Mexico's REDD+ Readiness Preparation Proposal

FCPC Participants Committee
October, 2009

Outline presentation

A. Background

B. Components

    1.   Organization and consult

    2.   Prepare REDD strategy

    3.   Develop a reference scenario

    4.   Design a monitoring system

    5.   Strategic Environmental and Social Assessment

Background

Mexico's GHG emissions

- 643 million tonnes GHG emitted annually (INEGI 1990 – 2002).

- 1.5% of global emissions.

- 13th place for its GHG emissions.

- 93th place for its GHG emissions *per capita* (5.4 ton CO_2e)

- 15th place for GHG emissions from energy sector.

- 16th place for GHG emissions from LULUCF (deforestation and forest degradation included).

Source: SEMARNAT-INE. 2006. Third National Communication to UNFCCC on GHG emissions.

Mexico's GHG emissions

14% of GHG total emissions in Mexico comes from LULUCF:

- Deforestation (10.5%)
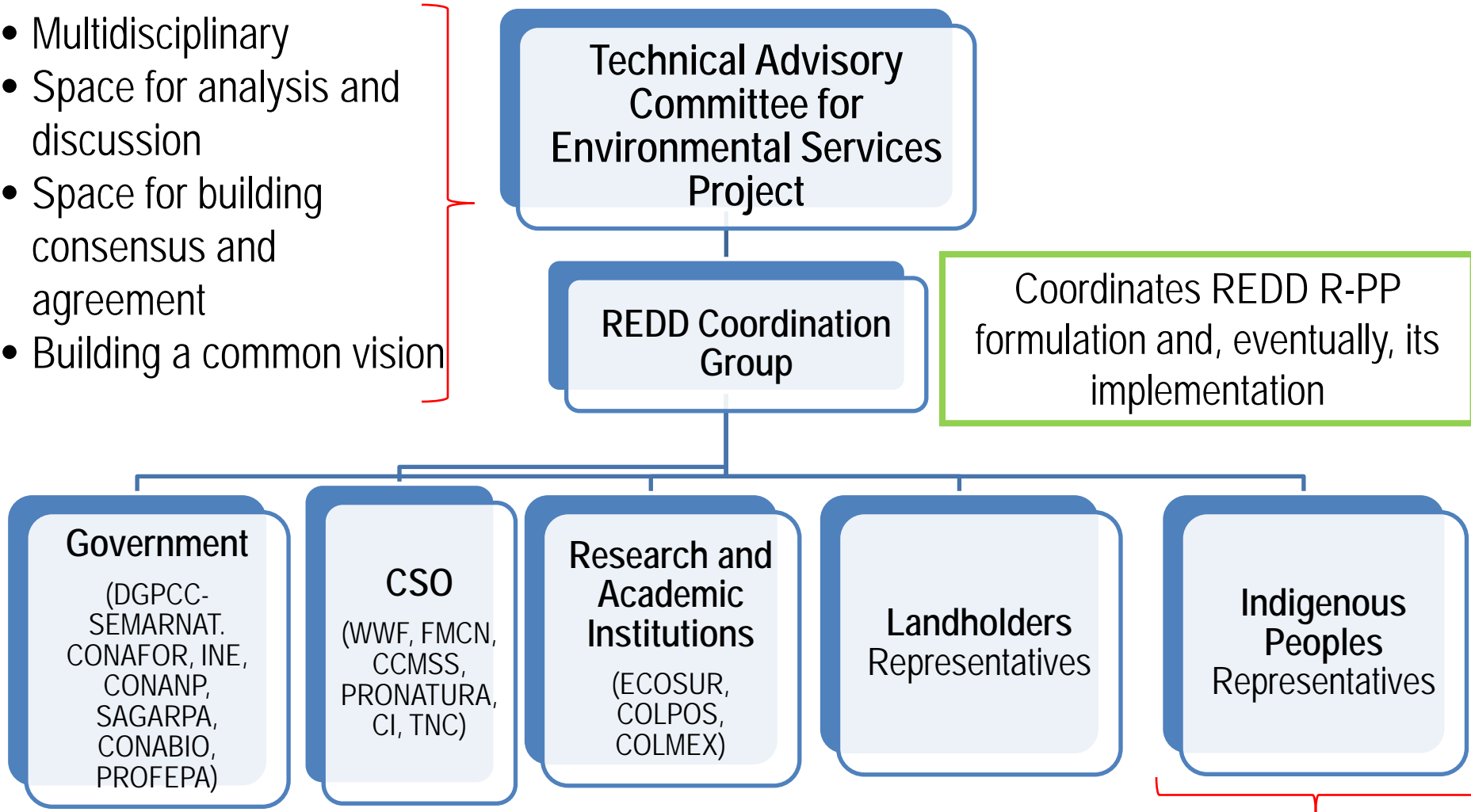- Degradation -forest fires, erosion, pests, abandoned forests- (3.5%)
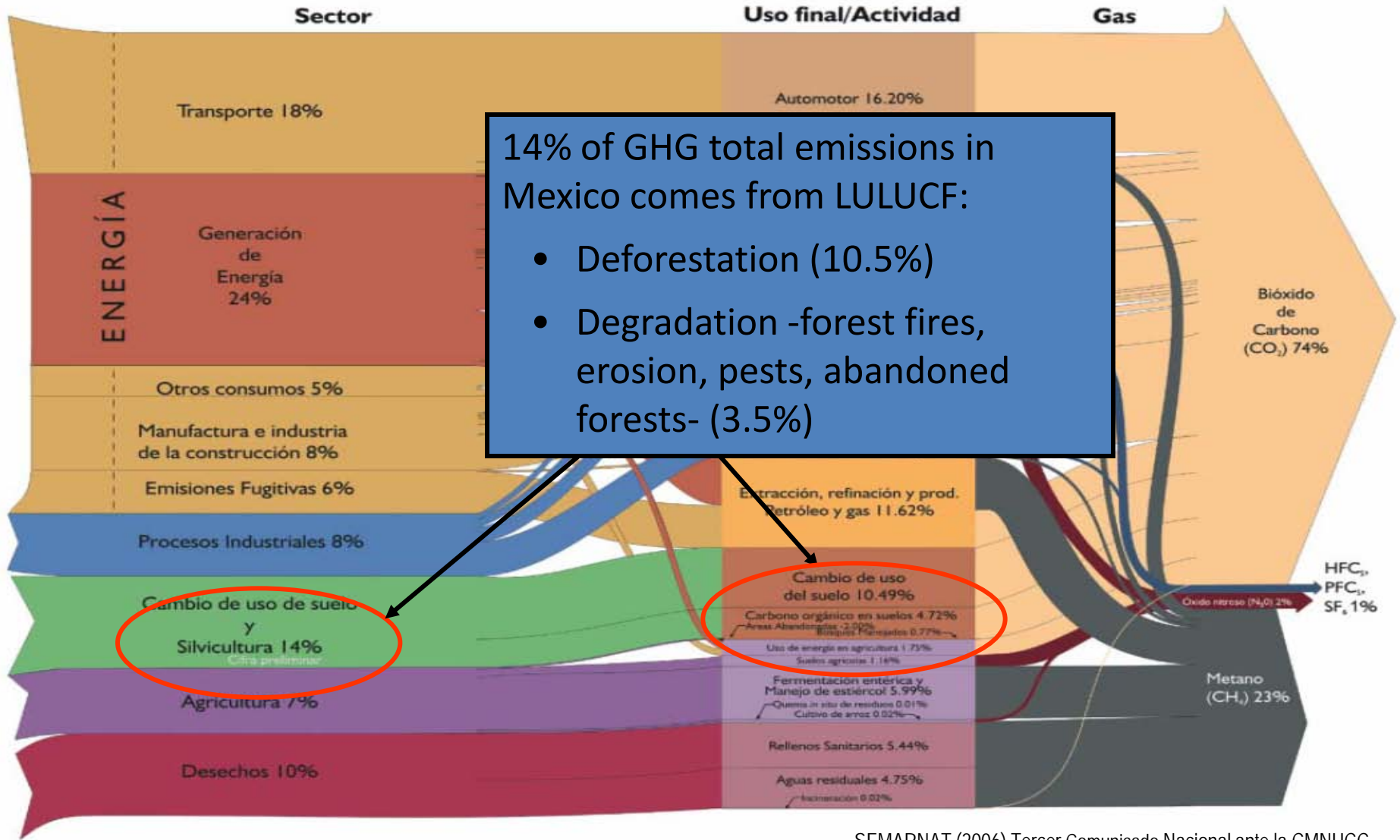
SEMARNAT (2006) Tercer Comunicado Nacional ante la CMNUCC

