

Forest Carbon Partnership Facility

Incorporating lessons learned from Community Forestry and Payment for Environmental Services Programs in Mexico's REDD strategy

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Presentation outline

A. Background

B. Advances in preparing for REDD

I. Consultation Process

II. Reference Scenario

III. Monitoring System

IV. REDD Strategy Development

C. Incorporating lessons learned from community forestry and payment for environmental services program (PES)

Background

- ✓ In the last 2 years an increased interest in REDD is observed.
- ✓ Although REDD was recognized by the academic sector as a key mitigation option for Mexico already in the 1990s, governmental institutions have picked-up the issue, especially in the last 2 years.
- ✓ As forestry and climate change are considered as factors of national security, Mexico's federal government formulated an intersectoral program to address climate change, in which REDD will be integrated.
- ✓ **Institutional programs and experiences:** Early programs and projects have been contributing to develop key concepts and tools related to using forests as carbon sinks
 - ProÁrbol: Payment for Environmental Services program (PES), Communitarian Forestry (PROCYMAF)
 - Scolel-Te carbon project
 - National Forest Inventory

Background

- Mexico's Government (CONAFOR) has become more active inside UNFCCC talks and others:
 - CoP 13, Bali, Indonesia
 - SBSTA 28, Bonn, Germany
 - ITTO Addressing Climate Change through SFM
 - REDD workshop, Tokyo, Japan
 - Ad Hoc Long Term Working Group meeting in Accra, Ghana
 - Experts informal meeting on forest degradation, Bonn, Germany
- Committed to design and implement a REDD strategy with support of FCPF

Consultation Process

Stakeholder consultation

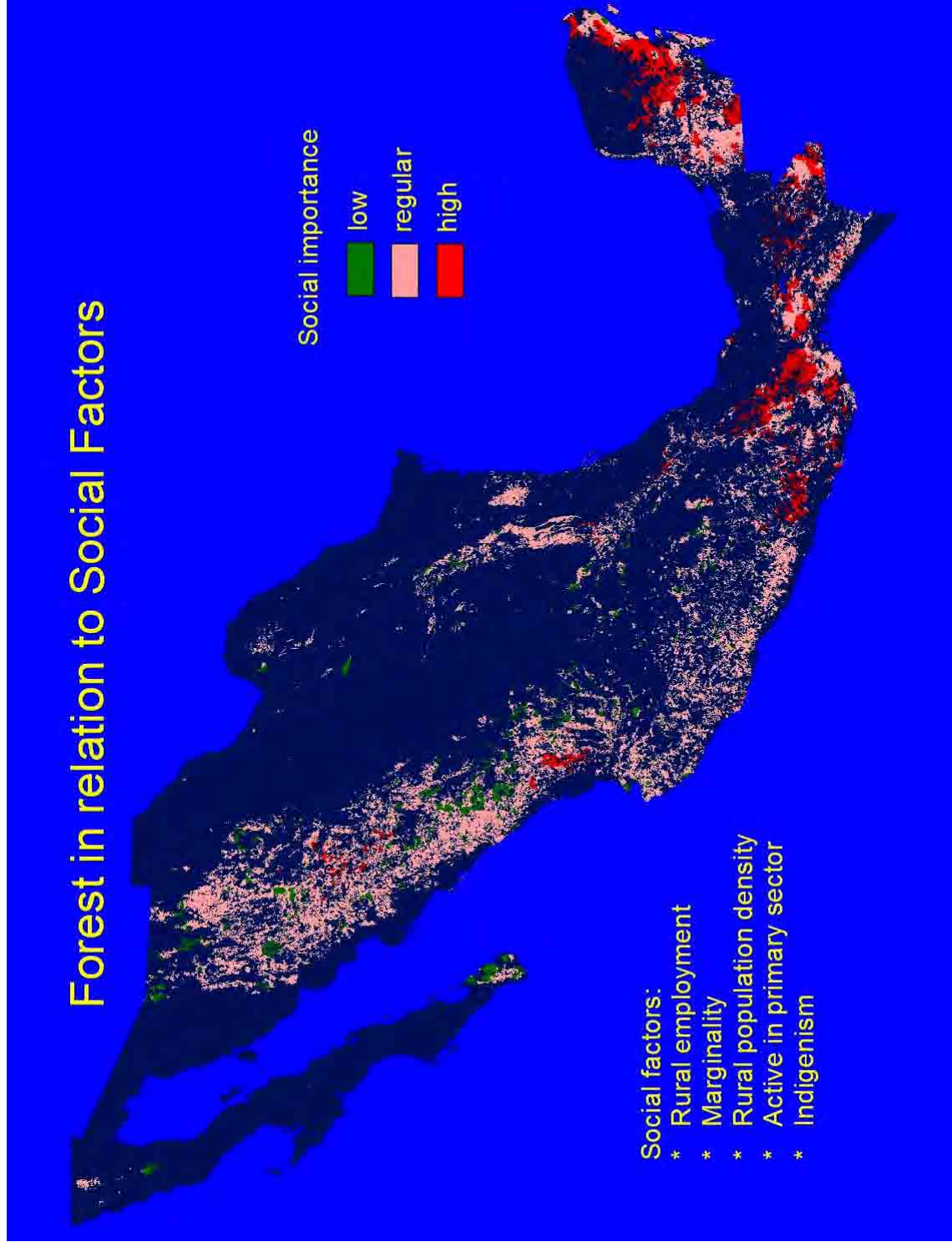
- First stakeholder meeting in July with governmental institutions, academic sector, NGOs and international organizations
 - To present the Mexico's REDD initiative
- Second stakeholder meeting in September within PES-working group.
 - To define stakeholder's roles for formulating the REDD Readiness Plan.

Main outcomes

- The consultation process will be developed by Colegio de Mexico (COLMEX), with assistance of various NGOs, forest community organizations and other relevant academic institutions.
- The reference scenario and monitoring system will be designed by the Mexican Carbon Program, in collaboration with various governmental institutions.

