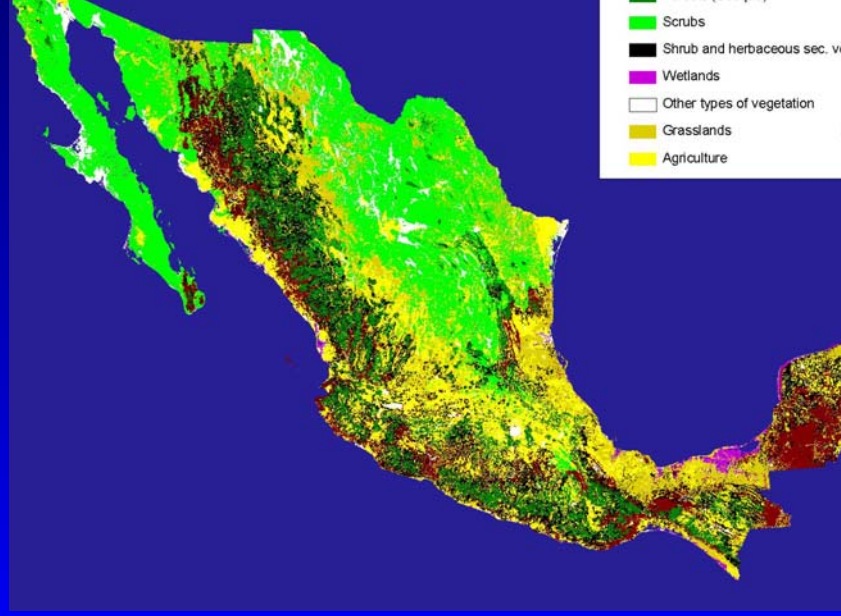
UNFCCC SECOND WORKSHOP ON REDUCING EMISSIONS FROM DEFORESTATION IN DEVELOPING COUNTRIES

7 to 9 March, 2007; Cairns, Australia



Reducing emissions from Deforestation: National and regional approaches in Mexico

