



# UN-REDD PROGRAMME

The United Nations Collaborative Programme  
on Reducing Emissions from Deforestation and  
Forest Degradation in Developing Countries

## TANZANIA

### Mapping of co-benefits

Workshop on Monitoring,  
Reporting and Verification

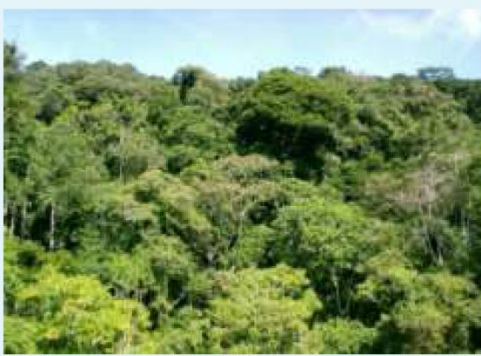
3-5 February 2010

Dar es Salaam, Tanzania



# UN-REDD in Tanzania

- UN-REDD pilot country
- Reducing deforestation & forest degradation to reduce GHG emissions
- Forests cover 33.5 million ha, 40% of land area
- The UN-REDD Programme will align with the National Forest Programme (2001-2010)
- Tasks include capacity building for:
  - REDD design & implementation
  - governance
  - Monitoring
    - Mapping carbon and cobenefits





## About UNEP-WCMC

[About our offices](#)[Strategic Plan](#)[Directions](#)[Staff List](#)

The UNEP World Conservation Monitoring Centre (UNEP-WCMC) is a collaboration between the [United Nations Environment Programme](#), the world's foremost intergovernmental environmental organization, and [WCMC 2000](#), a UK-based charity.

### Our Vision

A world where biodiversity counts

### Our Mission

To evaluate and highlight the many values of biodiversity and put authoritative biodiversity knowledge at the centre of decision-making

### Our Goal

To be an internationally recognised Centre of Excellence for the synthesis, analysis and dissemination of global biodiversity knowledge, providing authoritative, strategic and timely information for conventions, countries, organizations and companies to use in the development and implementation of their policies and decisions.

### Our Mandate

The Centre has a mandate from the UNEP Governing Council to provide a range of biodiversity-related services to UNEP, the biodiversity-related conventions and their constituent party-states and other bodies in the non-governmental and private sectors (Decision GC 22/1/III).

Other more specific mandates derive from the UNEP Governing Council, decisions taken by Conferences of the Parties to specific international conventions, the World Parks Congress and elsewhere.





# Mapping carbon and cobenefits



FBD & UNEP-WCMC workshop, Nov 2009:

Map-based approach to estimating carbon stocks

- Total carbon = carbon in above ground biomass + below ground biomass + carbon in soil
- Carbon in deadwood and litter pools are absent



Overlays with:

biodiversity priority areas

honey production priority areas

protected areas

population

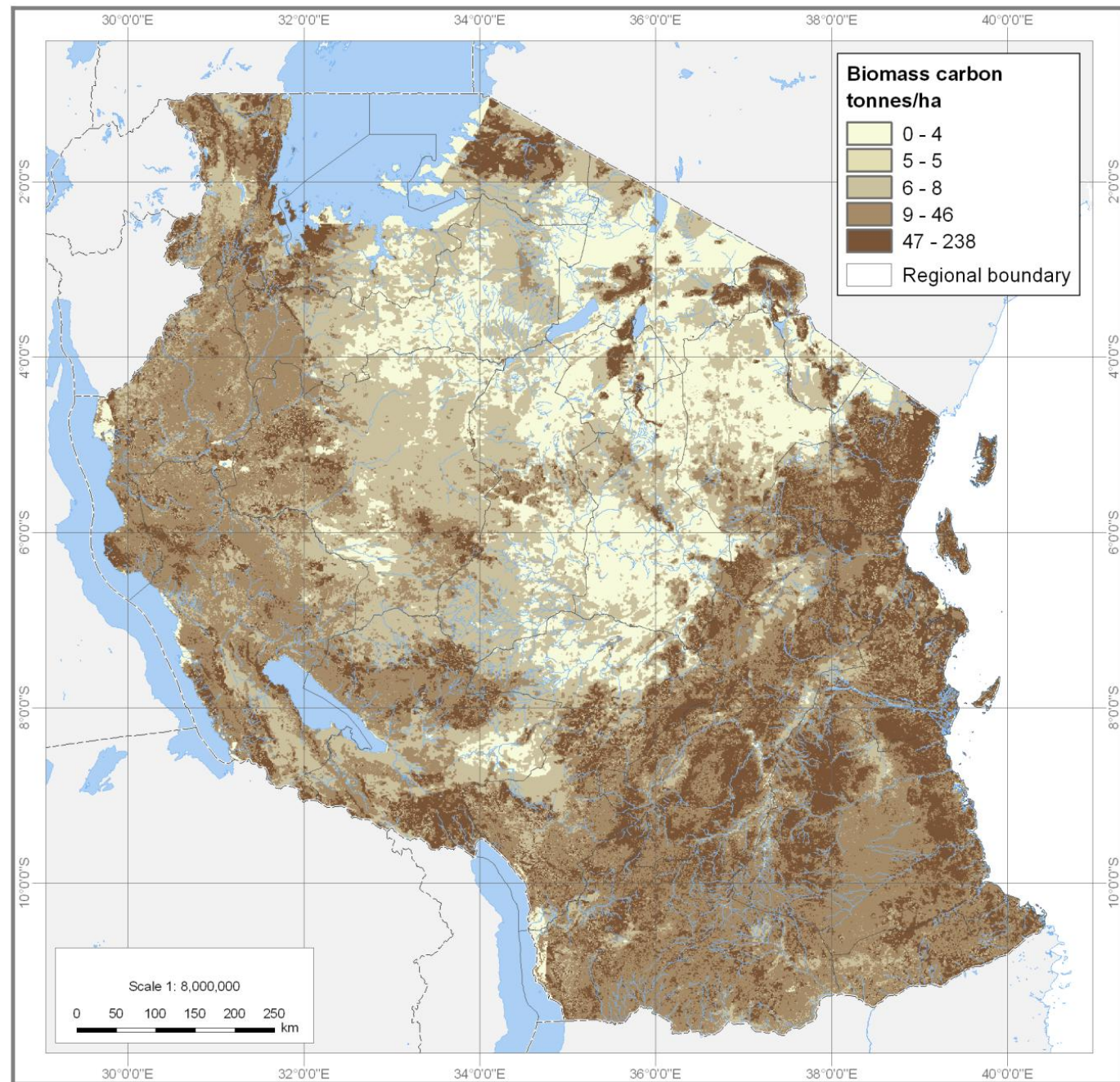
fire







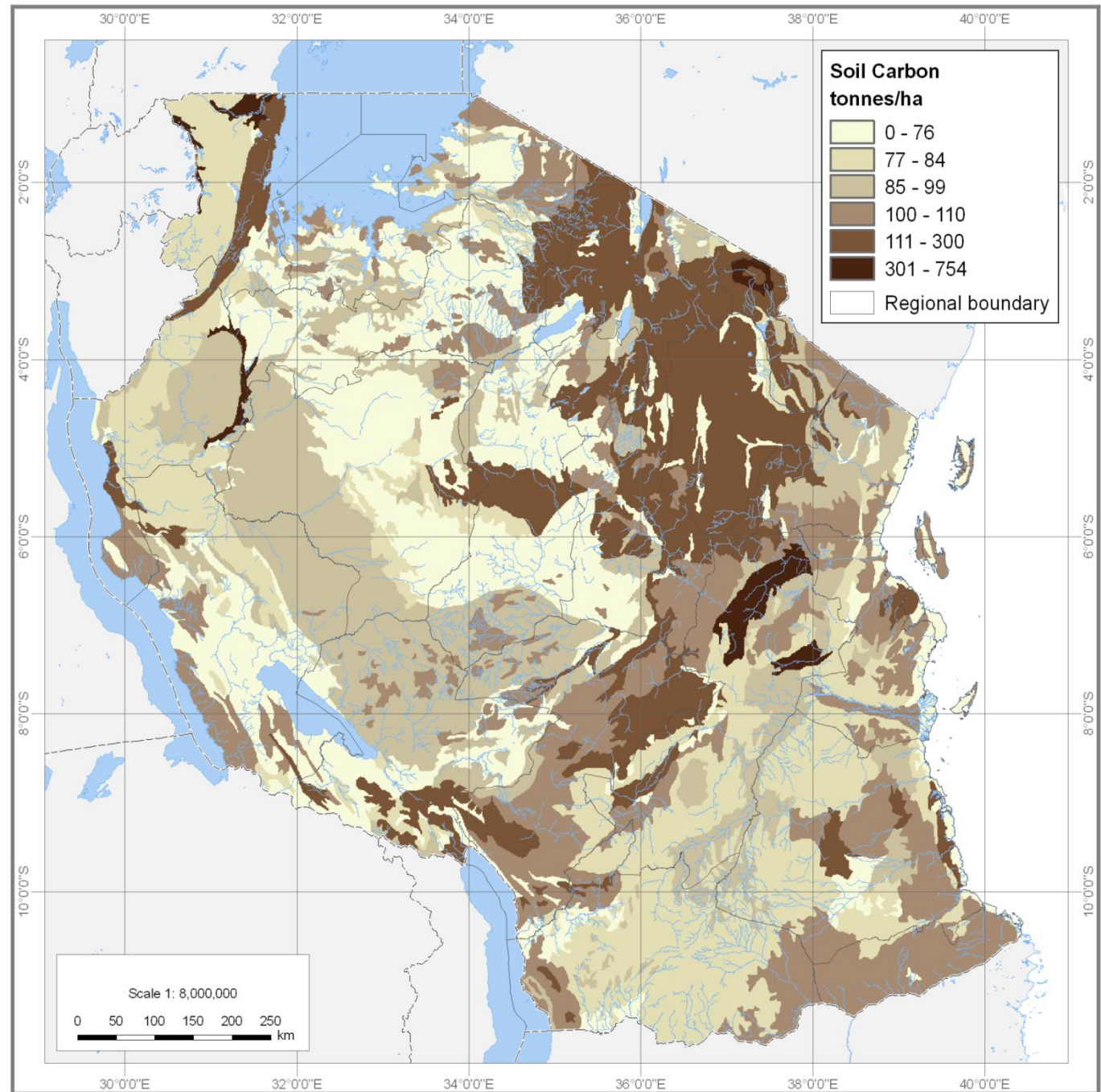
Biomass carbon density map based on Baccini *et al.* 2008, IPCC 2006 and FAO ecological zones