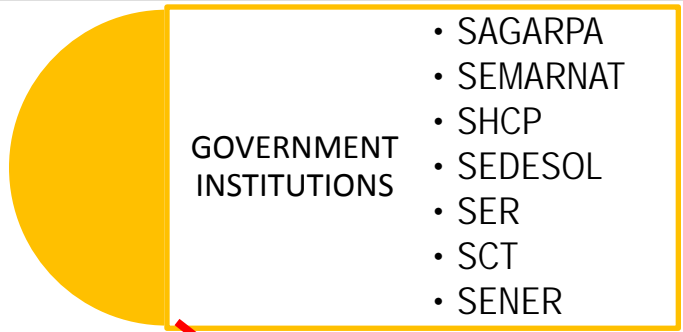# 1. Organize and consult

National Readiness Management Arrangements

- Multidisciplinary
- Space for analysis and discussion
- Space for building consensus and agreement
- Building a common vision

Technical Advisory Committee for Environmental Services Project

REDD Coordination Group

Coordinates REDD R-PP formulation and, eventually, its implementation

Government
(DGPCC-SEMARNAT. CONAFOR, INE, CONANP, SAGARPA, CONABIO, PROFEPA)

CSO
(WWF, FMCN, CCMSS, PRONATURA, CI, TNC)

Research and Academic Institutions
(ECOSUR, COLPOS, COLMEX)

Landholders Representatives

Indigenous Peoples Representatives

Participation has begun recently

National Readiness Management Arrangements

GOVERNMENT INSTITUTIONS
- SAGARPA
- SEMARNAT
- SHCP
- SEDESOL
- SER
- SCT
- SENER

- Institutional support from the highest political level for design and implementation of national REDD strategy
- Policy, programs and budget working in the same direction
- Build legal and institutional frameworks as appropriate
- Work as one government

