

Antananarivo – July 2019

BioSceneMada

Biodiversity scenarios under the effects of climate change and deforestation in Madagascar



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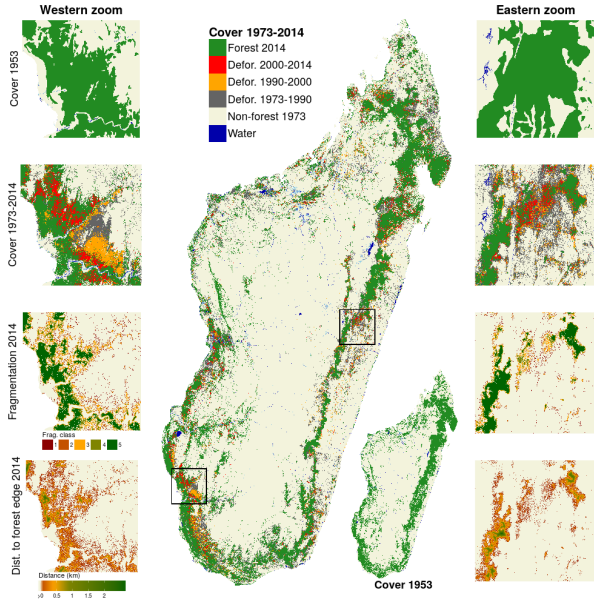
Plan

Method

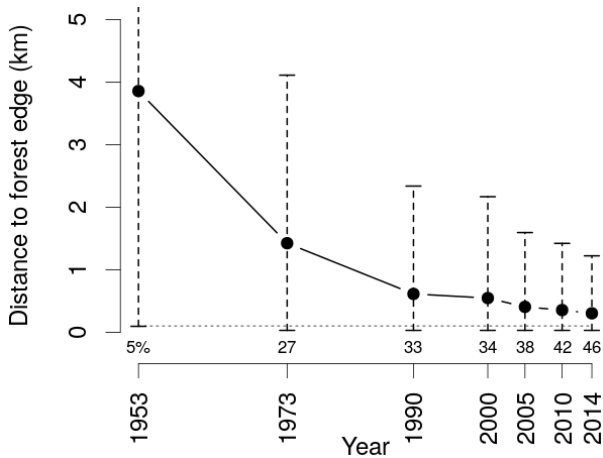
We combined :

- Harper 2007 map on 1953-2000
- Hansen 2013 tree cover loss on 2000-2017

Historical deforestation



Fragmentation



Deforestation rates

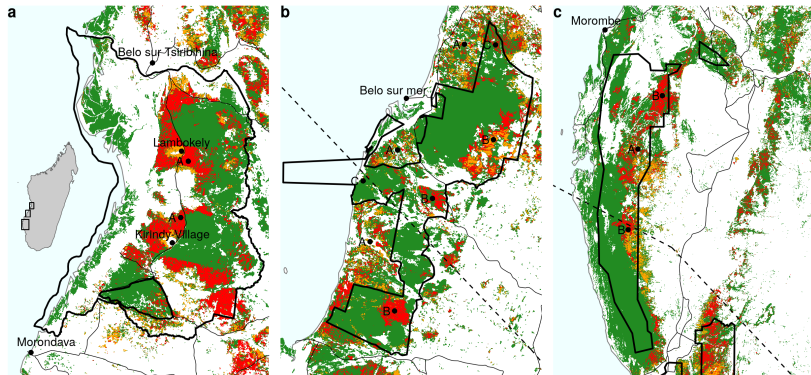
Year	Forest (Kha)	Unmap (Kha)	Annual defor. (Kha/yr)	Rate (%/yr)
1953	15,968	0	-	-
1973	14,241	3,317	86	0.6
1990	10,762	0	205	1.6
2000	9,879	0	88	0.8
2005	9,673	0	41	0.4
2010	9,320	0	71	0.7
2015	8,770	0	110	1.2
2017	8,446	0	162	1.9

Vieilledent G., C. Grinand, F. A. Rakotomalala, R. Ranaivosoa, J.-R. Rakotoarijaona, T. F. Allnutt, and F. Achard. 2018. Combining global tree cover loss data with historical national forest-cover maps to look at six decades of deforestation and forest fragmentation in Madagascar. *Biological Conservation*. 222 : 189-197.
[[doi:10.1016/j.biocon.2018.04.008](https://doi.org/10.1016/j.biocon.2018.04.008)].

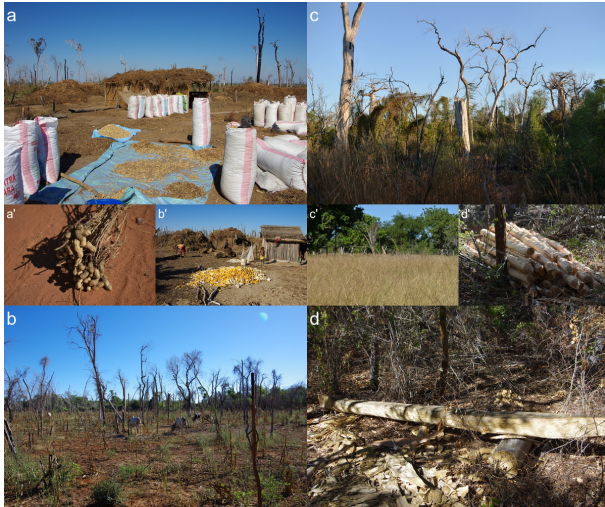
Map

- Interactive map at <https://forestatrisk.cirad.fr/mada/>
- GIS files at <http://dx.doi.org/10.18167/DVN1/AUBRRC>

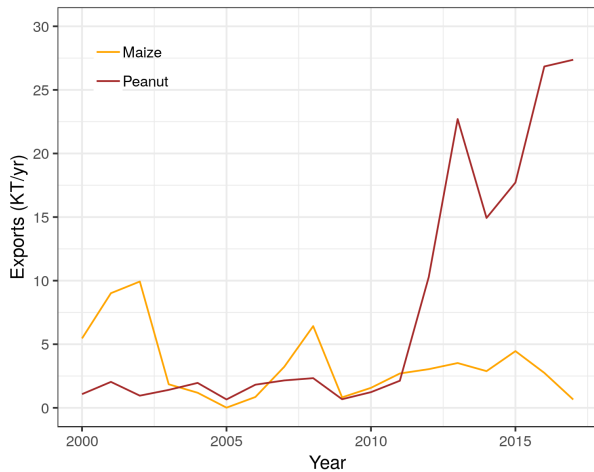
Menabe



Proximate causes



Exports



Ultimate causes

- Unregulated global market
- Bad governance and weak enforcement of the environmental law

Vieilledent G., C. Grinand, M. Pedrono, T. Rabetrano, J.-R. Rakotoarijaona, B. Rakotoarivelo, F. A. Rakotomalala, L. Rakotomalala, A. Razafimpahanana and F. Achard. It's not only poverty : global trade and bad governance are responsible for the unceasing deforestation in western Madagascar. *Conservation Letters*. In prep.

Software

- forestatrisk Python package :
<https://github.com/ghislainv/forestatrisk>

Maps

- Interactive map at <https://forestatrisk.cirad.fr/mada/>

... Thank you for attention ...

<https://bioscenemada.cirad.fr>