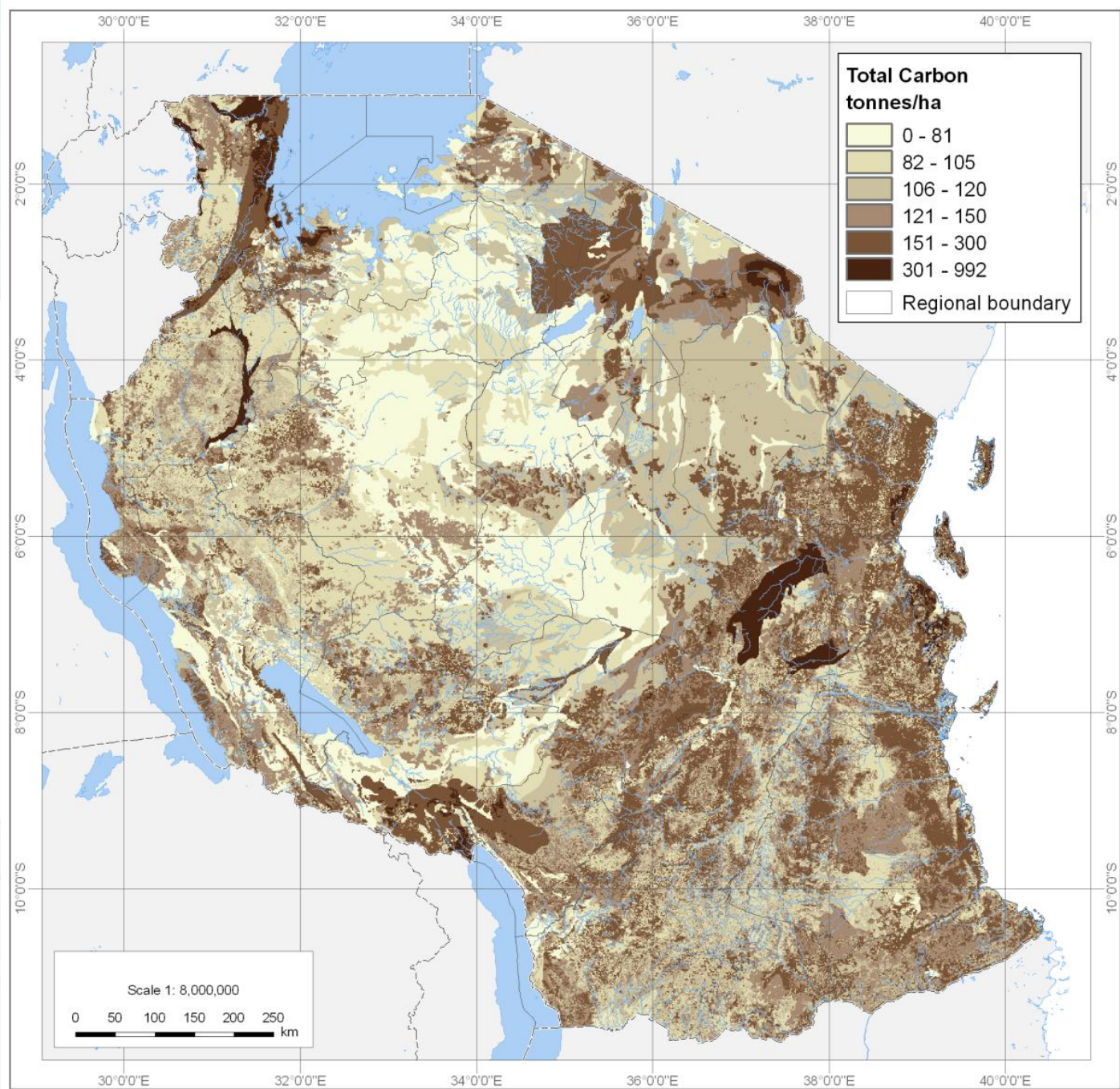
Soil carbon density map from Scharlemann *et al.* 2009