Inter-Secretary Commission for Climate Change (CICC)

Working group Special Program on Climate Change (SEMARNAT)

Working Group for International Affairs (SRE)

Adaptation Working Group (INE-SEMARNAT)

REDD Working Group (CONAFOR)

Advisory Council on Climate Change

CTC-REDD Coordinator Group
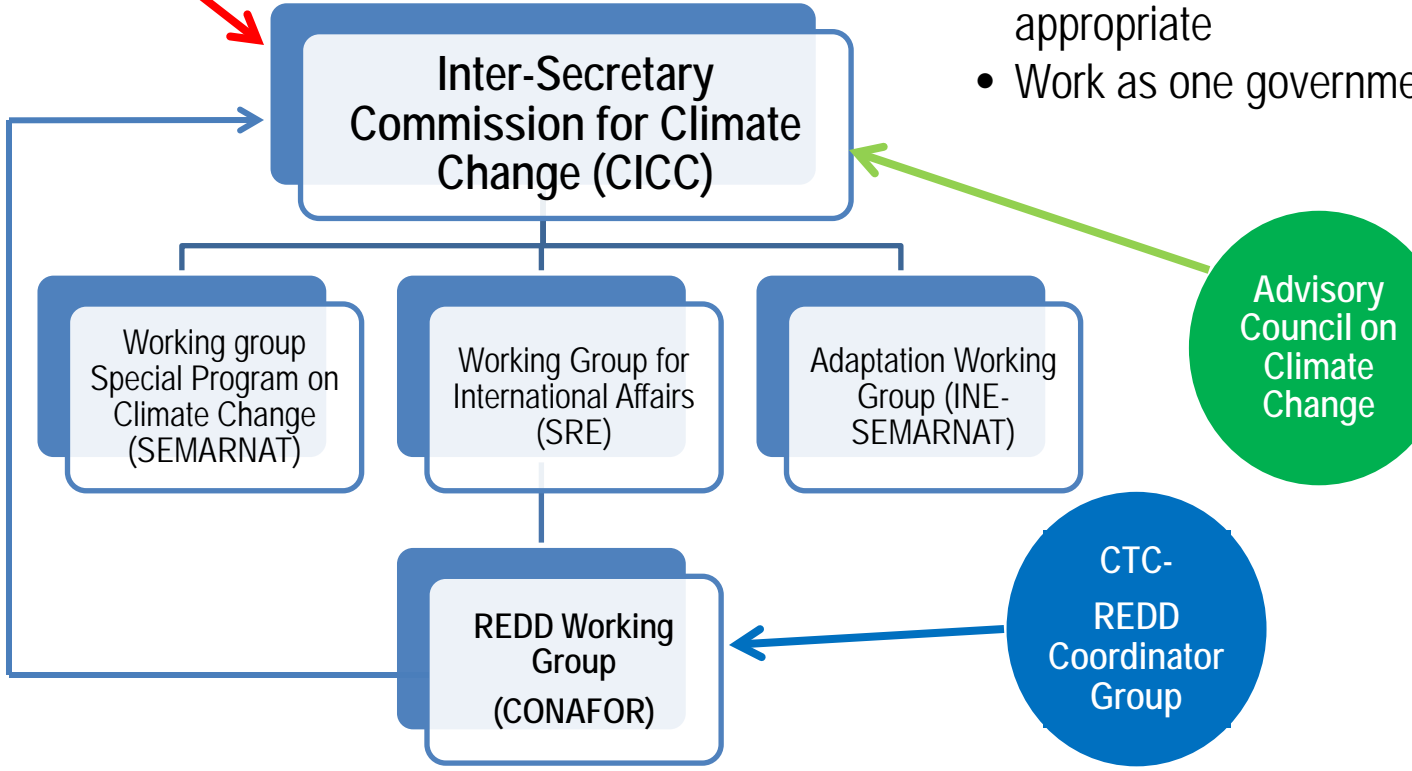
- **Mario Molina Centre**
- **Mexican Carbon Program (research)**
- **International Experts**
- **Private organizations**