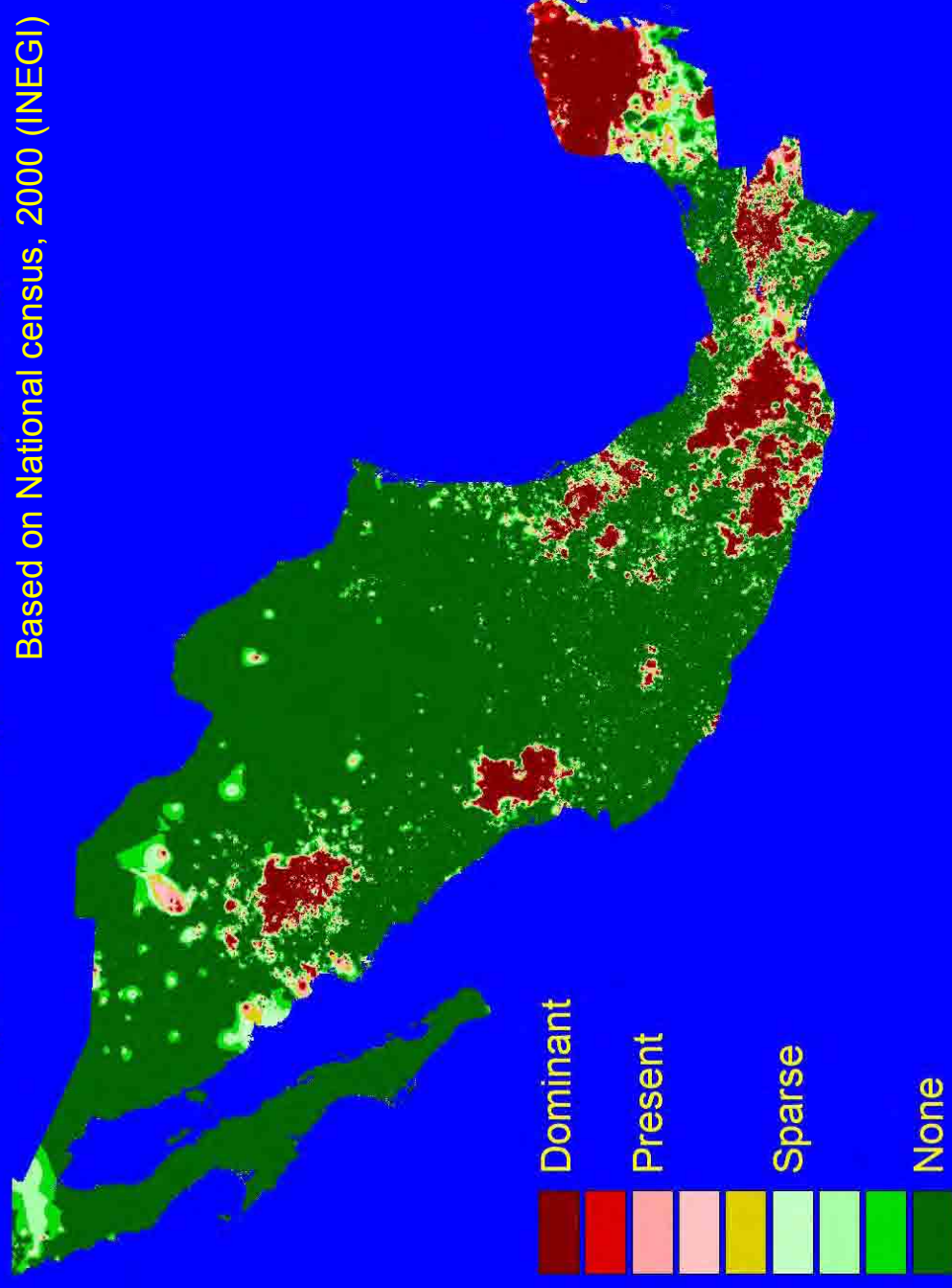
Social factors

Forest in relation to Social Factors



Indigenous peoples

Spatial variation of presence of indigenous groups
Based on National census, 2000 (INEGI)



Reference scenario: data available

- **Land Use/ Land Cover maps**
 - National LU/LC maps (scale 1:250,000) for 1970s, 1993 and 2002
 - Gross forest (based on 1993 and 2002 land-use maps): 66 million hectares
 - Other maps available but not consistent
 - Change detection through MODIS combined with SPOT (2000-2003; 2003-2005; 2003-2006)
- **Satellite imagery**
 - Landsat imagery of 2000 and 2002, covering the whole country
 - SPOT imagery: unlimited through a contract of Secretary of Marine
- **National Forest Inventory**
 - Forest inventory (1992-1994) data of 16,000 non-permanent geo-referenced plots
 - More than 22,000 permanent geo-referenced sampling plots established between 2004-2007
 - 5-year re-sampling scheme starting 2008

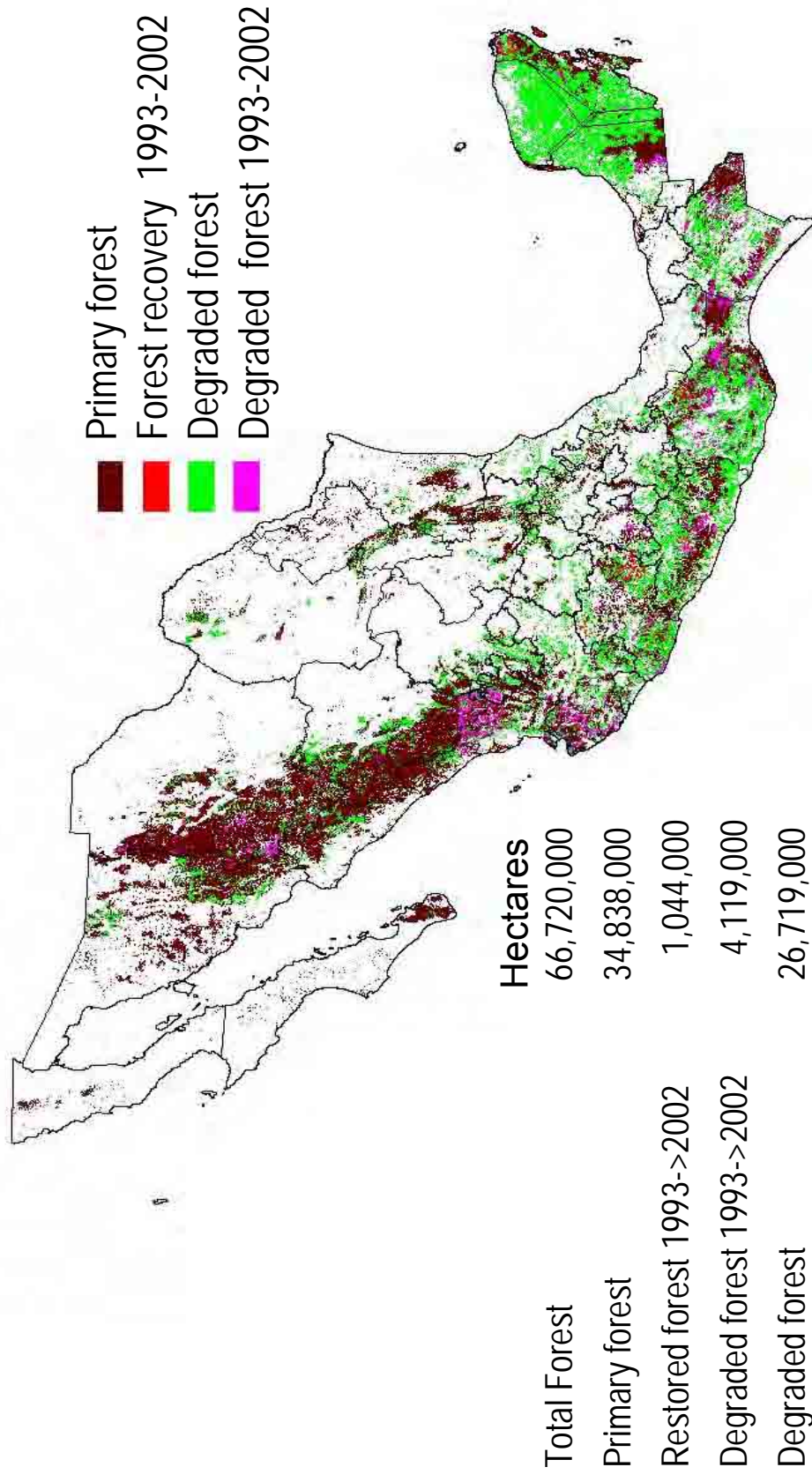
Reference scenario

- **Defining reference scenario**
 - Information is available to analyze 2 continuous intervals to detect trend/transition in deforestation rates
 - Intervals are within a 10-year period each
- **Analysis of historical trend in deforestation**
 - Between 1993 and 2002 (detailed)
 - Between 2002 and 2006 (only change detection)
 - Updated LU/LC map up to 2007 will be available shortly

