Assessing REDD+ opportunities in Southern Africa, Mozambique

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Background

Reducing Emissions from Deforestation and forest Degradation (REDD), plus a range of forest activities aimed at forest conservation, sustainable management and carbon stock enhancement (REDD+), is a results-based mechanism under discussion in the framework of climate change international agreements.

Most Southern African countries would in theory be eligible to participate and benefit from REDD+, but they have small to medium capacities for forest measuring and monitoring, and in many cases also few resources. To be able to engage in REDD+ a country with few resources should establish priorities according to the areas with higher rate of land cover/use and carbon stock change, and according to the most important causes (drivers) of that change.

Objective

The objective of this work is to investigate how global and regional available data, together with national-scale existing data, can be used from the REDD+ perspective, to identify these priorities at national and regional (Southern Africa) scales. The time period considered is 1990 – 2005 and Mozambique is used as case-study for the national scale.

Results

The results presented here refer to Mozambique, constituting only a part of the broader ongoing work which covers Southern Africa.

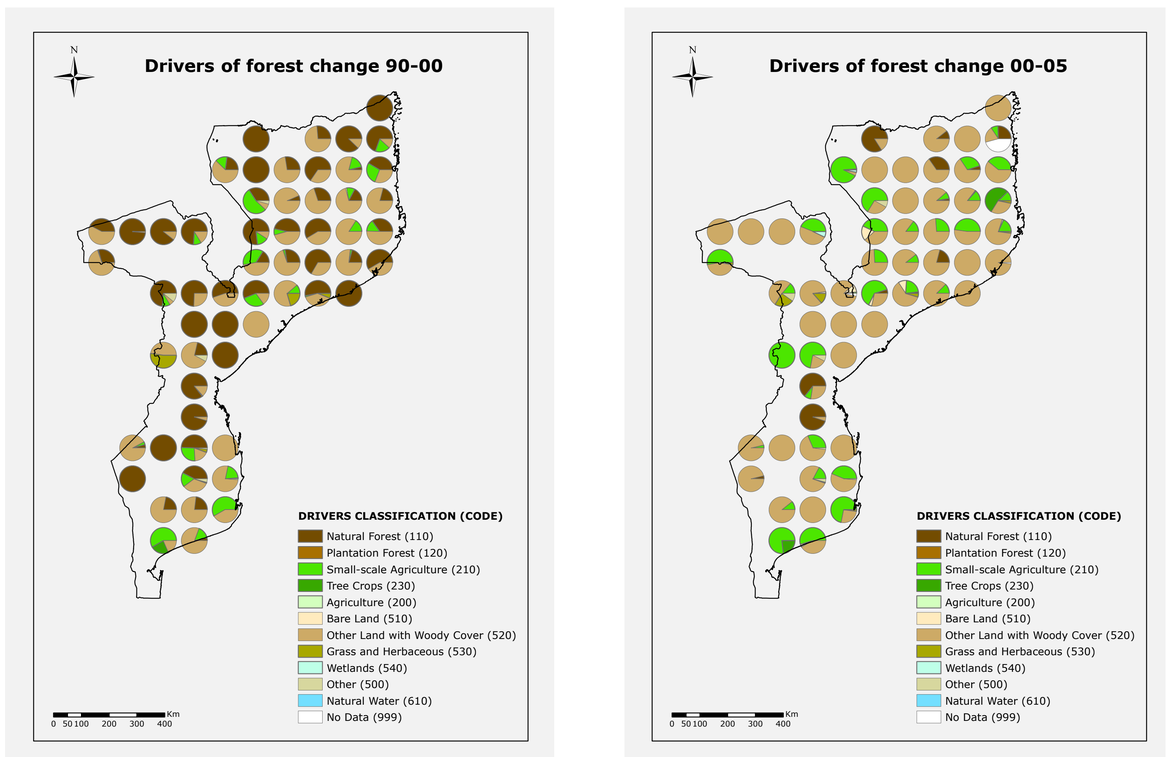

Figure 1. Area proportions of the drivers of forest change in Mozambique in the periods 1990-2000 and 2000-2005. Each pie chart refers to a FRA RSS sample of 10 km x 10 km, within which the correspondent forest use change polygons were analysed and classified.

Methods

Use of the FAO Forest Resources Assessment (FRA) Remote Sensing Survey (RSS) as the source data for forest use change. Reclassification of these data with more detail, according to the follow-up land use (Table 1) in 1990–2000 and 2000–2005. This is achieved through visual interpretation aided by auxiliary datasets such as Landsat Global Land Survey (GLS) Enhanced and high resolution satellite imagery available in Google Earth, as well as through the integration with national-scale data (in the case of Mozambique). The follow-up land uses are considered proxies for proximate drivers of forest change.

Table 1. Classes of follow-up land use.

Level 1	Level 2
Forest (100)	Natural forest (110)
	Plantation forest (120)
	Small-scale agriculture (210)
	Commercial crop agriculture (220)
	Tree crops (230)
	Pasture (grazing land) (240)
Built-up (300)	Urban (310)
	Infrastructure (320)
Mining (400)	
Other (500)	Bare land (510)
	Other land with woody cover (520)
	Grass and herbaceous (530)
	Wetlands (540)
Water (600)	Natural (river, ...) (610)
	Artificial (reservoir, ...) (620)

Conclusions

- The FRA RSS samples of land use change analysed for Mozambique reveal a dominance of certain follow-up land use classes, and also important differences between the two periods (Figure 1). In 1990-2000 the main situations observed were forest change associated with a decrease in woody (including tree) cover and forest change caused by small-scale agriculture. In spite of these changes, there was an important maintenance of natural forest. In 2000-2005 the dominant drivers of forest change were again other land with woody (including tree) cover and expansion of small-scale agriculture, responsible for the conversion of much of the forest that still existed in the previous period.
- The use of appropriate global available datasets, together with thematic national data, provides relevant and useful information for establishing a first set of REDD+ priorities, both spatially and in terms of the most important drivers of forest use change.

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