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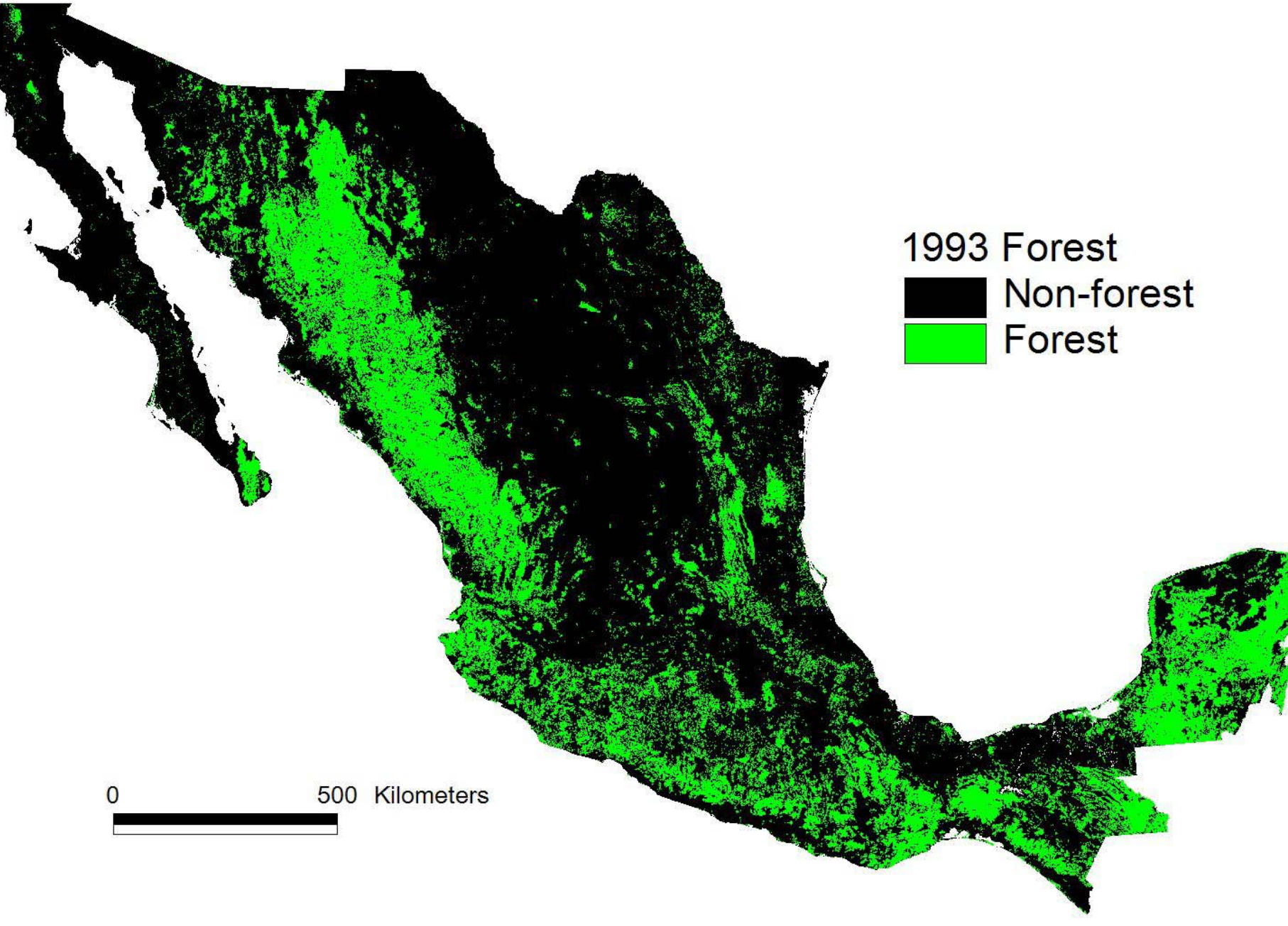
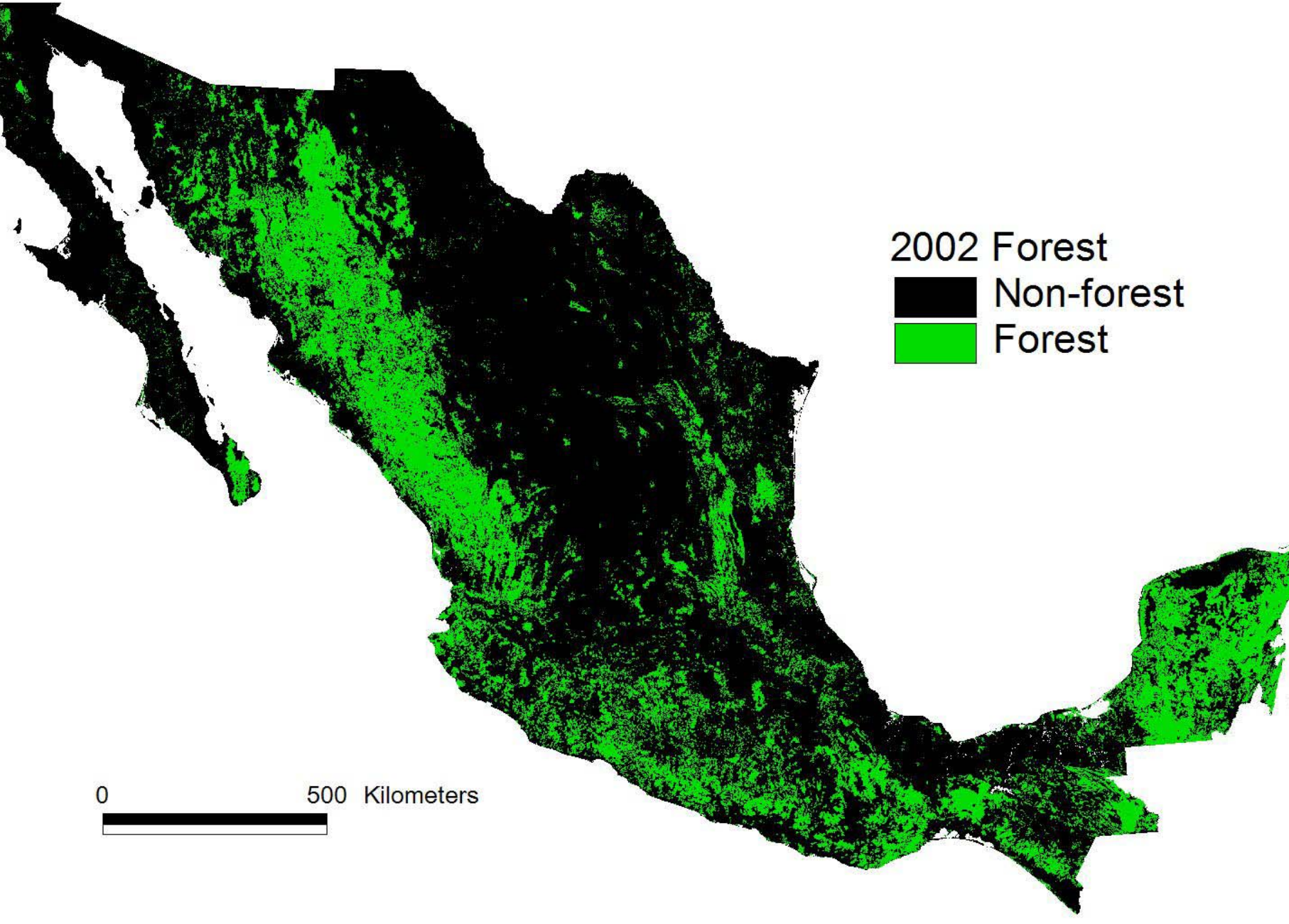
El Colegio de la Frontera Sur