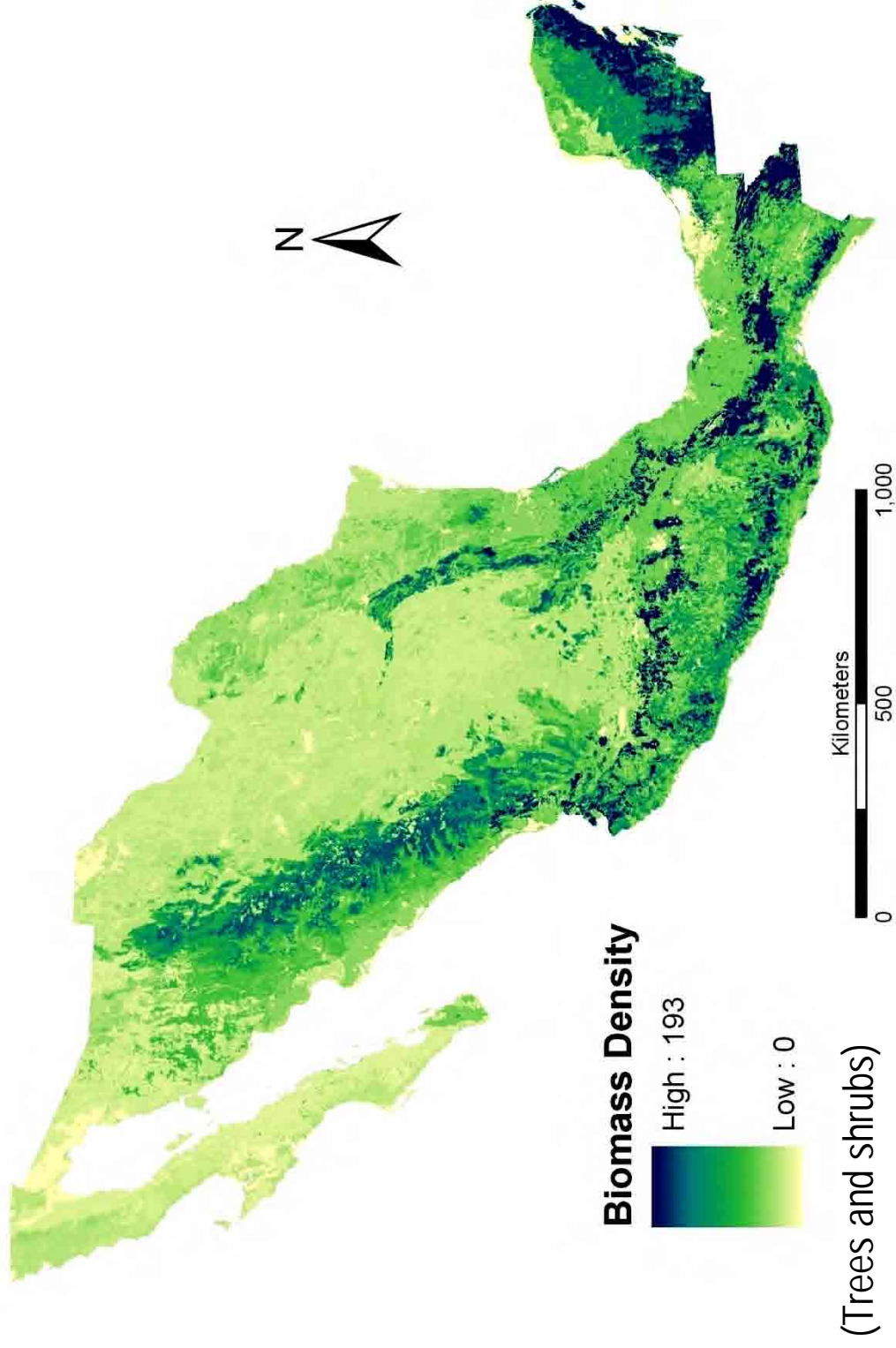
Reference scenario

- To be developed by academic Institutions associated with the Mexican Carbon Program (PMC), in collaboration with governmental institutions.
 - ✓ Landsat and SPOT-5 imagery of 1986, 1990, 1993, 1996, 2000, 2002, 2007 will be used to develop the historic land-use change pattern, using the 1993 and 2002 Land-use maps as a basis (1.44 ha resolution).
 - ✓ Field data of the 2004-2007 National Forest Inventory (>22,000 permanent sampling plots) will be used to calculate biomass densities and density changes within the various Land-use categories, from which emissions related to land-use change will be derived.
 - ✓ Regional and temporal variation in land-use change patterns will be related to land-use policies that occurred during the period of analysis (to detect policy drivers).

Mexico's Forests



Carbon densities



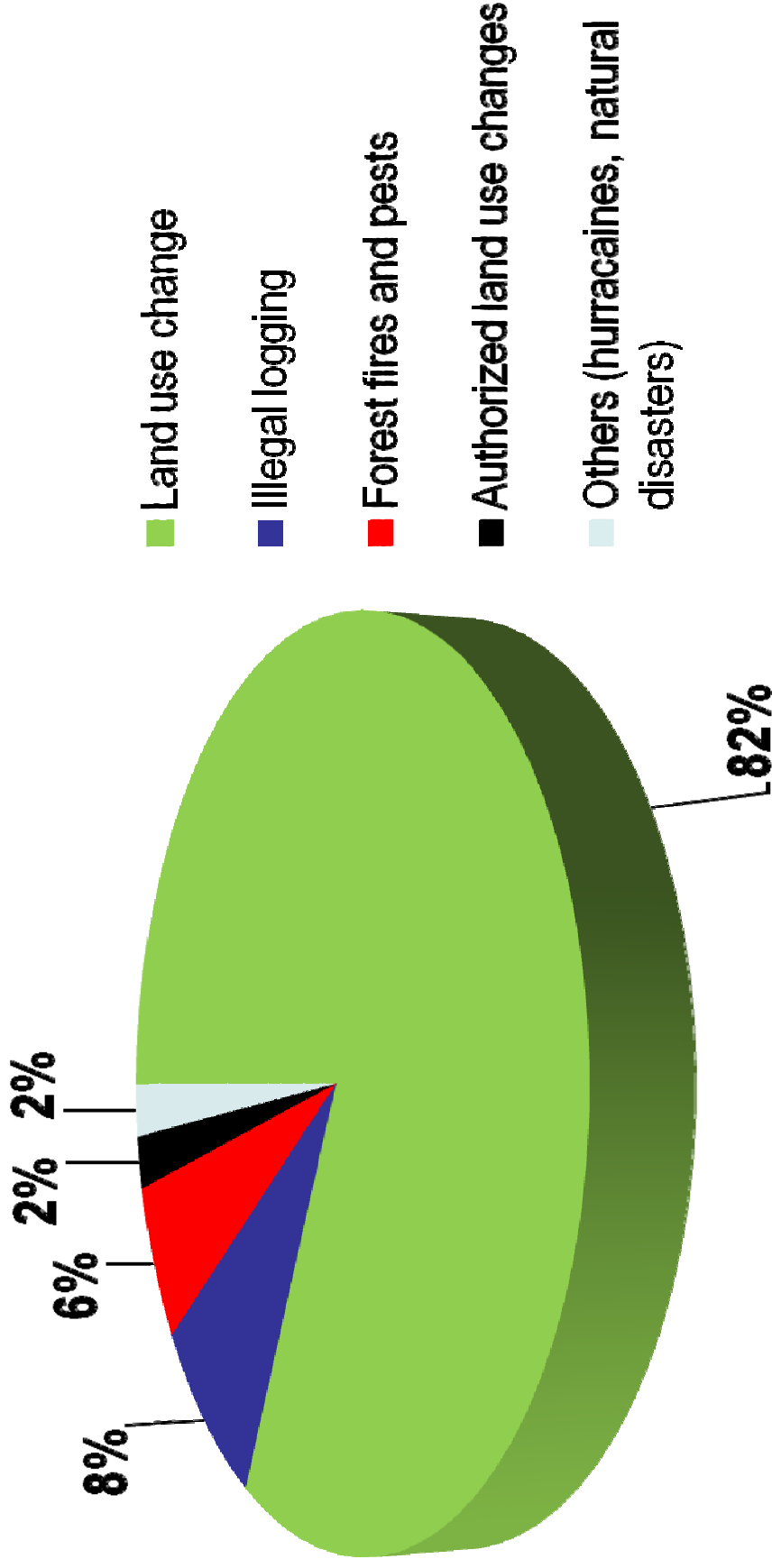
(Based on de Jong et al, 2006)

Land-use change

- Deforestation between 1993 and 2002: **512,500 ha/yr**
- Degradation between 1993 and 2002: **457,700 ha/yr**

Forest type	Annual rate of deforestation (%)
Coniferous Forest	0.3
Degraded Coniferous Forest	0.6
Coniferous-Broadleaved Forest	0.2
Degraded Coniferous-Broadleaved Forest	0.7
Broadleaved Forest	0.3
Degraded Broadleaved Forest	0.3
Evergreen Rain Forest	0.3
Degraded Evergreen Rain Forest	1.4
Deciduous Rain Forest	0.7
Degraded Deciduous Rain Forest	1.2