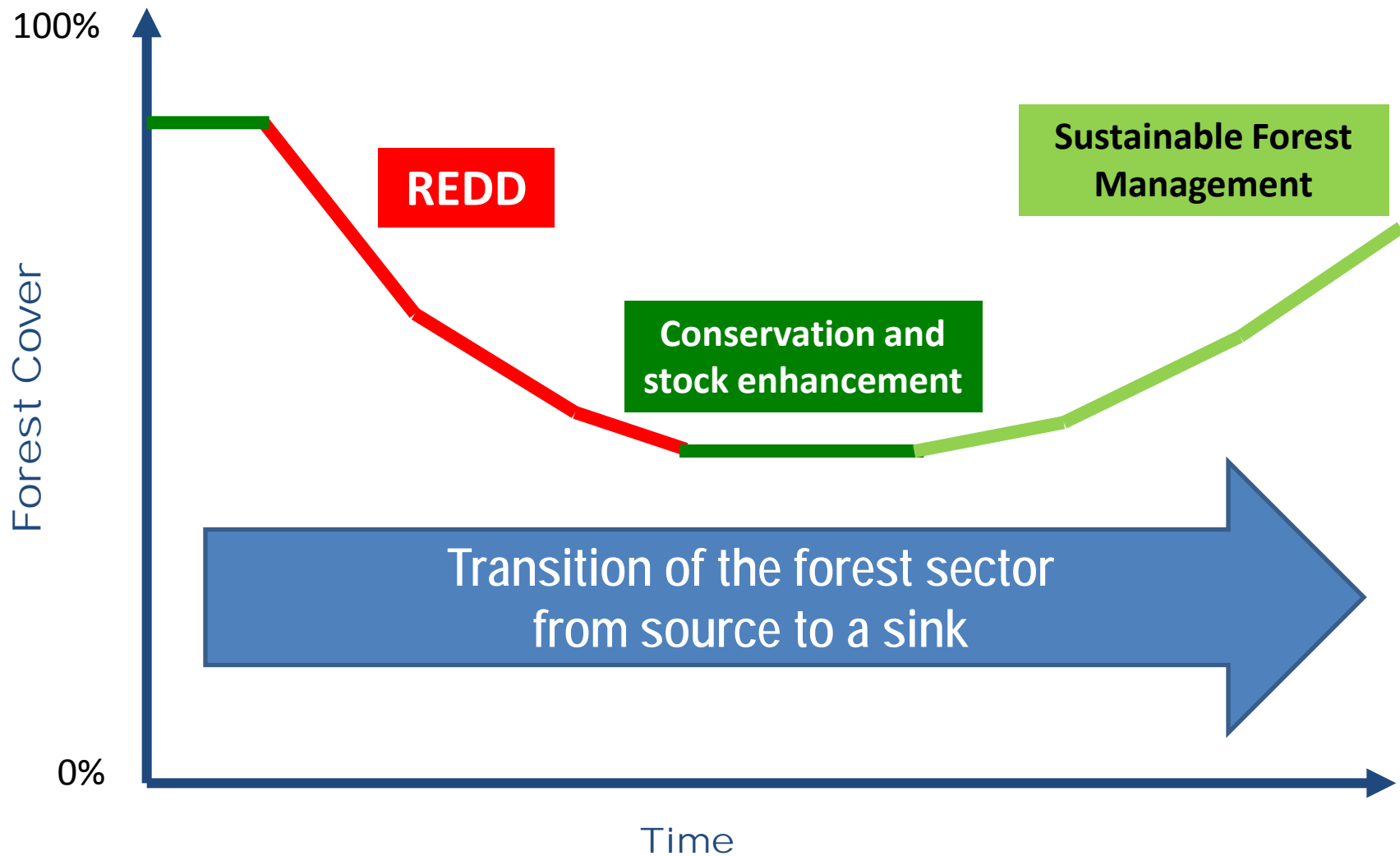# Stakeholder consultation and participation

- Consultation bodies are reflected in Forestry Law and Rural Development Law
- They have national or regional coverage
- Broad participation of stakeholders by sector
- Challenges:
    - Make them work efficiently for REDD consultation process
    - Local consultation process

National and State Councils for Rural Development

CTC-Coordinator Group REDD

National and State Forest Councils

Local level (Communitarian Forestry)

2. Prepare REDD strategy

Problem and opportunities

Carbon stock losses	Stable or growing Carbon stocks
57% under no-management plan	**43% under sustainable forest management**

Deforestation and forest degradation	**12 million hectares**	**9 million** hectares under SFM	**Sustainable Forest Management**
	Potential for: • timber production • Non-timber forest production • Ecosystem services	• **0.9 million hectares** already certified • **1 million hectares** pre-certified	

ProÁrbol: PSA, PRODEFOR, PROCYMAF
Timber and non-timber production, Payments for Ecosystem Services, Ecotourism, Wildlife Management Units

Forest Land Protection
Improved Land Use Planning, Communitarian Land Use Planning. Natural Protected Areas, Communitarian and Private Protected Areas