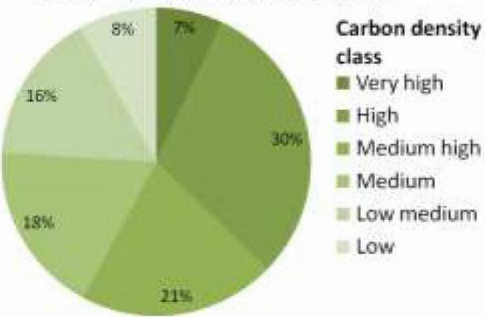




Total carbon density map, combining soil and biomass carbon maps



Total carbon estimate: 11.4 Gt

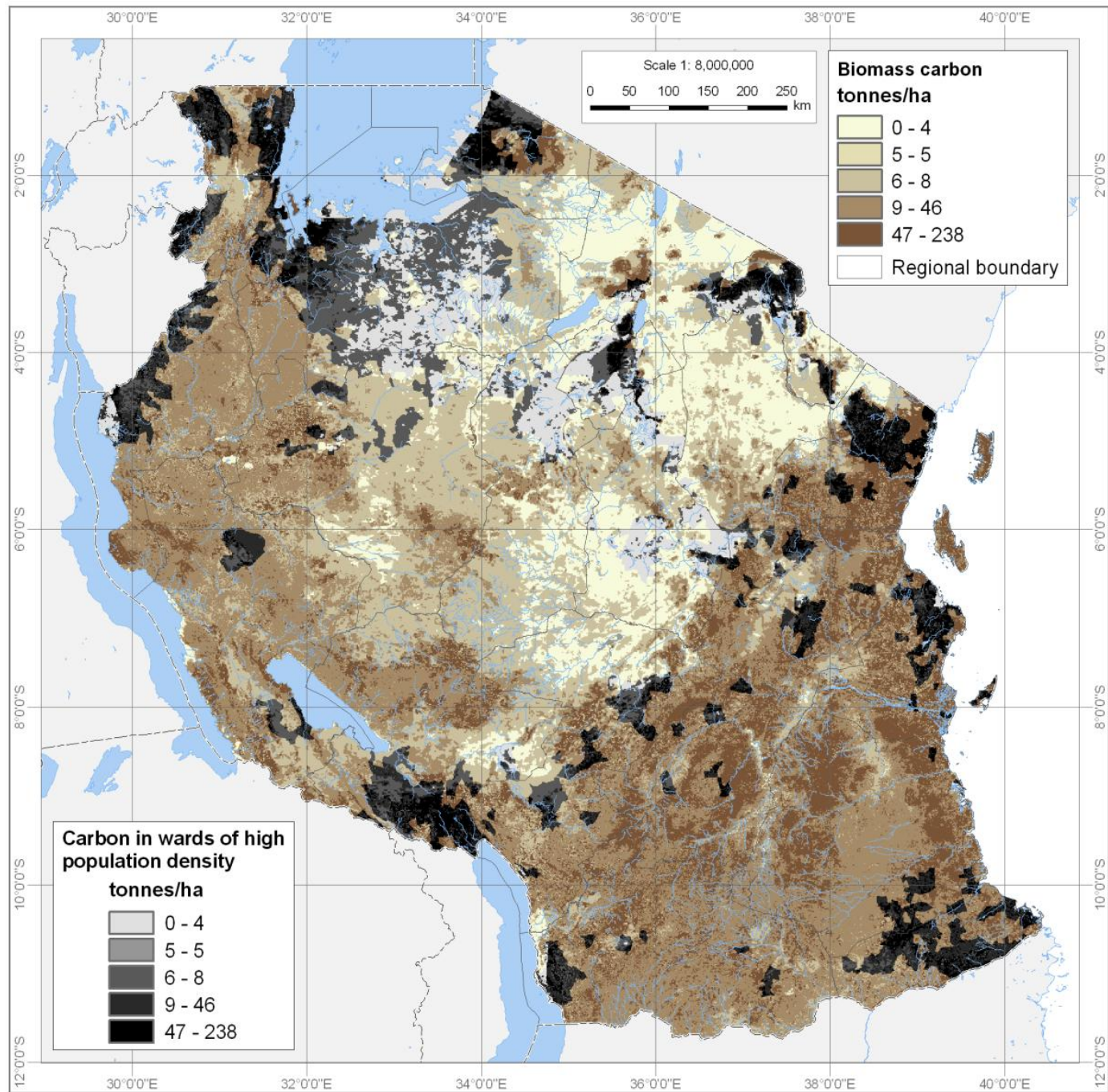






People that may be affected by REDD.

Areas of high population density (>5136 people/ha, 2002) overlaid with carbon density (biomass).