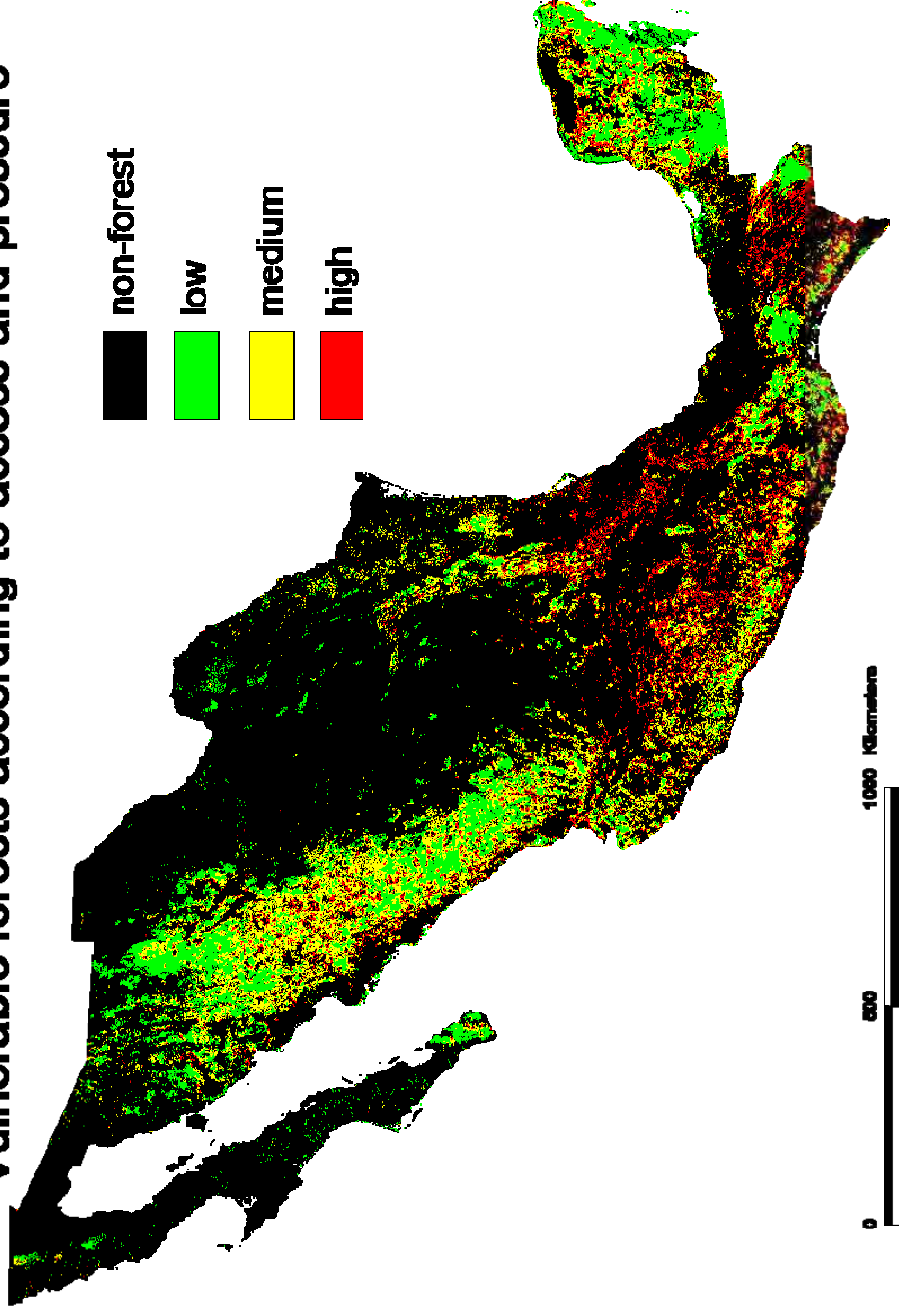
Drivers



Source: INE (2005) cited by CCMSS (2008)

Deforestation Risk

Vulnerable forests according to access and pressure



Methodological issues

- Projects are underway to set up a nation-wide LU/LC change monitoring system, based on MODIS, Landsat and Spot imagery.
- Data on other carbon pools will be incorporated in the National Forest Inventory, from 2009 onward.
- A network of monitoring plots in the northern scrublands will be established (comprising about 58'000,000 has) by the Secretary of Agriculture, Animal Husbandry and Fishery.
- Strengthening capacity building on:
 - National GHG Inventory
 - Assessment of Degradation and Deforestation
 - National Forest Inventory

Monitoring System

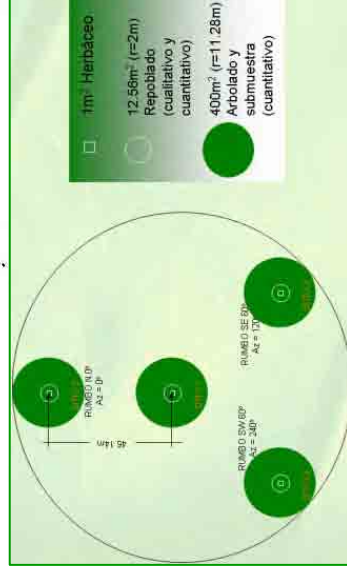
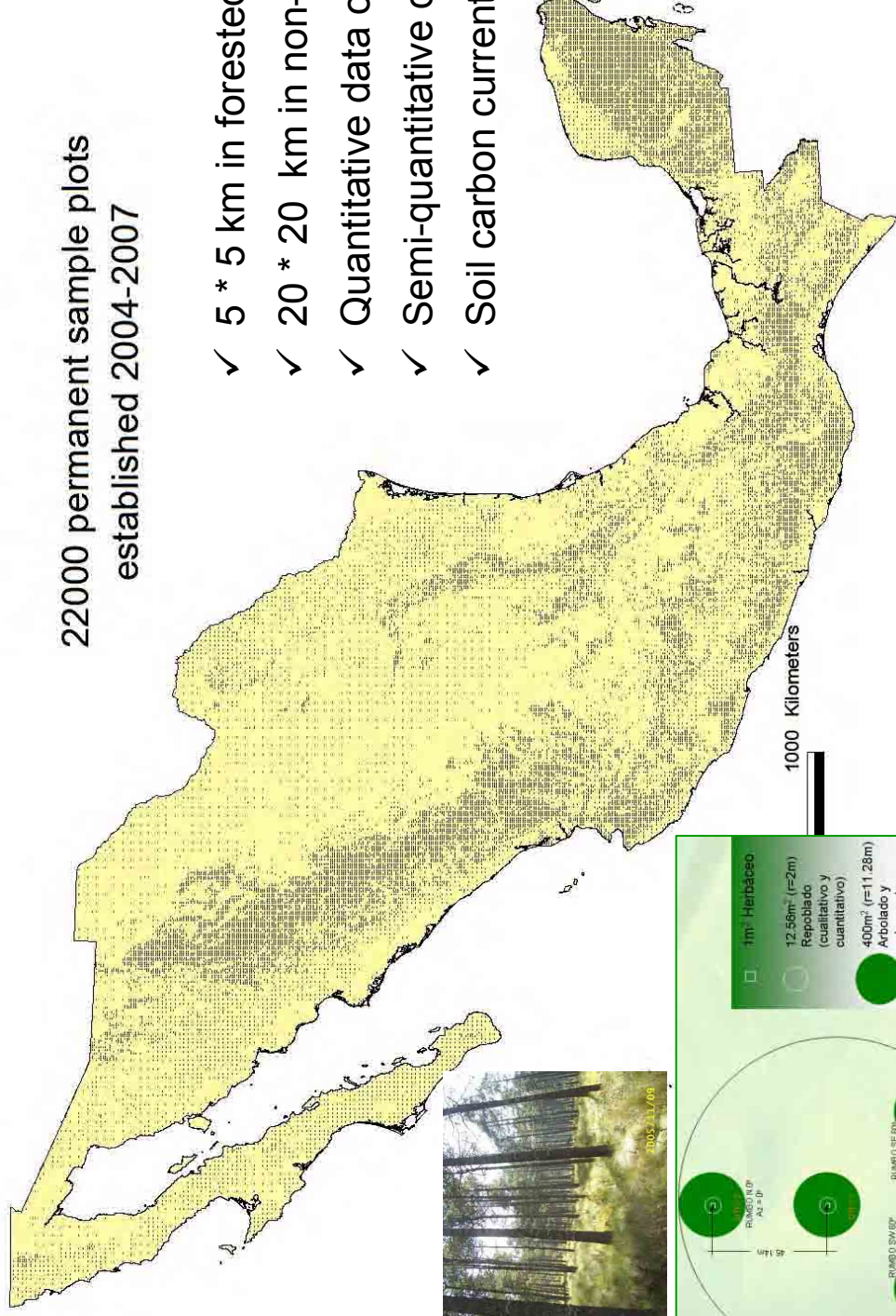
- Regional satellite-based monitoring system will be set up, coordinated by the Mexican Carbon Program.
- Available satellite imagery
 - Modis (forest fires through hotspots, already validated since 2003)
 - Landsat 5 (all data will be freely available as of January 2009)
 - Spot-5 through government contract.
 - Negotiations will be made to use available imagery from India and Brazil-China satellites.
- Carbon stocks and GHG emissions from land-use change will be estimated based on the 23,000 permanent sampling plots of the National Forest Inventory (CONAFOR), complemented with a network of about 500 monitoring plots, currently set up by the Secretary of Agriculture and Animal Husbandry (2.25 km² sites).