Sectoral Policy
Agriculture (PROCAMPO, PROGAN), Land Use Change (urban, infrastructure, roads)
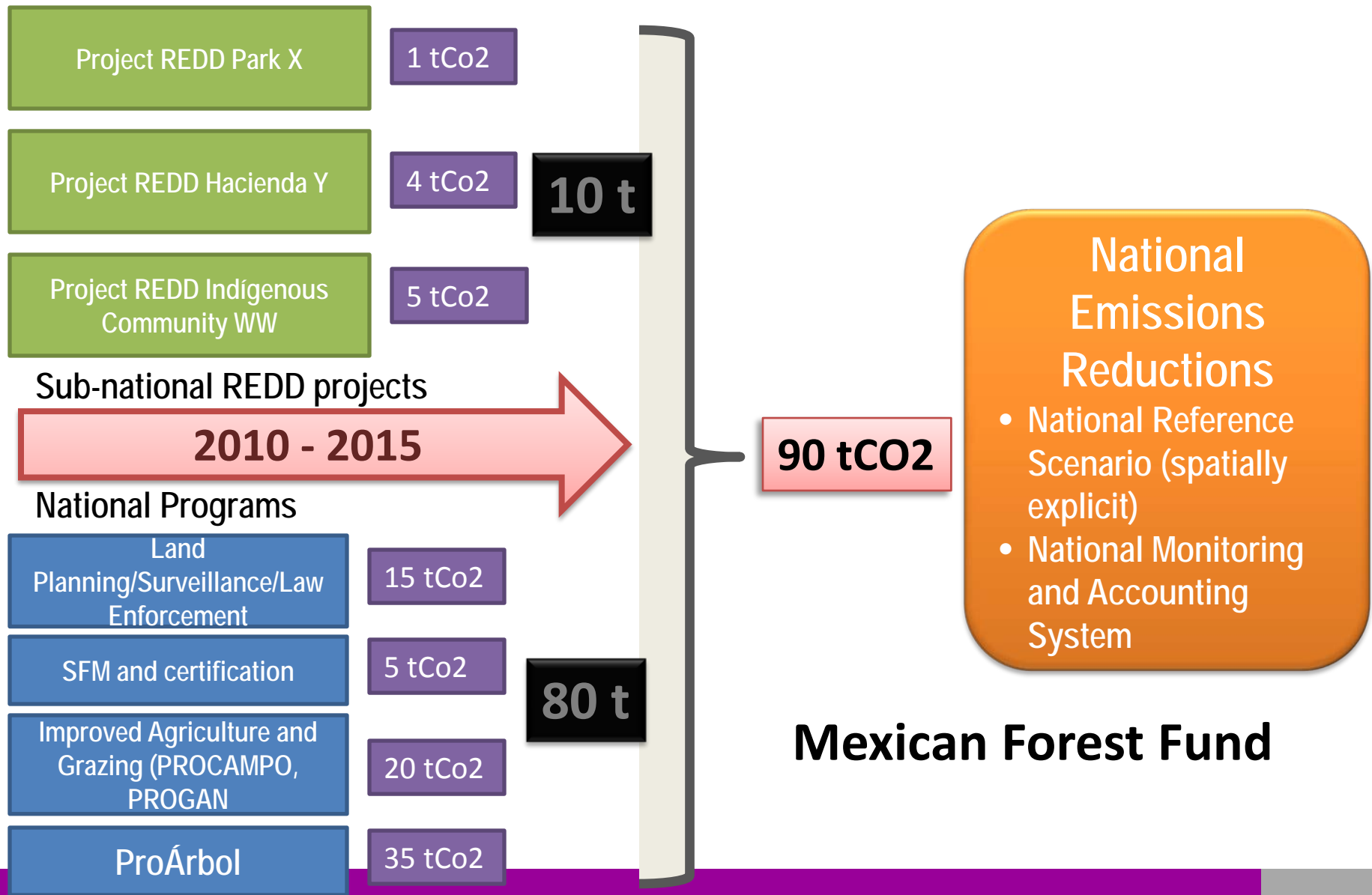
Key elements for National REDD

- Building and/or strengthening institutional capacities
    - Government: SEMARNAT, CONAFOR, INE, CONANP, CONABIO, PROFEPA, SAGARPA
    - Research: ECOSUR, COLPOS, Programa Mexicano de Carbono
    - OSC: WWF, TNC, CI, CCMSS, FMCN
    - Landholders and Indigenous People
    - Professionals on Forestry Sector

- **Improving targeting and effectiveness** of existing programs (**PSA**) and/or **extending** its **coverage** (communitarian forestry -**PROCYMAF**-).

- **Promoting Sustainable Forest Management** (SFM) and diversification

- **Improving monitoring** capabilities for LU/LUC based on National Forest Inventory.

- **Integrating new financing mechanisms** (carbon finance) with positive impact con on **biodiversity conservation** and **livelihoods** of forest landholders and inhabitants.

Implementation scales

Project REDD Park X	1 tCo2
Project REDD Hacienda Y	4 tCo2
Project REDD Indígenous Community WW	5 tCo2

10 t

Sub-national REDD projects

2010 - 2015

National Programs

Land Planning/Surveillance/Law Enforcement	15 tCo2
SFM and certification	5 tCo2
Improved Agriculture and Grazing (PROCAMPO, PROGAN	20 tCo2
ProÁrbol	35 tCo2

80 t

90 tCO2

National Emissions Reductions

- National Reference Scenario (spatially explicit)
- National Monitoring and Accounting System

Mexican Forest Fund

Different activities are considered…

1) **Strengthening legal and institutional legal, policy and institutional frameworks.**

   - Create a common vision, to strengthen consideration of climate change and natural resources into planning and decision-making processes of related institutions
   - Increased targeting of institutional programs (ProÁrbol, PROCAMPO)

2) **Improve law enforcement and promote certification to combat illegal logging.**

   - Surveillance, forest certification, chain of custody

3) **Integrating suitable forest lands to sustainable forest management** (timber and non-timber production)

4) **Diversification of forest activities** (ecosystem services, ecotourism)

5) **Increasing productivity of agriculture and grazing.**

   - PROCAMPO, PROGAN

6) **Payment for ecosystem services based on carbon financing.**

   - Improve effectiveness of performance-based payments

7) **Building capacities and strengthening governance** (ejidos and communities)