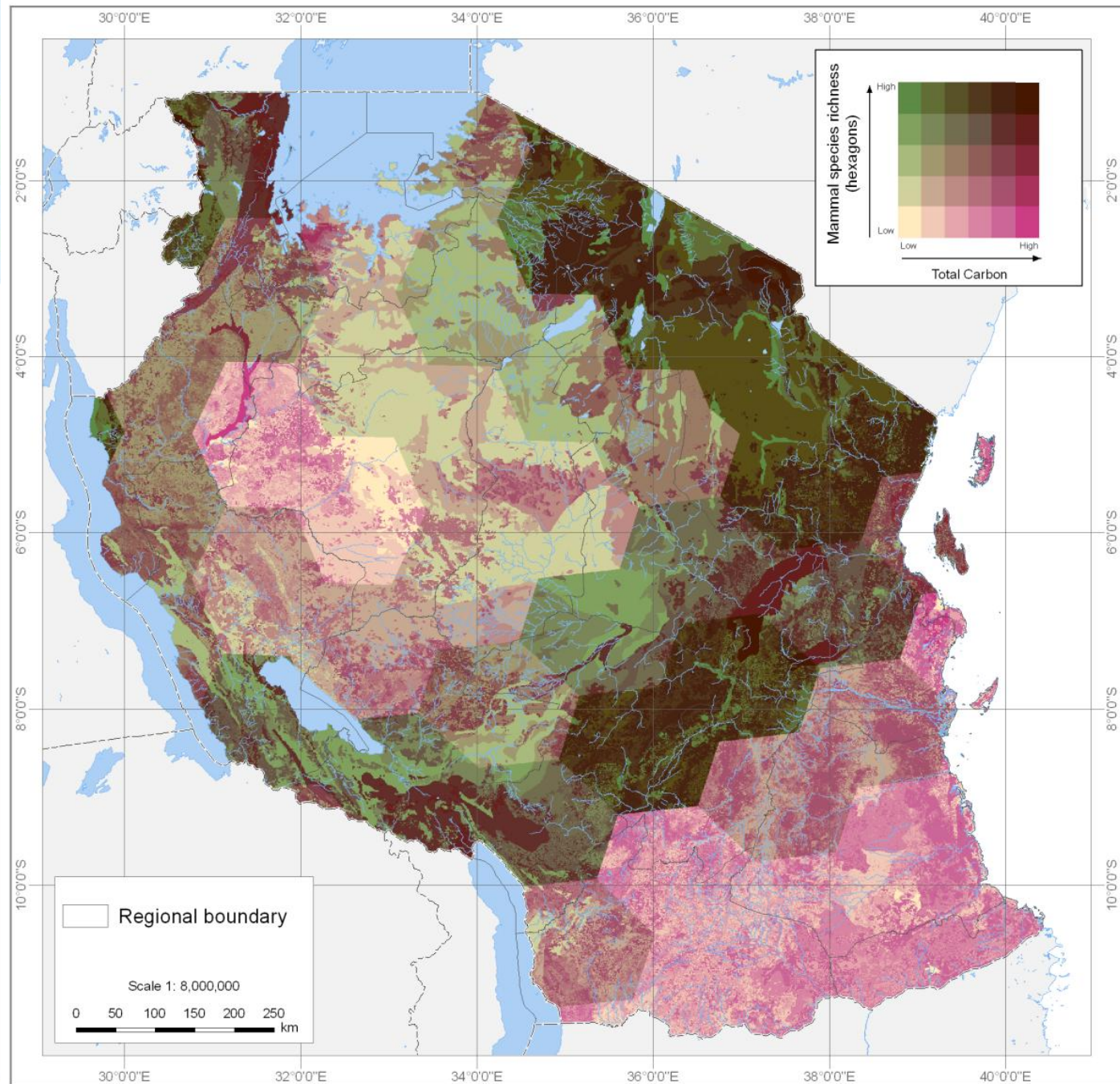






Mammal species richness (hexagons) mapped against biomass carbon

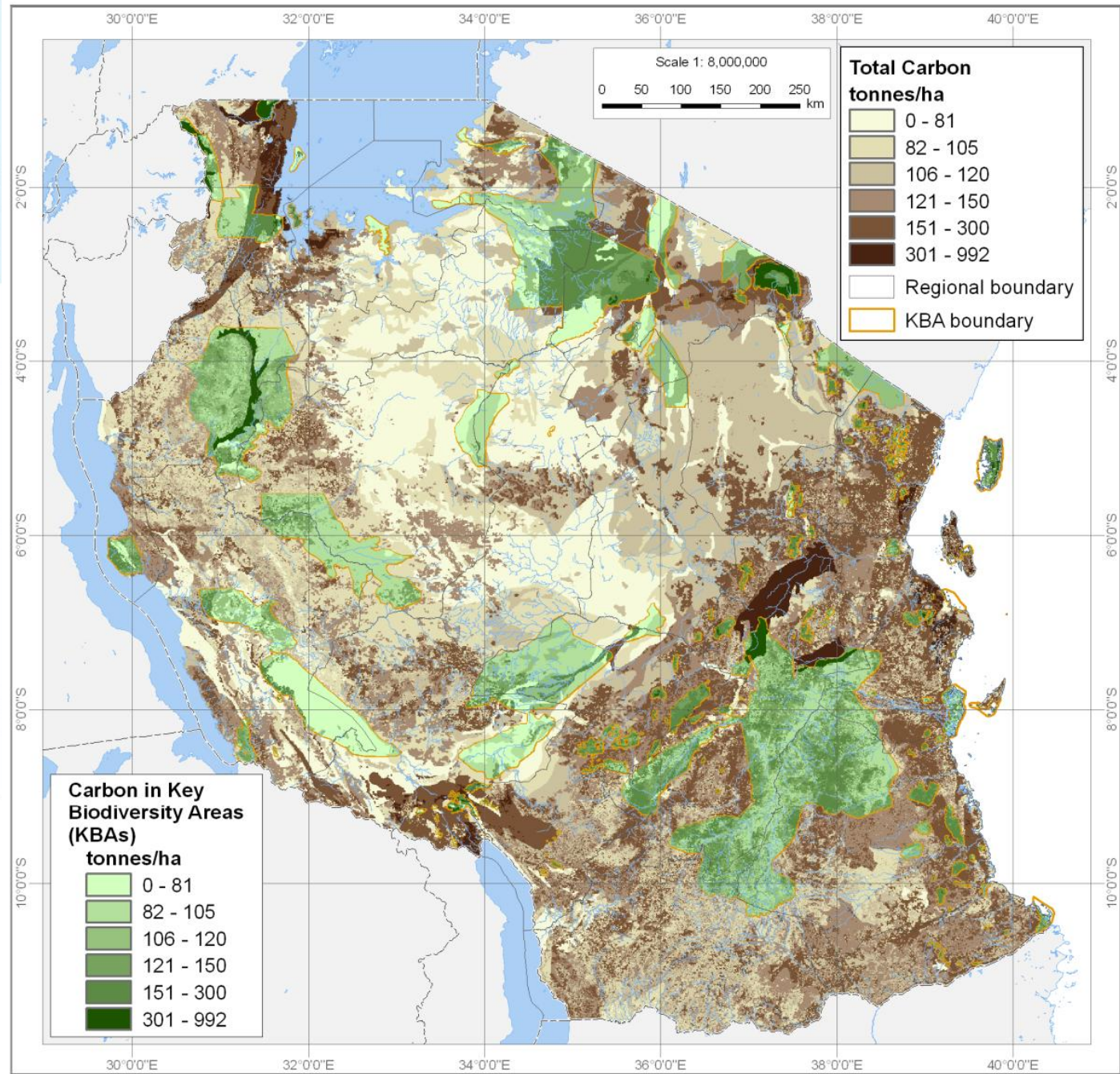
Dark green – high mammals, low carbon; dark pink – high carbon, low mammals, brown – both high