National Forest Inventory



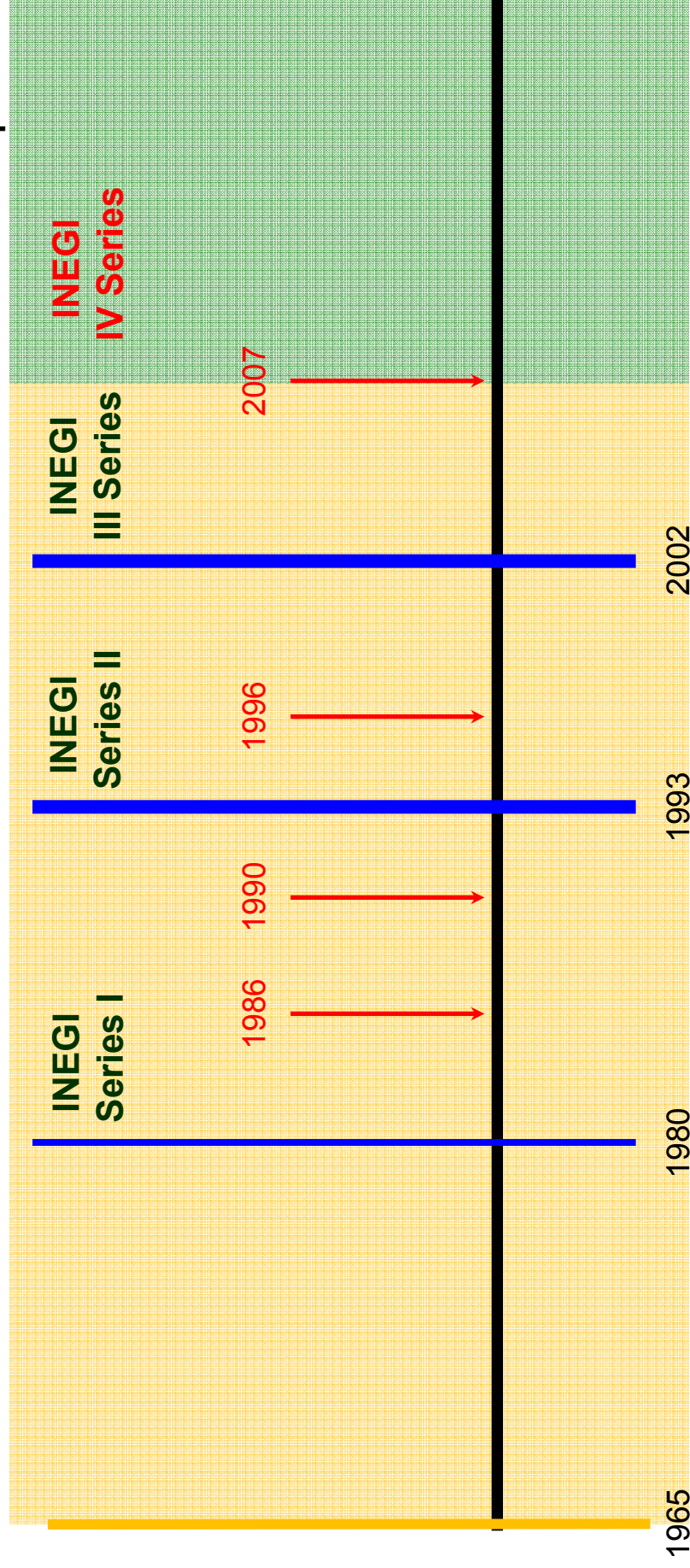
22000 permanent sample plots
established 2004-2007

- ✓ 5 * 5 km in forested areas
- ✓ 20 * 20 km in non-forested areas
- ✓ Quantitative data on trees and shrubs
- ✓ Semi-quantitative data on other pools
- ✓ Soil carbon currently not measured



Updating process of LU/LC maps with information from National Forest Inventory

Information in process



National Forest
Inventory
1992-1994

National Forest
Inventory
2004-2009

Key elements for a REDD strategy

- Building and strengthening institutional capacity.
 - **Institutions:** SEMARNAT, CONAFOR, INE, CONANP, CONABIO, PROFEPA, SAGARPA
 - **Research and education institutions:** ECOSUR, COLPOS, Mexican Carbon Program
 - **NGOs:** WWF, TNC, CCMSS
 - **Land holders** (UNOFOC, Red MOCAF, CONOSIL)
 - Forestry professionals
- Improving targeting and effectiveness of successful programs (PES) and/or expanding their coverage (PROCYMAF).
- Improving monitoring of LU/LUC and carbon stocks through National Forest Inventory.
- Incorporating new financing mechanisms (carbon financing) to address climate change with an impact on biodiversity conservation and poverty alleviation.

Reducing Emissions from Deforestation and Degradation

Strategy will be based on ProÁrbol program

- ❑ Payment for Environmental Services
- ❑ Sustainable Forest Management
- ❑ Sustainable Communitarian Forestry
- ❑ Soil conservation and restoration
- ❑ Forest fire protection
- ❑ Forest health (pest management)

Overview of ProÁrbol's PES program

Purpose

- Payments for environmental services (PES) were designed to provide economic incentives to land forest owners (ejidos, communities and small land owners) to support conservation practices and avoid land use change (deforestation) of forests in a good state of conservation.
- PES is intended to build capacities for developing markets for environmental services in Mexico
- Since 2006, PES program has been receiving technical and financial support from World Bank and GEF in order to improve its efficiency.

Overview of ProÁrbol's PES program

PSAH: Payment for Water Environmental Services

- ❑ Direct payments to land owners for forest conservation activities (US \$30 to \$40 per year in a 5-year period).
- ❑ Beneficiaries are located in areas where important hydrological functions (infiltration, erosion control, flooding) of the forests are to be preserved.

CABSA: Program to promote environmental services markets for carbon sequestration, biodiversity conservation and agroforestry.

- ❑ Supporting design and implementation of environmental services projects (for biodiversity conservation, CDM projects).
- ❑ Strengthening technical and organizational capacities of forest owners and forest professionals.

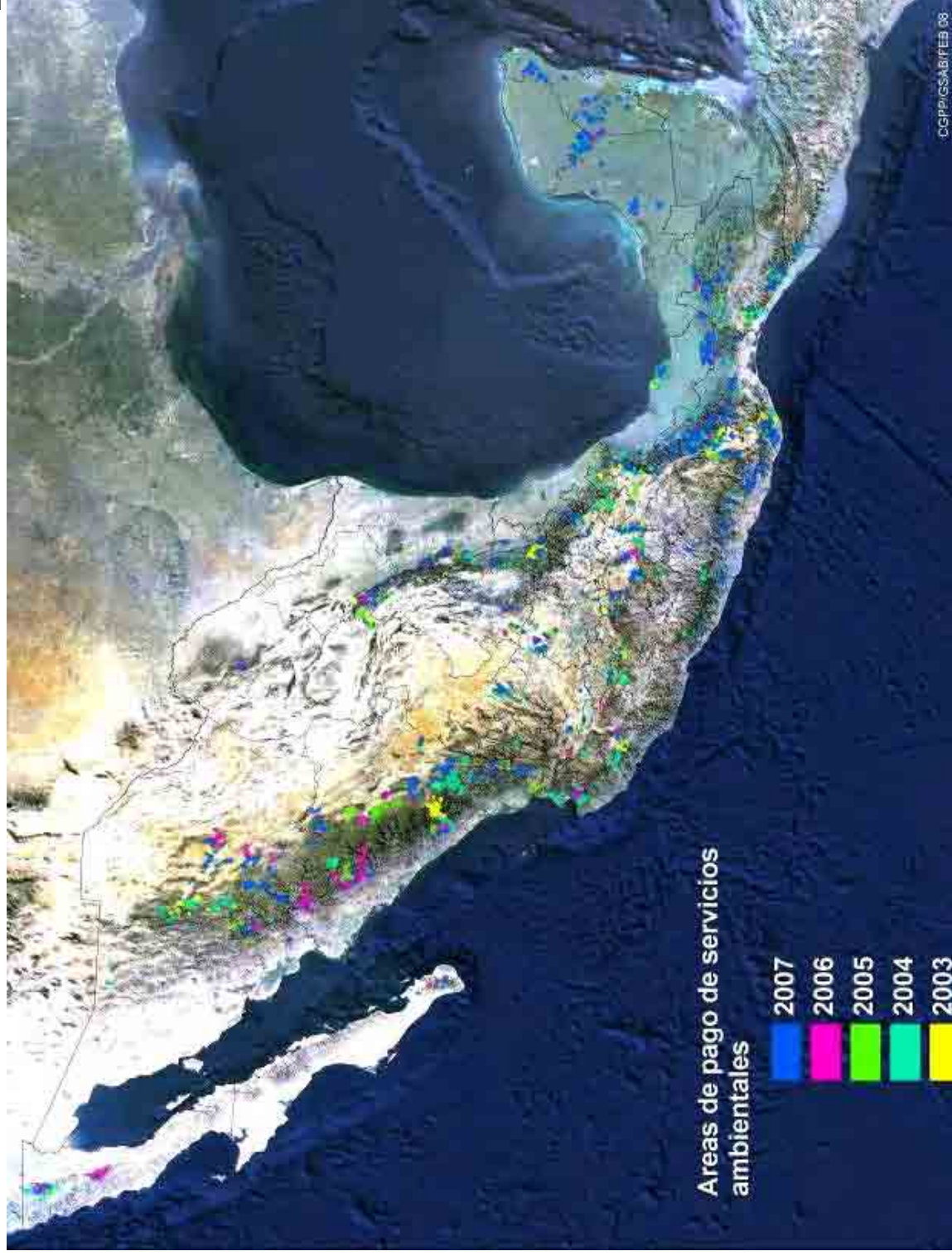
Achievements of ProÁrbol's PES program

	2003-2006	2007	2008
Ejidos, communities, small land holders enrolled	1,188	971	1,116
Area under PES (hectares)	683,859	610,412	461,125
Amount of payments (million USD)	107	103	98