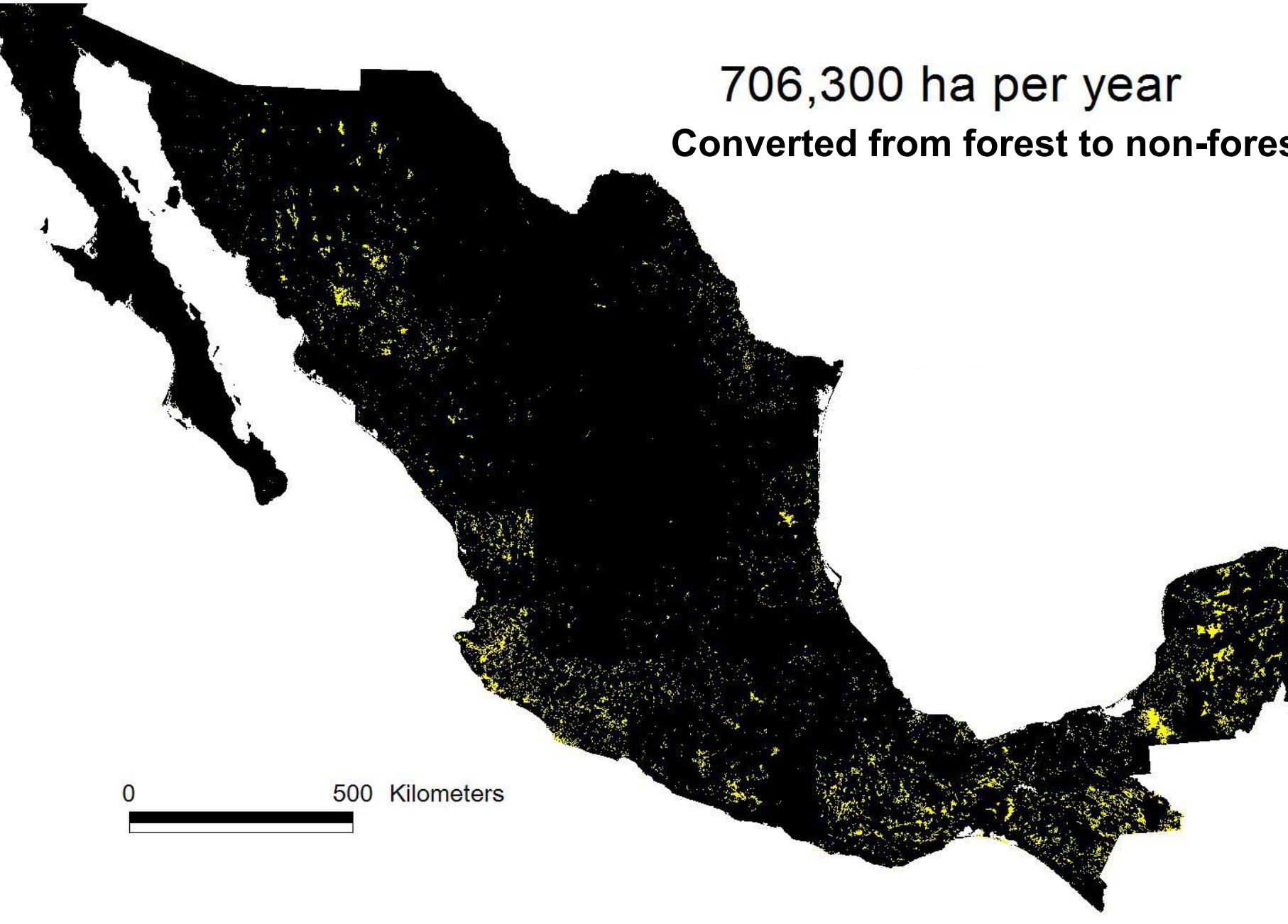
Key questions to be addressed

- How much forest clearing would occur without any measure?
- Do forest management and conservation reduce forest conversion?
- Where will deforestation most likely occur in the future?
- How much carbon will be emitted from forest conversion?
- How to define priority areas?
- Regional approach with example from Chiapas.

- First step:
  - Identify areas that were deforested between 1993 and 2002


1993 Forest
Non-forest
Forest
0
500 Kilometers


2002 Forest
Non-forest
Forest
0
500 Kilometers


706,300 ha per year
Converted from forest to non-fores
0
500 Kilometers

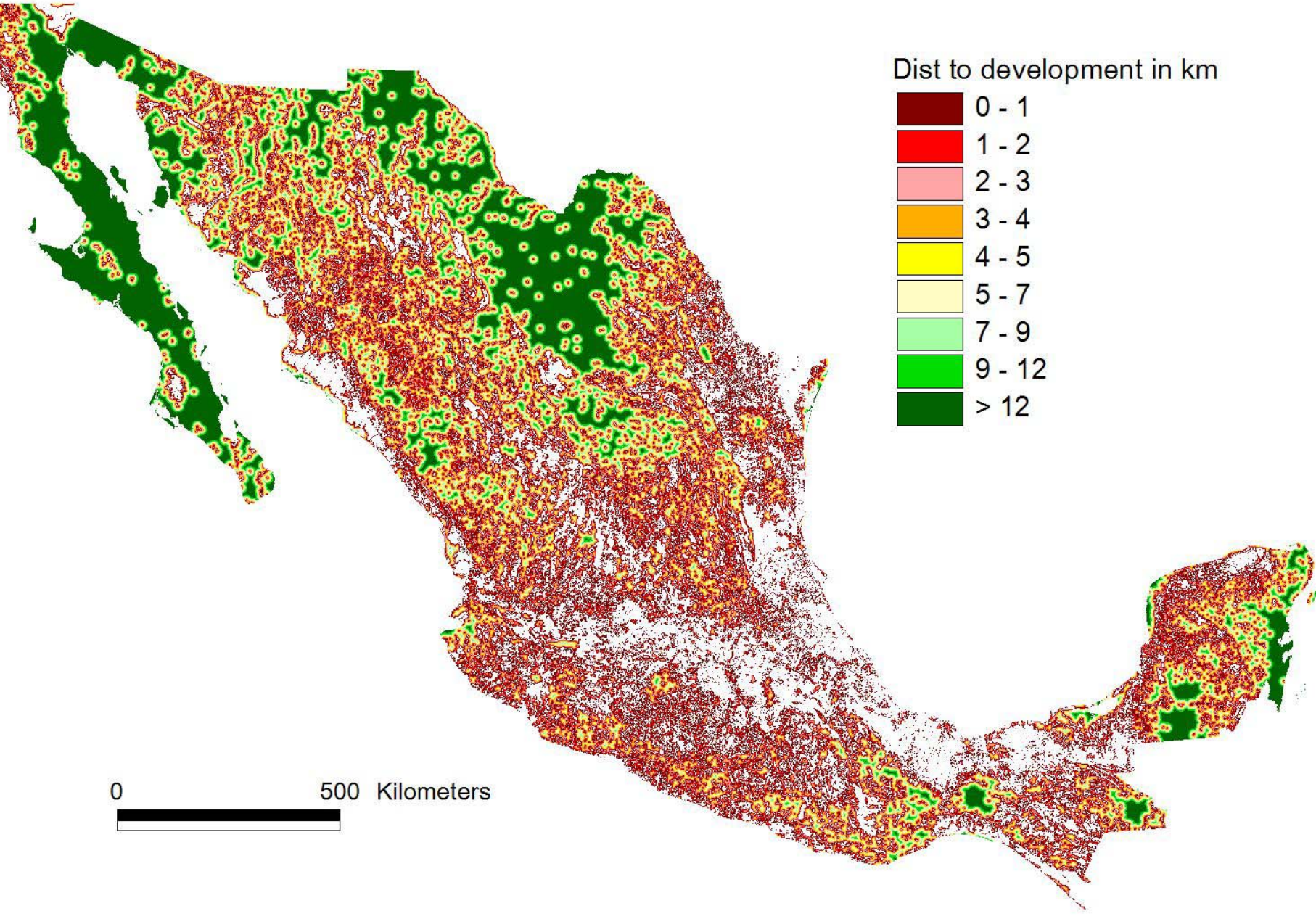
Do forest management and conservation reduce forest consersion?

