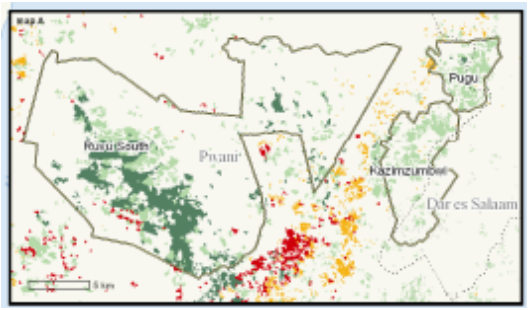
Key facts:

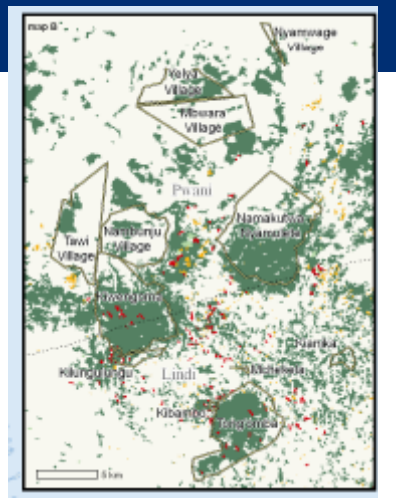
- ~6820 km2 of coastal forest habitat remained in ~2000 (2260 km2 in Kenya and 4560 km2 in Tanzania).
- Total of 424 km2 (6%) of forest cleared between ~1990 and ~2000; 53 km2 in Kenya and 371 km2 in Tanzania.
- Rates of forest loss were 8 times higher in unprotected areas than in protected sites



Matumbi Hills
200 km south of Dar

Reserves near Dar es Salaam

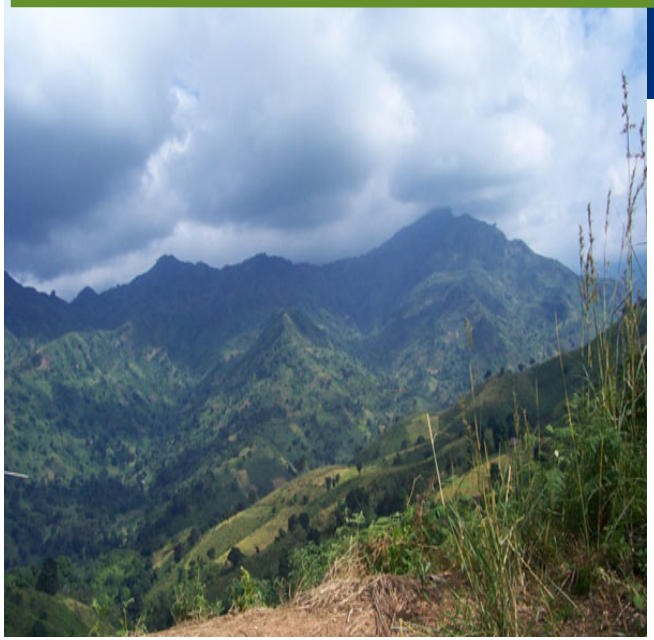




Emissions rates from Tanzanian Districts

Table 01 - Forest loss and emissions among districts in Tanzania 1990-2000-2007

Region	Forest cover ~1990 ha	Forest cover ~2000 ha	Forest cover ~2007 ha	Yearly forest change 1990-2000 ha/y	Yearly forest change 1990-2000 %/y	Cloud factor 1990-2000 %	Yearly forest change 2000-2007 ha/y	Yearly forest change 2000-2007 %/y	Cloud factor 2000-2007 %	Yearly emission rate 1990-2000 tCO2e/y	Yearly emission rate 2000-200 tCO2e/y
Dar es Salaam	2,007	650	385	66	-7.9	3	1	-0.2	14	553	4
Lindi	152,026	141,977	114,789	1,106	-0.8	100	181	-0.2	91	267,524	56,[illegible]6
Mtwara	[illegible]	29,601	16,942	1,553	-4.2	100	103	-0.6	59	198,132	16,042
Pwani	201,132	165,714	121,844	1,537	-0.9	54	908	-0.7	58	151,151	125,521
Tanga	22,023	20,390	19,749	57	-0.3	60	0	0.0	55	14,574	0
total	*420,765*	*358,333*	*273,709*	*3,735*	*-0.98*	*67*	*1,233*	*-0.44*	*65*	*631,933*	*198,154*



Inside and outside reserves 1990-2000

Table 02 - Forest loss and emissions for inside versus outside reserves, mai in Tanzania 1990-2000-2007

	Forest (defor base) 1990 ha	Forest cover ~2000 ha	Yearly forest change ~1990-~2000 ha/y	Yearly forest change ~1990-~2000 %/y	Cloud factor 1990-2000 %	Proportional of total forest loss %
1990-2000						
inside	105,199	107,916	157	-0.2	94	4
outside	289,962	288,807	3,577	-1.3	63	96
total	395,150	358,333	3,734	-1.0	67	100