Achievements (2003-2008)

- 1.75 million hectares of temperate forest and rainforest enrolled under PES scheme
- US\$ 308 millions delivered to more than 3,200 ejidos, communities and small forest owners in five-year-period contracts.
- Forest owners also receive payments to support technical assistance

Areas enrolled in PES



PES for hydrological services (PSAH)

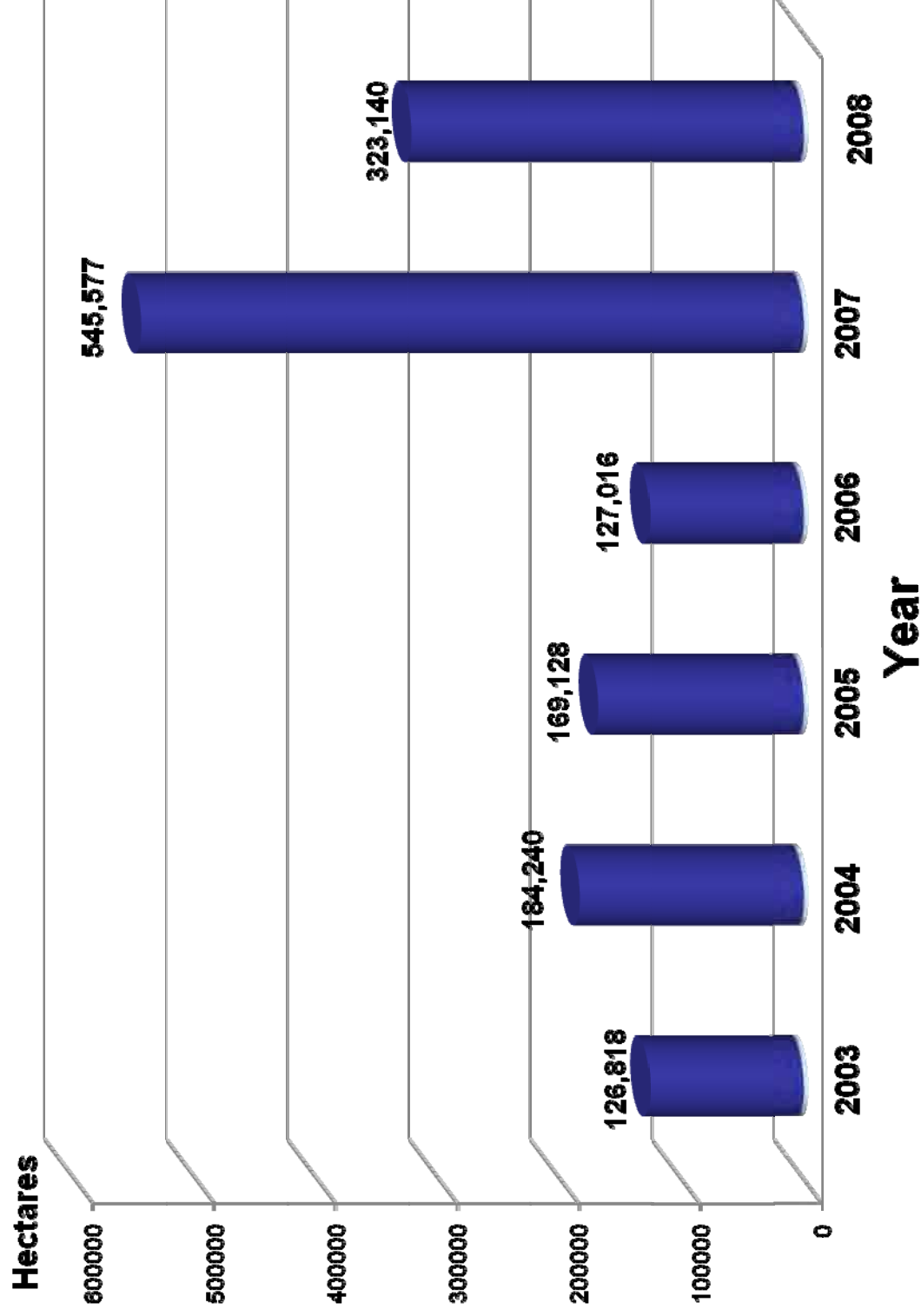
- PSAH started in 2003 with an annual budget of USD \$20 million
- Since 2004 it was increased to an amount of USD \$30 millions.
- Financial resources are obtained from users of national water sources through Federal Rights Law .
- Payments are delivered in a five-year period through Mexican Forest Fund.
- Monitoring is carried out annually using remote sensing techniques as well as field surveys to ensure compliance with terms of PES contracts



Eligibility Areas

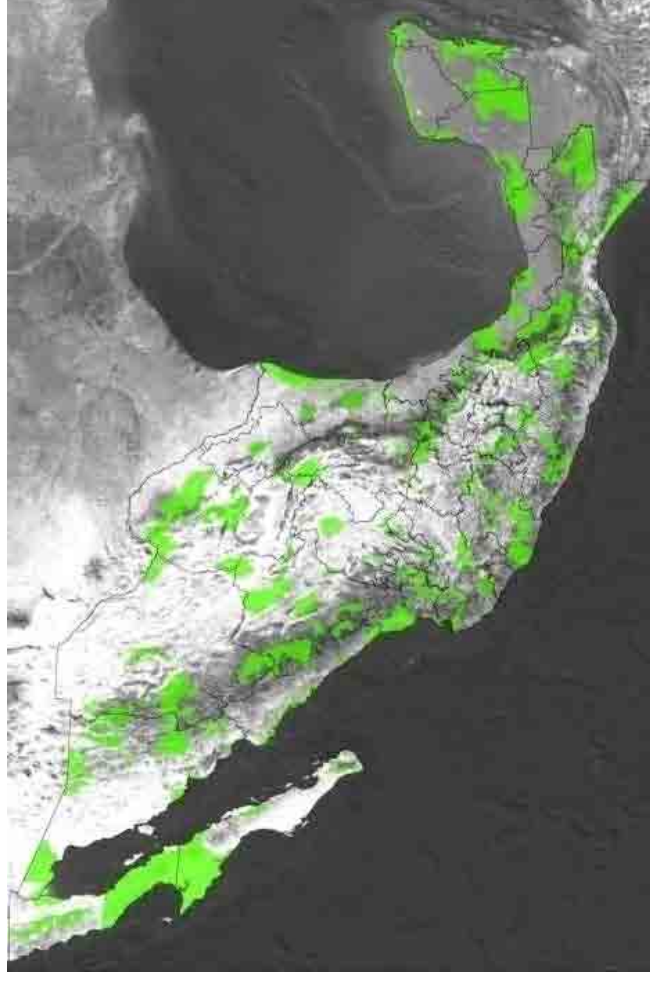
- Areas of interest include watersheds associated with supply of water to population centers, as well as areas with scarcity of water or over exploited aquifers.