Area changed from forest to non-forest (in %)	14.0%
Def - mgmt	15.4%
Def + mgmt	10.4%
Def - cons	14.5%
Def + cons	8.6%
Def + cons - mgmt	10.1%
Def + cons + mgmt	5.0%

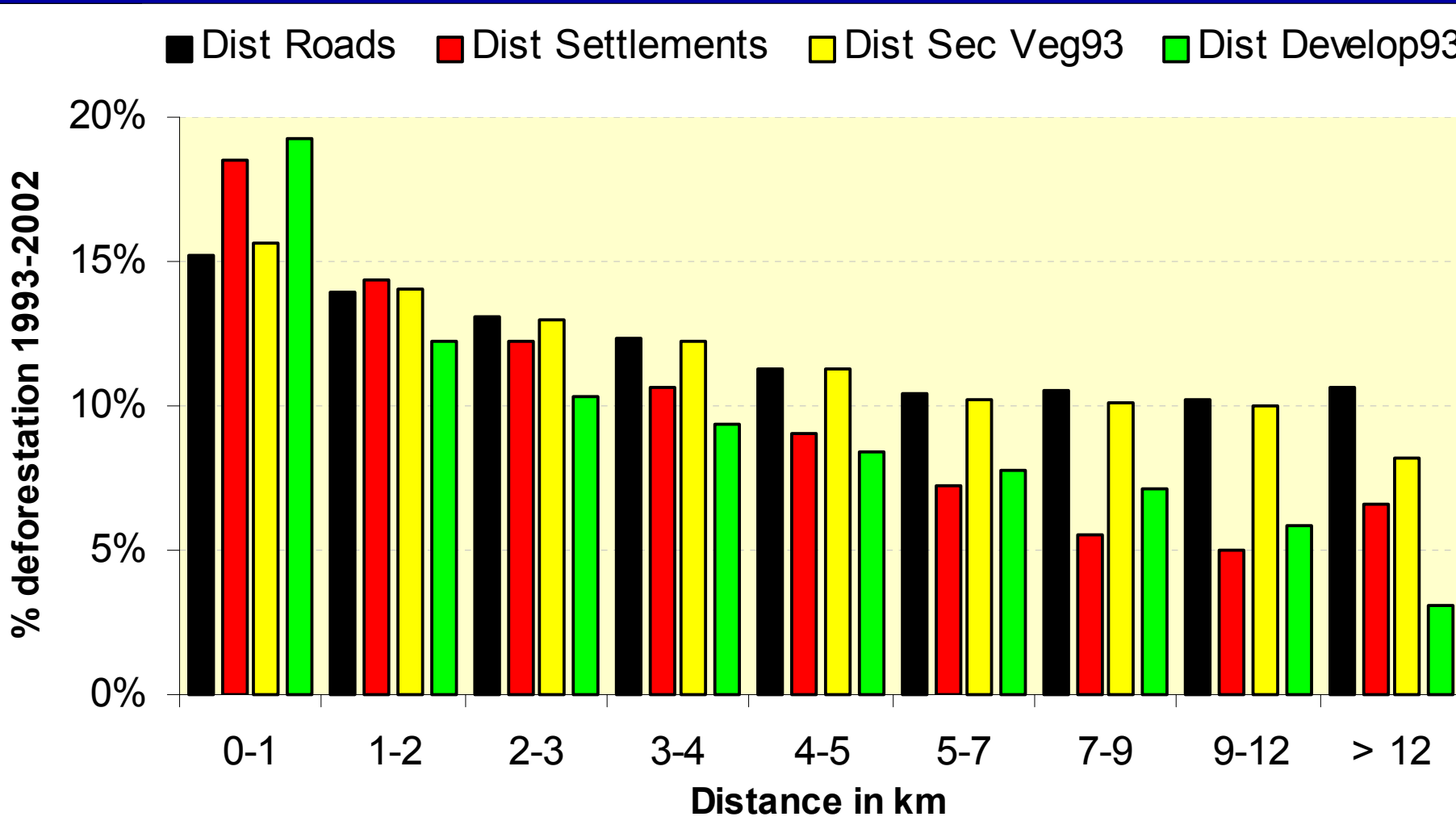
Next step: Where will forest conversion most likely occur?