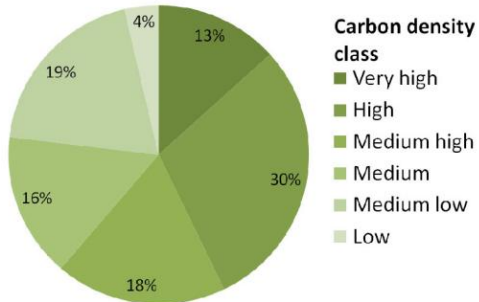




# Carbon density overlaid with Key Biodiversity Areas



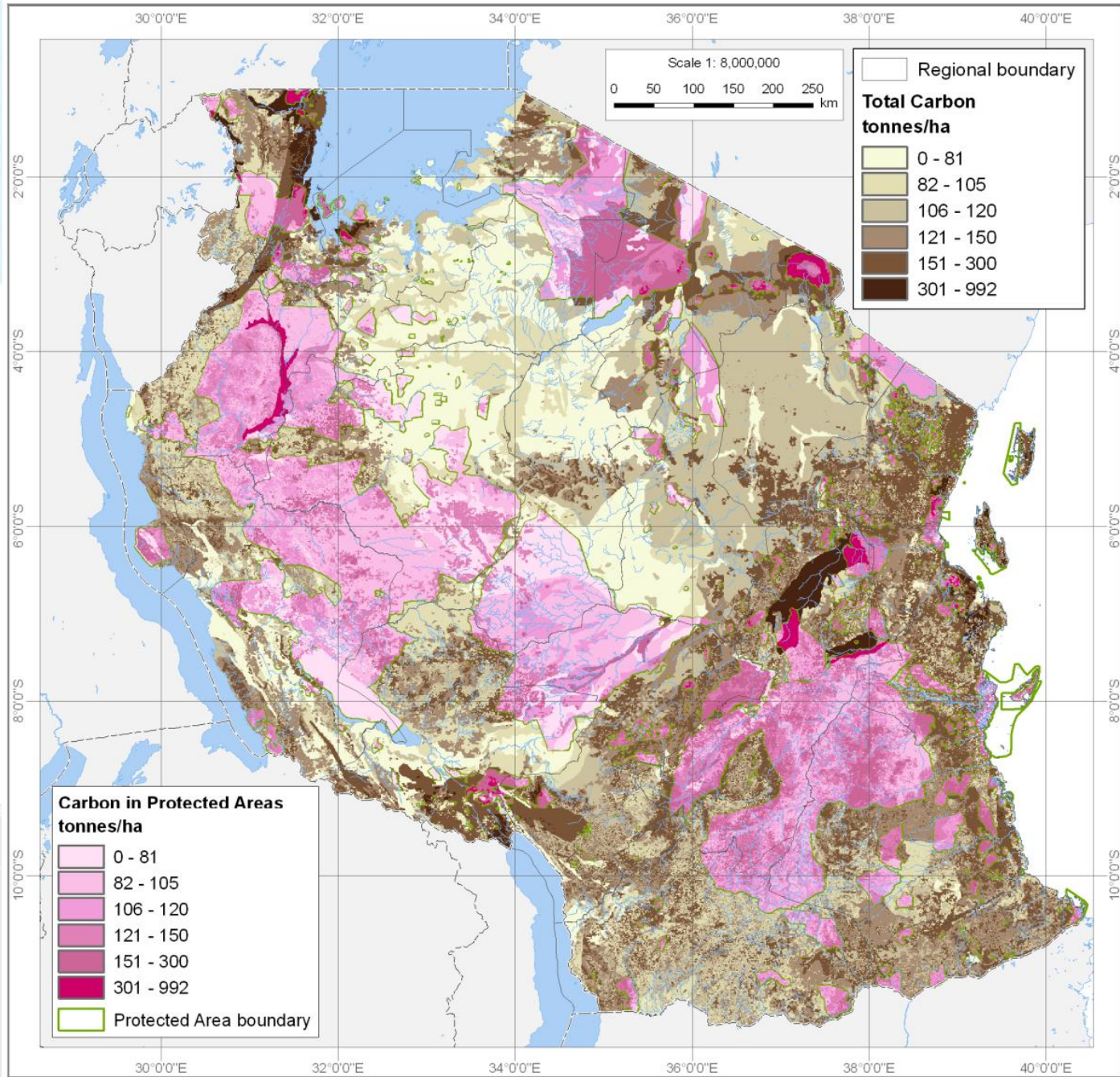
**Total carbon inside KBAs: 2.3 Gt**



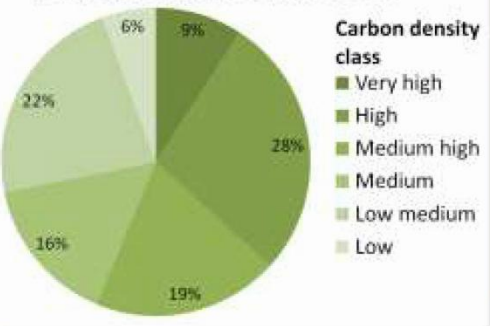




# Carbon density overlaid with protected