PES for hydrological services (PSAH)



PES for biodiversity conservation, carbon sequestration and agro-forestry management (CABSA)

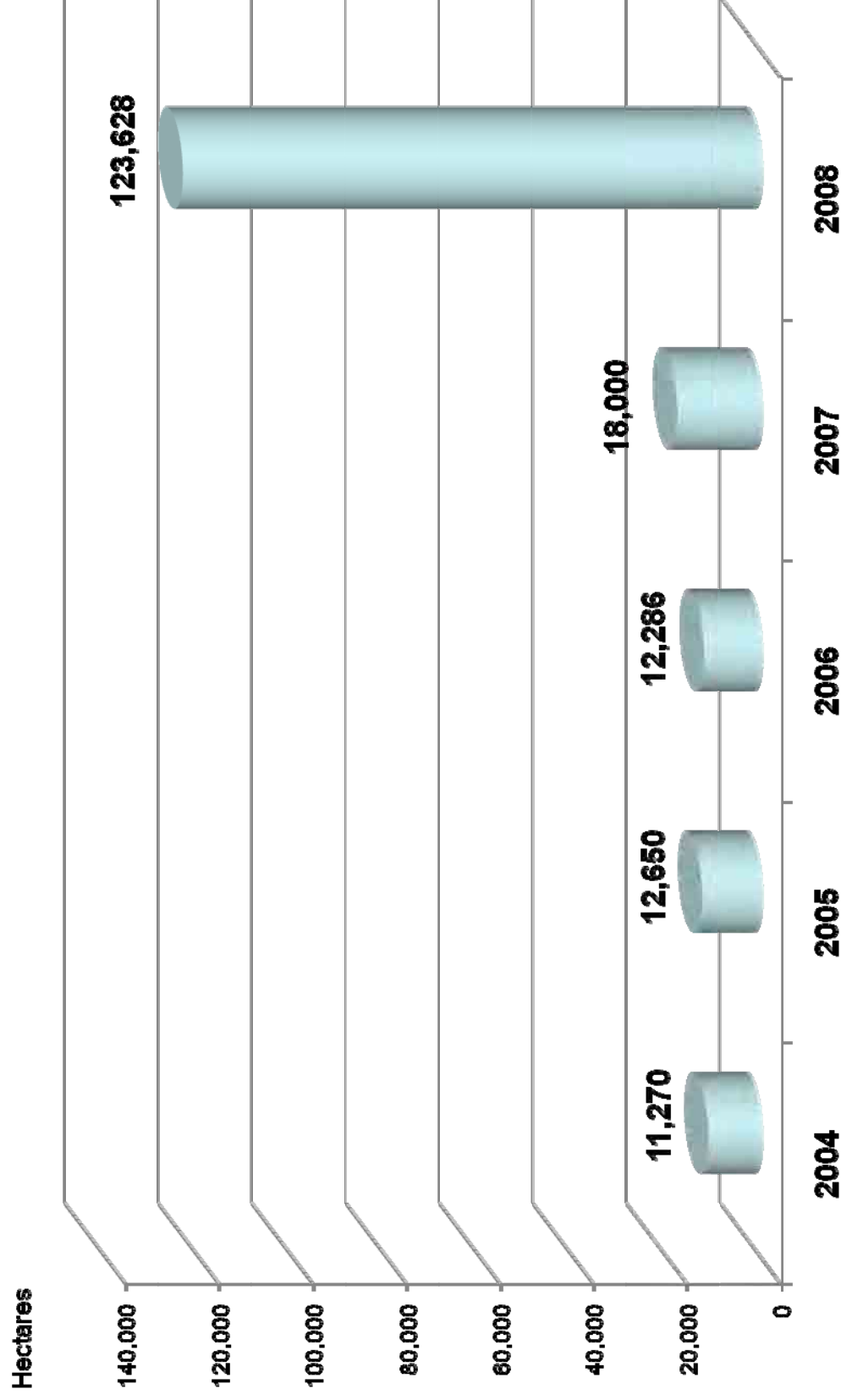
- It started in 2004 with a budget of USD \$10 million from tax sources.
- In 2008 available budget was about USD \$40 million.
- Payments were intended to build capacity among land forest owners and professionals in forest sector to link them to the international markets of biodiversity and forest carbon.
- Monitoring is carried out annually through field surveys to ensure compliance with terms of PES contracts and management plan for biodiversity conservation.



Eligibility Areas

- Forest ecosystems with a good state of conservation.
- Natural Protected Areas, RAMSAR sites, Areas of Interest for Bird Conservation

PES for biodiversity conservation, carbon sequestration and agro-forestry management (CABSA)



Improving focalization of PSAH to reduce deforestation in areas of high hydrological value

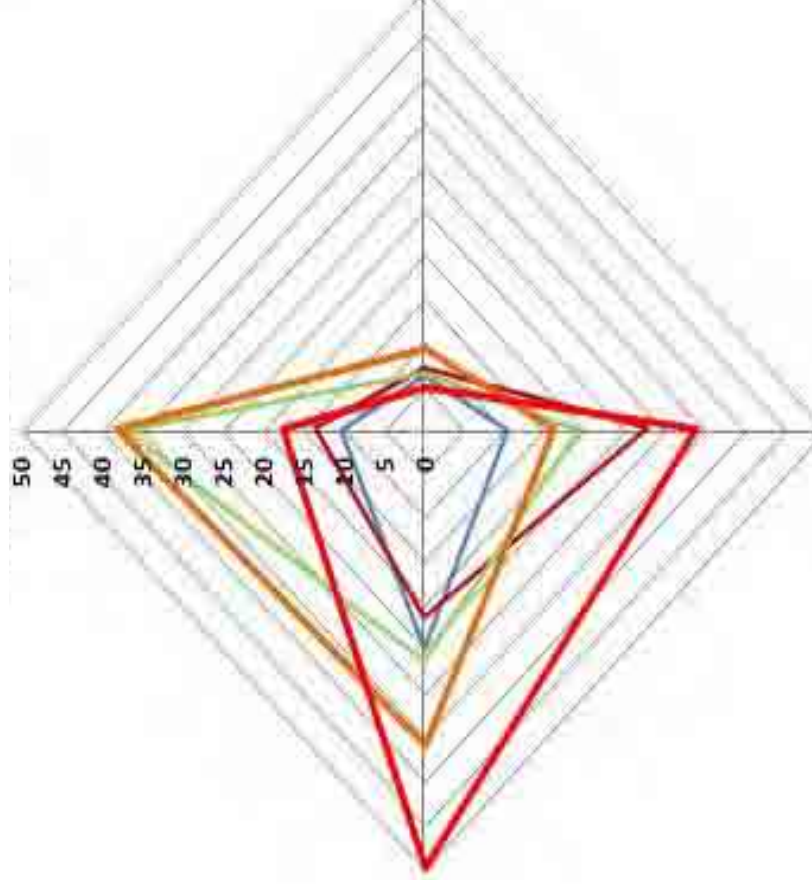
Deforestation risk	2003 (%)	2004 (%)	2005 (%)	2006 (%)	2007 (%)
Very high	3.6	10.9	7.3	5.6	13.8
High	6.7	16.8	11.9	10.4	19.9
Medium	17.3	20.5	20.6	16.1	17.7
Low	30.4	29.9	26.8	24.7	21.7
Very low	41.9	21.8	33.1	42.9	26.8
Total	100	100	100	100	100

PES and poverty

Marginalization Index	2003 (%)	2004 (%)	2005 (%)	2006 (%)	2007 (%)
Very high	25.0	21.5	26.4	35.9	49.9
High	46.9	61.4	52.9	46.9	41.5
Medium	18.1	7.9	13.6	12.0	5.2
Low	7.9	5.7	6.2	4.2	2.9
Very low	2.1	3.4	0.7	1.0	0.5
Total	100	100	100	100	100

Focalization of PSAH

Over-exploited aquifers



Marginalization
Index
(High to very high)

Deforestation Risk
(High to very high)

Water availability
zone (1 -3)