Test the spatial correlation between a set of criteria and indicators and forest conversion observed between 1993 and 2002

Criteria	Indicators:
Access to forests	Distance to settlements
	Distance to main roads
	Distance to developed areas
	Distance to secondary vegetation
	Slope
Pressure on forests	Population density of 2000
	Population density increase between 1990 and 2000


Dist to development in km
0 - 1
1 - 2
2 - 3
3 - 4
4 - 5
5 - 7
7 - 9
9 - 12
> 12
0
500 Kilometers

Percent of forest cleared in each category between 1993 and 2002



Expected versus observed forest conversion

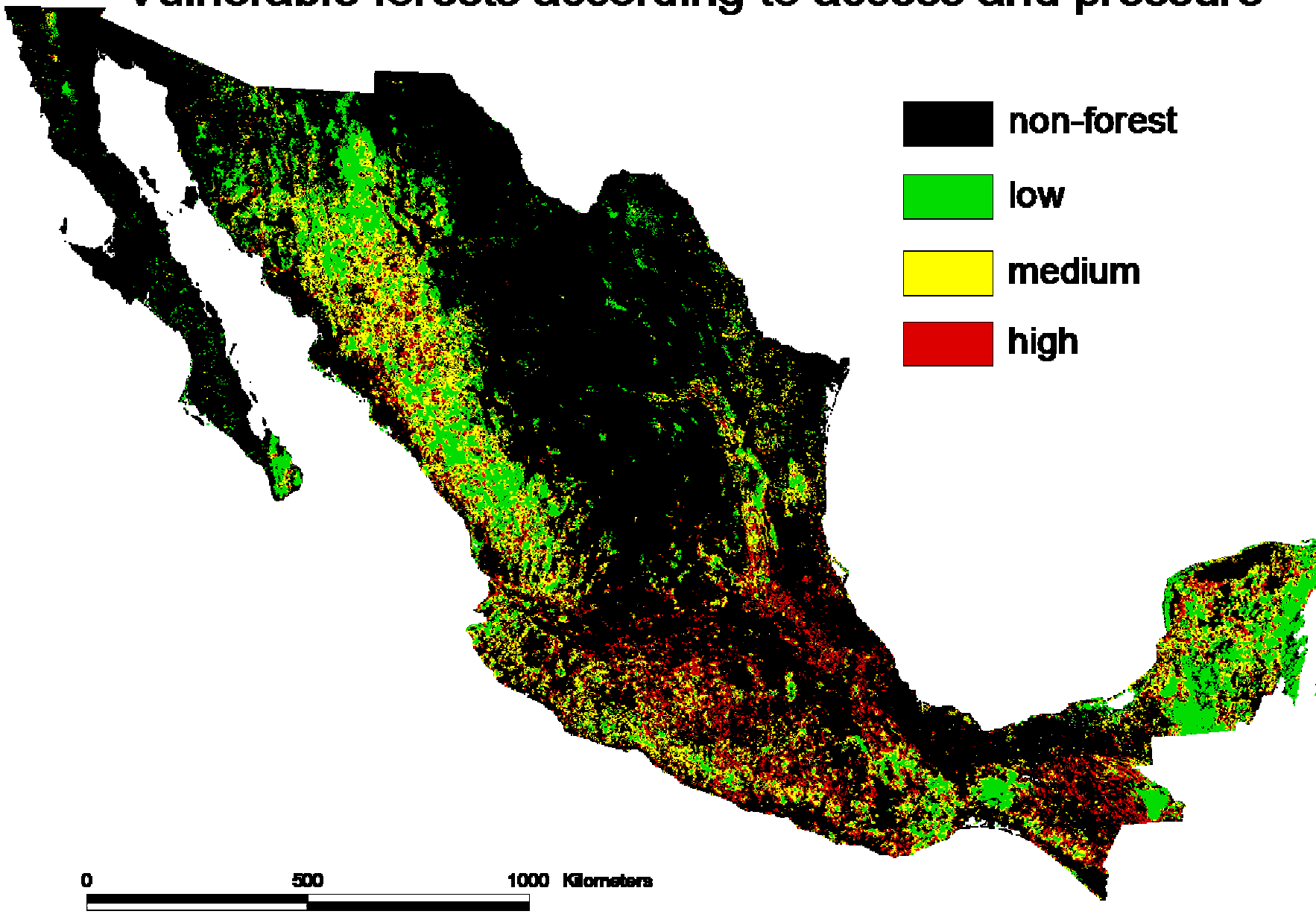
POPULATION INCREASE BETWEEN 1993 AND 2002

POPULATION DENSITY 2000 N / km²	< 0	0-2	2-5	5-10	10-20	20-40	40-80	> 80	
0	0.5	0.6							0.5
0-2	0.7	0.8							0.8
2-5	0.9	1.0	1.7						1.0
5-10	1.2	1.2	1.2	2.1	2.6				1.3
10-20	1.5	1.6	1.7	1.6	2.1	2.7	3.2		1.6
20-40	1.7	1.7	1.5	1.5	1.3	1.3	2.9	3.3	1.7
40-80	2.0	1.9	1.6	1.4	1.4	1.4	1.8	3.1	1.8
80-160	2.1	1.9	1.8	1.5	1.6	1.5	1.4	2.4	1.7
> 160	2.9	2.6	2.2	1.6	1.5	1.4	1.3	1.5	1.9
	0.8	1.0	1.5	1.6	1.7	1.8	2.0	2.4	1.0