8) **Investments for rural development**

   - Improving livelihood of land forest owners and forest inhabitants with support of other programs
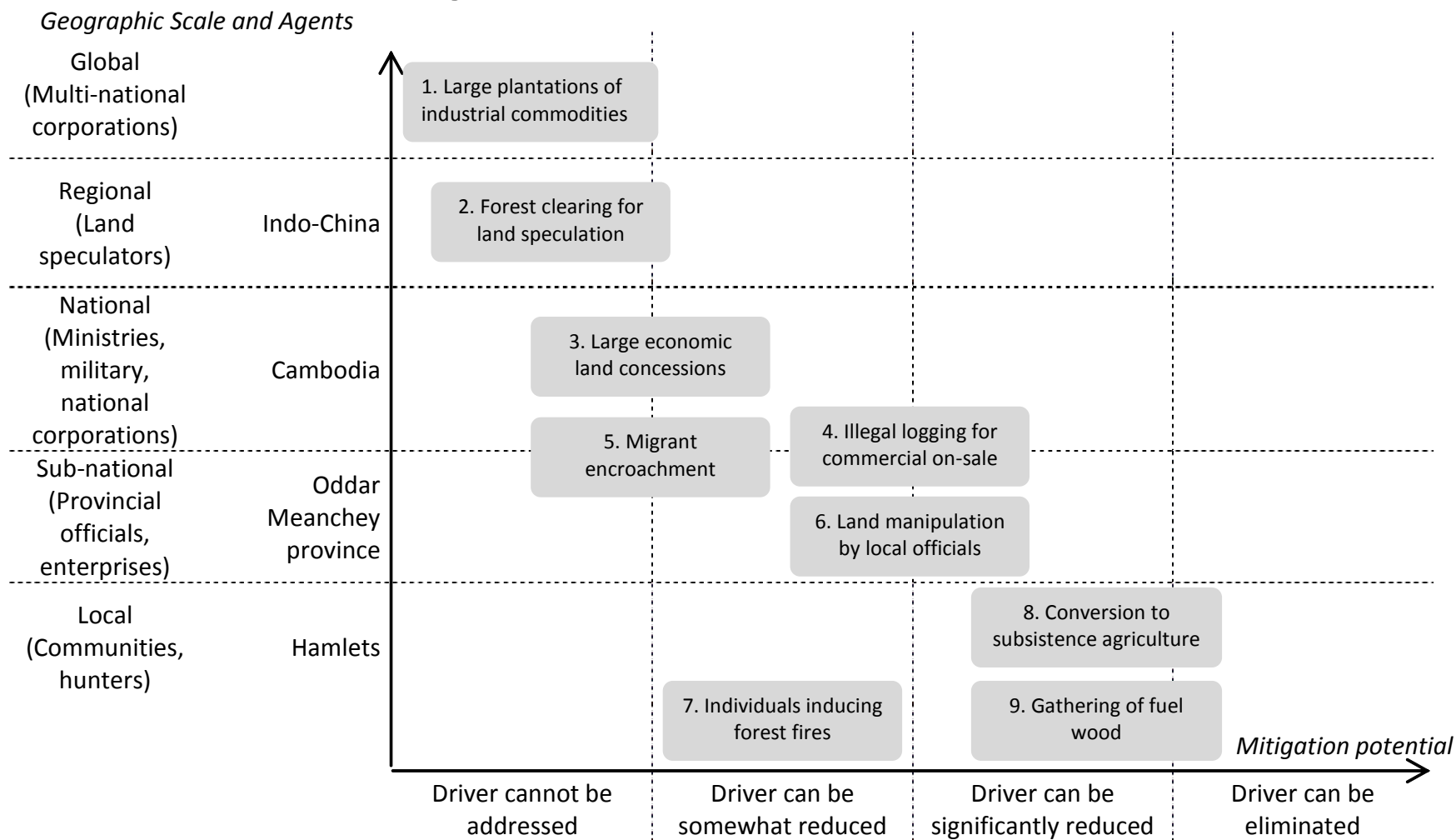
…to address different drivers and agents for deforestation and forest degradation

Driver	PES	SFM, NTFP, Ecotourism	Certification Chain of custody	Increasing agriculture /grazing productivity	Securing land tenure	Land use planning and/or Communitarian planning	Law enforcement
Agriculture for subsistence	XXX	XXX		XXX		XXX	
High profit agriculture and grazing				XXX		XXX	XXX
Illegal logging		XXX	XXX		XXX	XXX	XXX
Forest fires	XXX	XXX		XXX	XXX	XXX	
Urban and infrastructure development						XXX	XXX

Scope and scale of activities by DD drivers and agents

Geographic Scale and Agents

Geographic Scale and Agents		Driver cannot be addressed	Driver can be somewhat reduced	Driver can be significantly reduced	Driver can be eliminated
Global (Multi-national corporations)		1. Large plantations of industrial commodities			
Regional (Land speculators)	Indo-China	2. Forest clearing for land speculation			
National (Ministries, military, national corporations)	Cambodia	3. Large economic land concessions			
Sub-national (Provincial officials, enterprises)	Oddar Meanchey province	5. Migrant encroachment	4. Illegal logging for commercial on-sale		
			6. Land manipulation by local officials		
Local (Communities, hunters)	Hamlets		7. Individuals inducing forest fires	8. Conversion to subsistence agriculture	
				9. Gathering of fuel wood	