areas (WDPA 2009 and Wildlife Division Tanzania 2009)



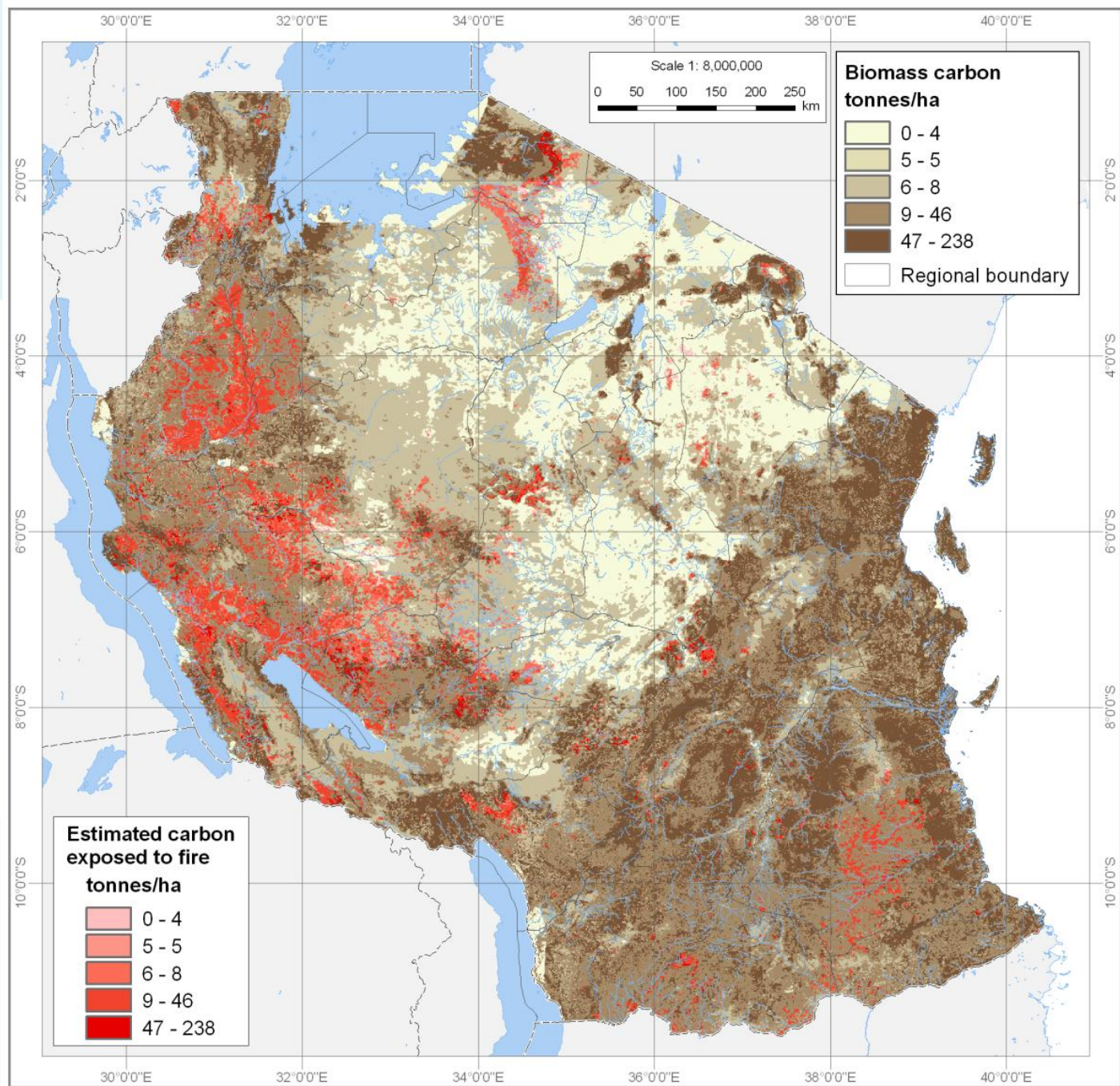
Total carbon inside PAs: 3.7 Gt



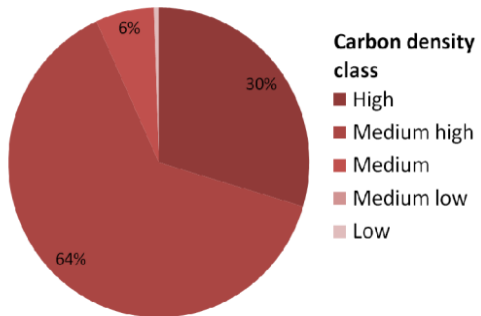




Biomass carbon density overlaid with burnt areas to map carbon exposed to fire (2006-7)