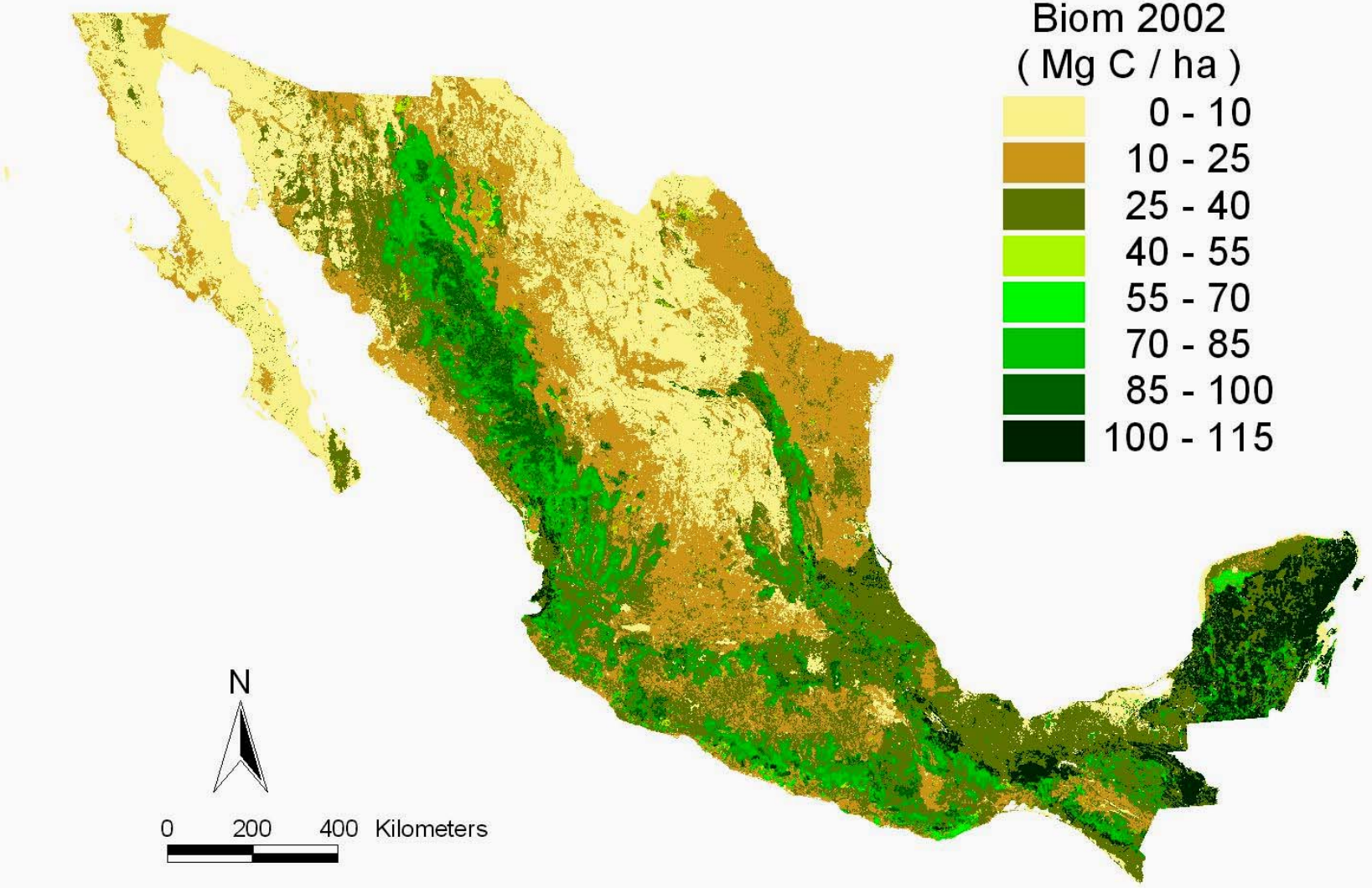
< 1: less forest conversion than expected

> 1: more forest conversion than expected

Vulnerable forests according to access and pressure



How much carbon would be lost?



(Based on de Jong et al, 2006)

Next question:

Can we identify priority areas for forest conservation, based on social indicators?

Based on the 2000 population census we developed maps of the following indicators