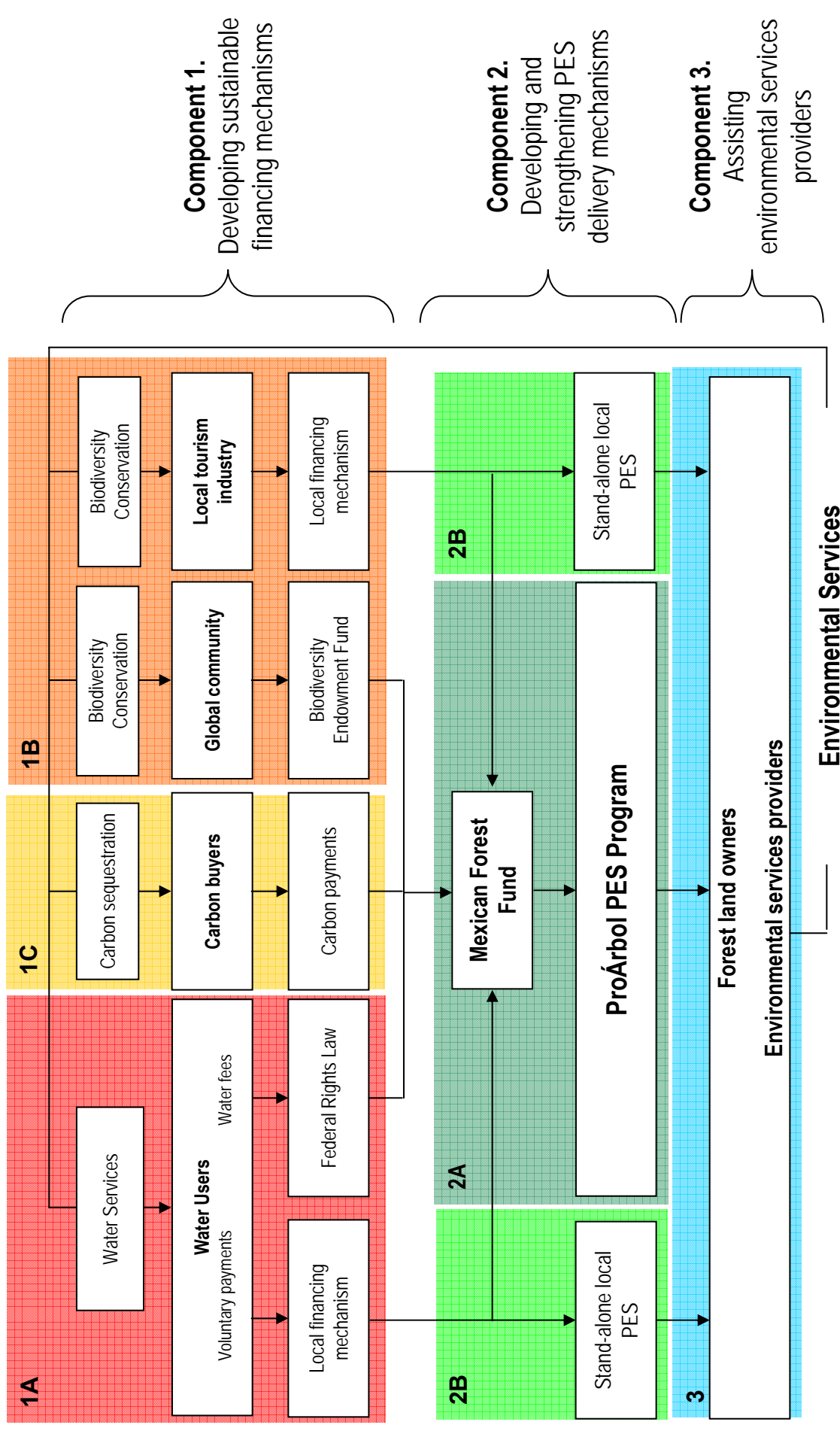


ECOSUR

Environmental Services Project



COMISION NACIONAL FORESTAL



Communitarian Forestry: PROCYMAF

ProÁbol's PROCYMAF is aimed to:

- ✓ Build capacity of "ejidos" and indigenous communities for implementing sustainable forest management.
- ✓ Promote communitarian participation in forestry and forest conservation through a participatory planning process
- ✓ Increase governance and share of benefits inside "ejidos" and indigenous communities
- ✓ Increase livelihood conditions and income sources.
- ✓ Provide support for technical assistance for developing added-value forest projects based on sustainable forest management, diversification of activities and forest conservation.
- ✓ Continuous training and technical assistance for developing communitarian forest enterprises (CFE).



PROCYMAF Achievements and goals

State	Supported communities
Chihuahua	31
Durango	189
Guerrero	233
Jalisco	179
Michoacán	246
Oaxaca	481
Quintana Roo	118
Total	1,477

✓ 93% of communities (1,477 ejidos y indígenas communities out of 1,539) in seven states (Chihuahua, Durango, Guerrero, Jalisco, Michoacán, Oaxaca y Quintana Roo) where forestry is its main economic activity were supported by PROCYMAF

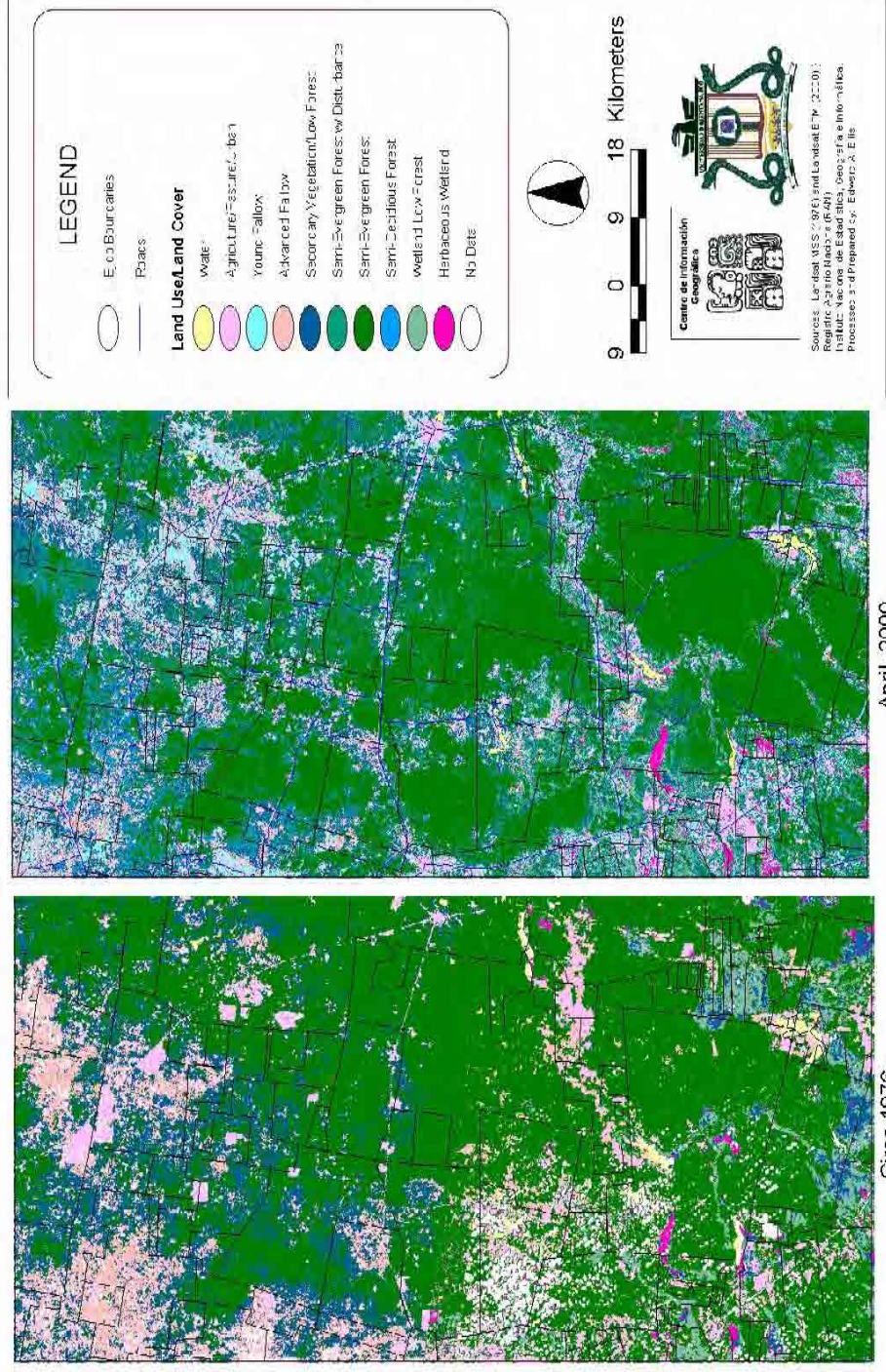
States	Forest communities
Campeche	75
Chiapas	297
Chihuahua	216
Durango	263
Guerrero	244
Jalisco	166
México	246
Michoacán de Ocampo	253
Oaxaca	303
Puebla	149
Quintana Roo	104
Veracruz de Ignacio de la Llave	144
Totales	2,460
Total República Mexicana	3,056

✓ Expanding PROCYMAF to 12 states could bring support to 2,460 ejidos and communities (80.5% of Mexico's total) where forestry is its main economic activity.

PROCYMAF and deforestation

Central Quintana Roo, dominated by community forests managed for timber, had the lowest recorded rate of deforestation in southeastern tropical Mexico (0.1%), and lower than any protected areas in the region (Bray et al. 2004)

Land Use/Land Cover in the "Zona Maya" of the Municipio Felipe Carrillo Puerto, Quintana Roo, Mexico



Circa 1976

April, 2000

Thank you!

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