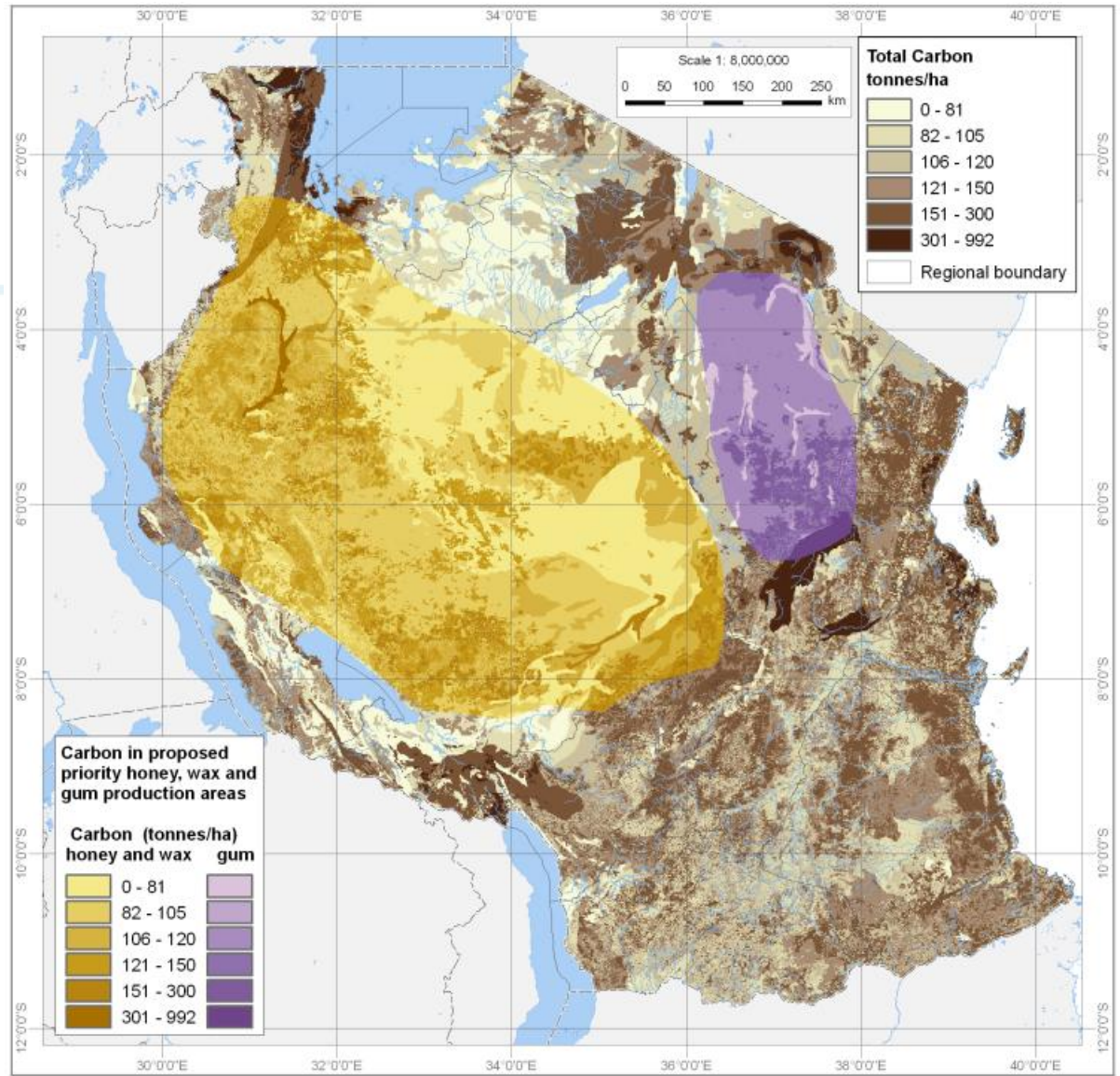
Biomass C in burnt area: 0.18 Gt



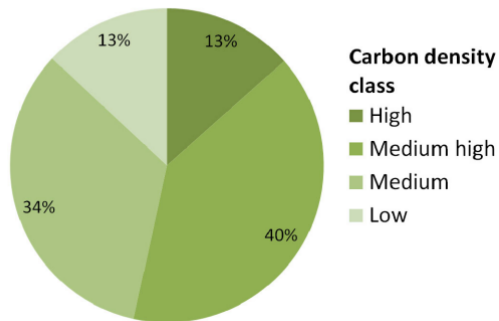




# Carbon density overlaid with priority areas for honey, wax and gum production (2006)



C in honey production priority areas: 3.2 Gt



# Future questions

- Rate of change of carbon stocks across the landscape
- Future mapping exercise under UN-REDD may consider relationship of carbon to –
  - Water
  - Soil erosion protection
  - Non-timber forest products
  - Agricultural pressures







# Thank you for listening!

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