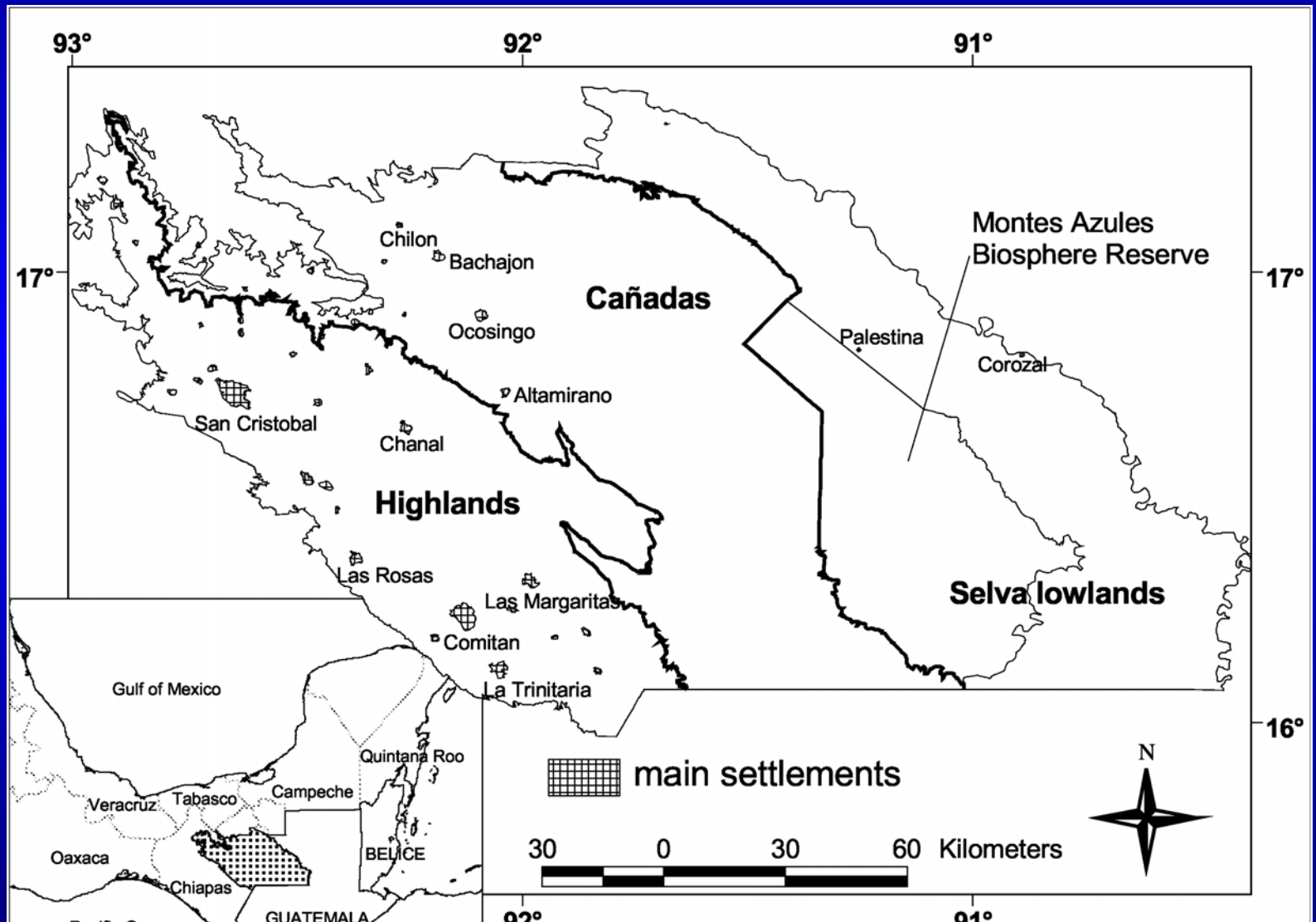
- Marginality (derived from: level of education, public services housing conditions, CONAPO).
- Employment % of population with work
- Primary sector % of working population active in primary sector
- Presence of indigenous groups

Combining risk and social factors (importance):

Soc-factors (AREA IN HA)	Risk: High	Risk: Medium	Risk: Low	Total
High	**4,842,264**	7,564,984	8,470,368	**20,877,61**
Medium	3,175,308	6,930,540	6,273,424	**16,379,27**
Low	2,468,492	4,601,036	5,085,388	**12,154,91**
Total	**10,486,064**	**19,096,560**	**19,829,180**	**49,411,80**

Regional Approach

(Published by De Jong et al 2005; Santiago-Castillo et al 2007)

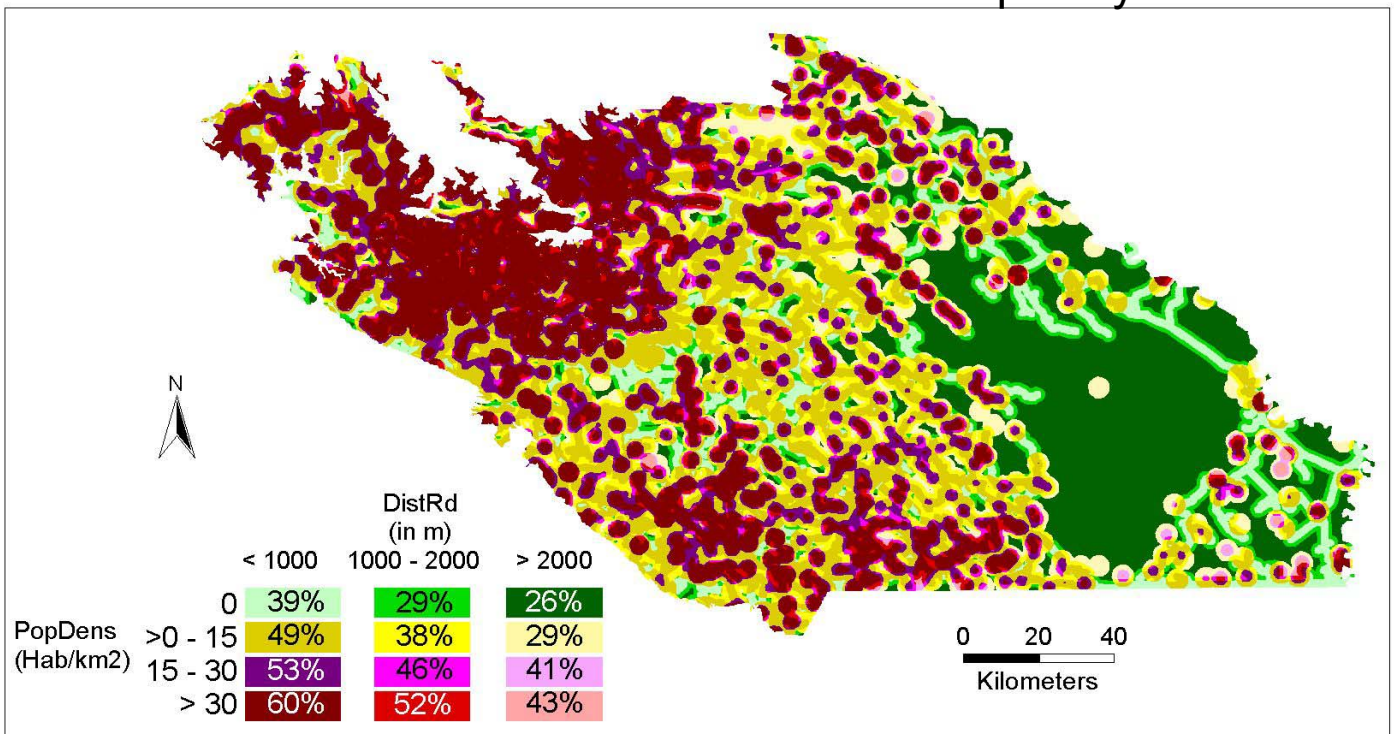


The relationships between forest conversion and two types of possible causal factors were examined:

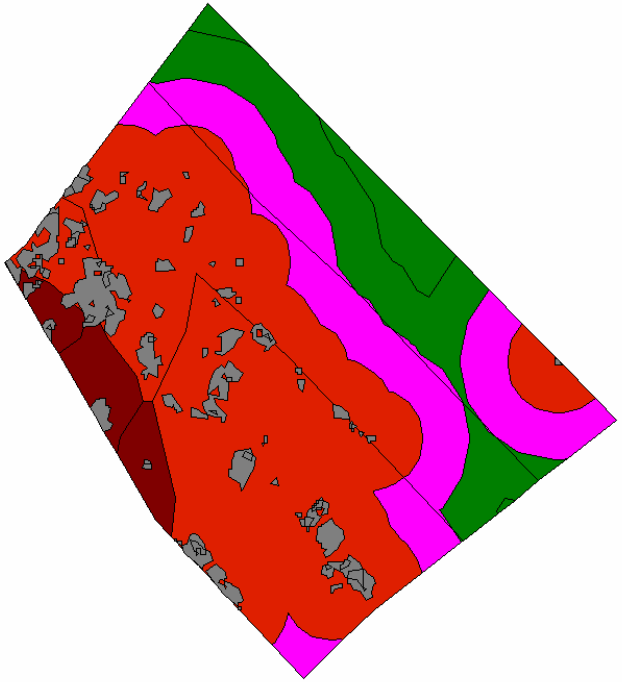
(a)‘Predisposing or accessibility’ factors that determine the susceptibility of a particular area of forest to change (slope, distance to agriculture and roads and land tenure) and

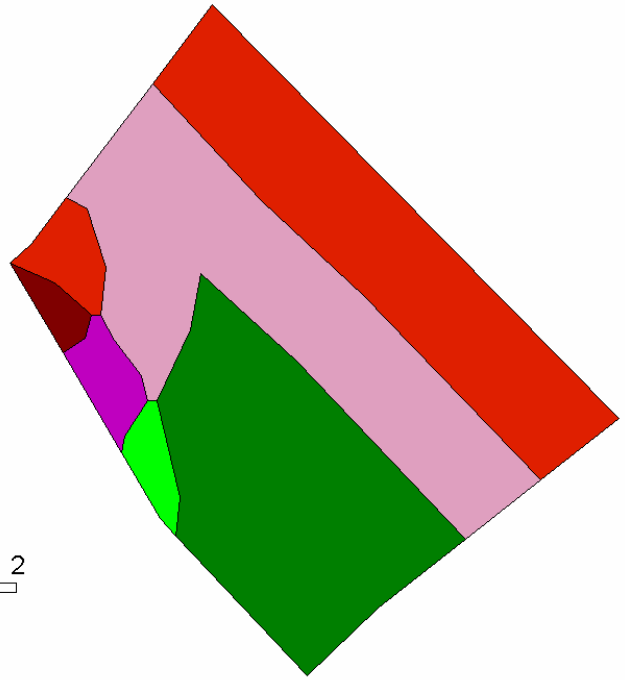
(b)‘Driving or pressure’ factors representing the pressures for change (population density and poverty).

One predisposing and one driving factor that were strongly correlated with deforestationwere then combined in matrices each containing up to 12 classes. The rate of deforestation observed in each class was subsequently calculated.



These in turn were applied to a community





N

0 1 2

Kilometers

DistAg - PopDens Matrix
Corona Community 1997

- < 500 m; PopDens = 0
- < 500 m; PopDens >0 - 15
- 500 - 1000 m; PopDens = 0
- > 1000 m; PopDens = 0
- Agriculture 1997

DistCam - PopDens Matrix
Corona Community 1997

- < 1000 m; PopDens = 0
- < 1000 m; PopDens > 0 - 15
- 1000 - 2000 m; PopDens = 0
- 1000 - 2000 m; PopDens > 0 - 15
- > 2000 m; PopDens = 0
- > 2000 m; PopDens > 0 - 15

Estimated and allowable baseline emissions from deforestation between 1998-2007 (tC) for the La Corona community based on the DistAg-PopDens matrix and total compound error.

		Estimated emissions (in tC)		Total Error (in %)		Allowable emissions (in tC)		
	PopDens	**>0-15**	**0**	**>0-15**	**0**	**>0-15**	**0**	**Total**
DistAg	**< 500m**	5,482	50,624	25.3%	22.2%	4,095	39,385	43,480
	500-1000m	0	18,028	27.7%	30.0%	0	12,619	12,619
	>1000m	0	11,071	24.2%	31.7%	0	7,561	7,561
	Total	5,482	**79,722**			4,095	59,566	**63,661**

3. Estimate forest conversion to set national target =< historical trend.
4. Identify forest areas that are under risk due to factors such as access or pressure.
5. Develop biomass density maps.
6. Priority areas = f (Risk, Quantity of carbon, Social importance, Conservation).

Thank you

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