Mitigation potential

Source: Paper Submitted for publication: Enabling REDD: Learning from Cambodia Mark Poffenberger, Ph.D., Steven De Gryze, Ph.D., and Leslie Durschinger

Mitigation potential and marginal costs
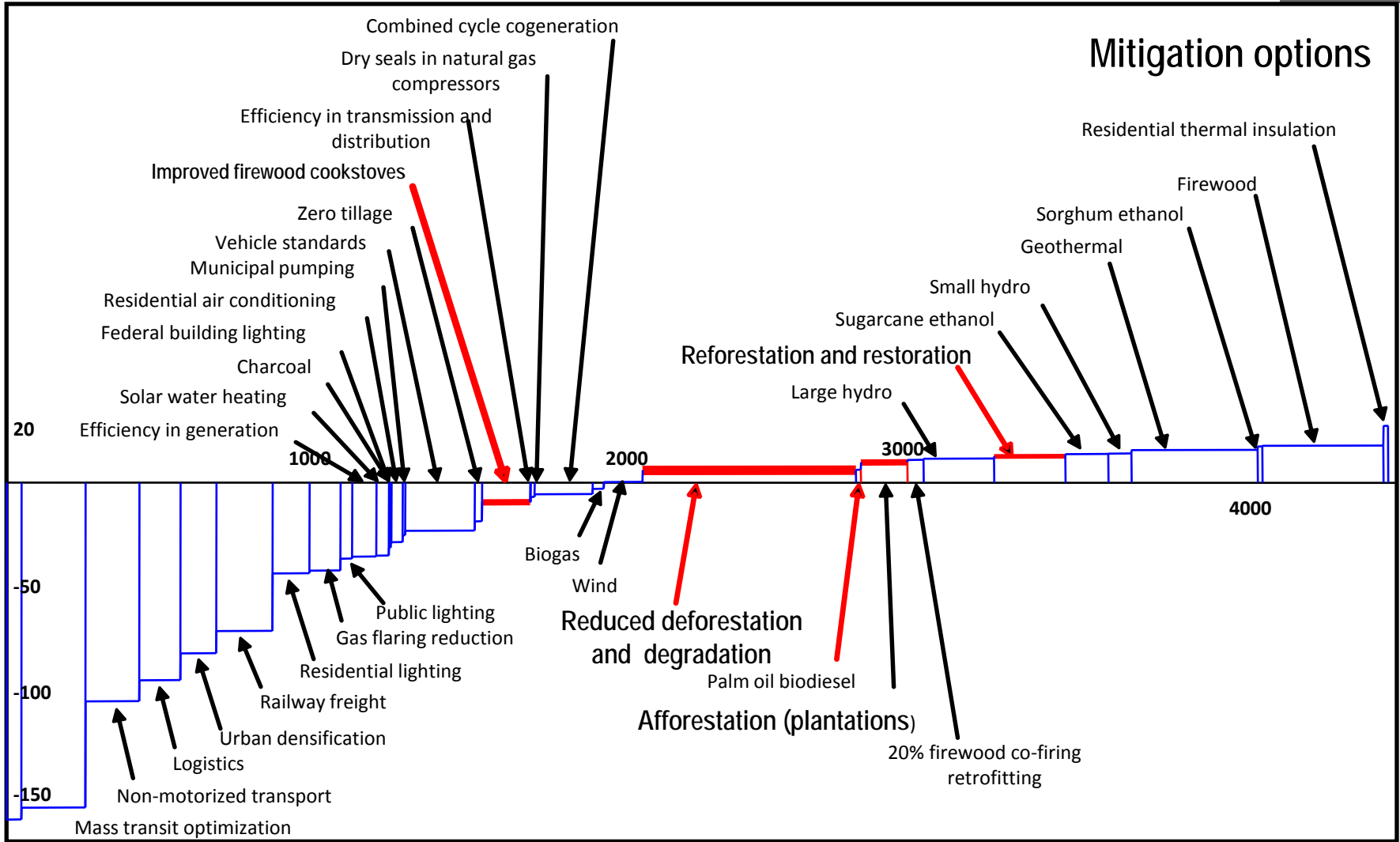
Source: SHCP (2008). México: Estudio para la Disminución de Emisiones de Carbono (MEDEC - 2008).

ProÁrbol and Climate Change

Mitigation through ProÁrbol activities

1. REDD+ activities

– Sustainable Forest Management

– Communitarian Forestry

– **Payment for Environmental Services**

– Soil conservation and restoration

– Forest fires and pest protection

2. Carbon sequestration activities

– Reforestation

– Commercial plantations

Strategic Environmental and Social Assessment

CONAFOR has experience on E&S assessment for previous WB supported projects:

- Communitarian Forestry (PROCYMAF)
- Environmental Services Project

Available E&S assessment considers:

- **Natural Habitats and Forests**: both projects with positive impacts (improved use, management and conservation of forest lands)
- **Indigenous People**: both projects have developed **Indigenous People Development Plans** focused on building organizational and technical capacities (increasing governance) for implementing activities related with sustainable forest management and forest conservation

Other potential REDD activities must be considered in E&S; i.e.:

- Natural Protected Areas
- Increasing agriculture productivity

3. Develop a reference scenario

Reference scenario

Thousand hectares

- Other forest lands
- Forests

(1990, 2000, 2005, 2010)

Thousand hectares

- Secondary
- Primary
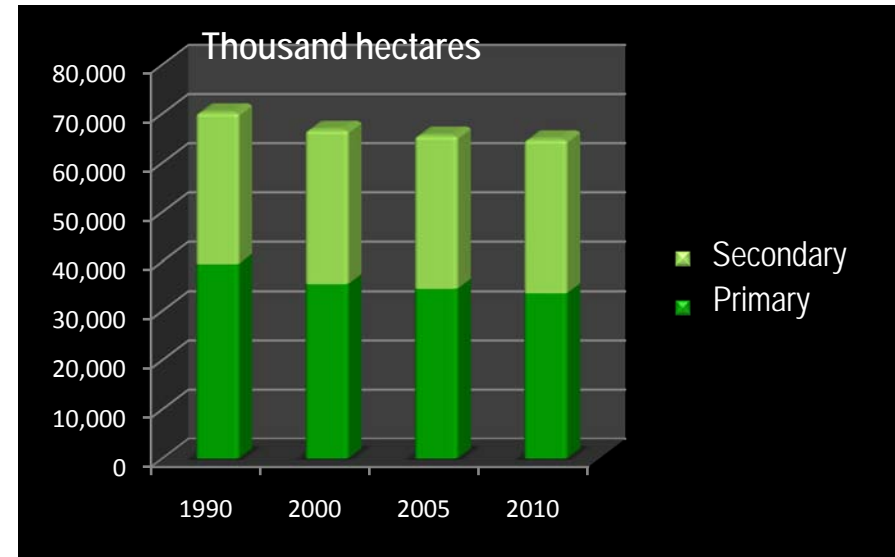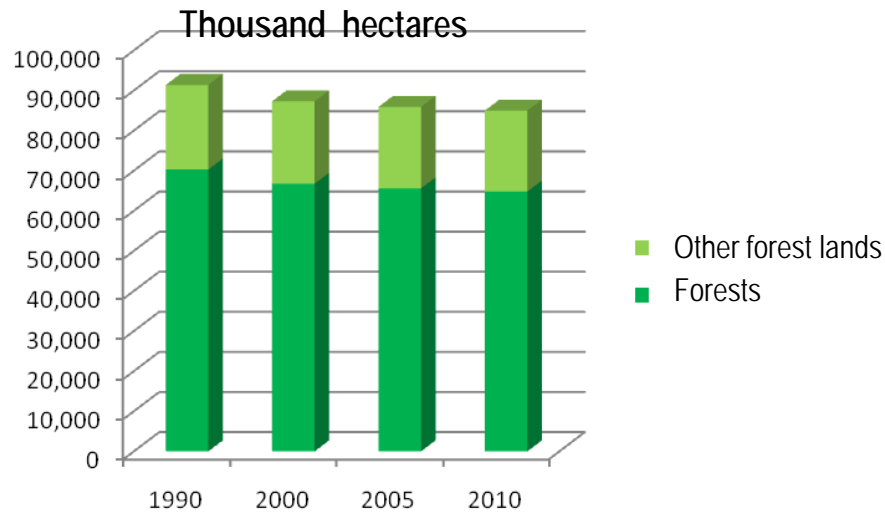
(1990, 2000, 2005, 2010)

Category (FRA 2010)	Deforestation (,000 ha/year on given period)		
	1990-2000	2000-2005	2005-2010
Forests	354	235	155
Other forest lands	54	41	32
Total deforestation	**408**	**276**	**187**

Category (FRA 2010)	Area (,000 hectares)			
	1990	2000	2005	2010
Bosque	70,291	66,751	65,578	64,802
Primary forests	39,492	35,468	34,531	33,595
Secondary forests	30,799	31,283	31,047	31,207

Deforestation has been reduced by almost a third from one period to the next

Reference scenario

Pie chart:
- 82% — Land use change
- 8% — Illegal logging
- 6% — Fires and pests
- 2% — Authorized Land use change
- 2% — Natural disturbances

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

Categoría FRA 2010	Annual change rate		
	1990-2000	2000-2005	2005-2010
Forests	-0.52%	-0.35%	-0.24%
Primary forests	-1.07%	-0.53%	-0.55%
Secondary forests	0.16%	-0.15%	0.10%

Sources: CONAFOR - INEGI, 2009. Land use Dynamics Study 1993 – 2002 – 2007
INEGI. Land Use and Vegetation Maps, Series II, III y IV (scale1:250,000)

- **Effect of policy and programs** (Ley Nacional de Desmontes, PROCAMPO, PROCEDE)
- **Population growth**
- **Proximity to** population and commercialization centers
- **Price of agriculture commodities** (corn and beef)

Reference scenario

Deforestation risk

- non-forest (black)
- low (green)
- medium (yellow)
- high (red)

Variables included:
- Population density
- Proximity to population and comercialization centers
- Roads
- Land suitability (slope)

0   500   1000 Kilometers

Fuente: ECOSUR

Biomass density

Biomass class (tdb/ha)
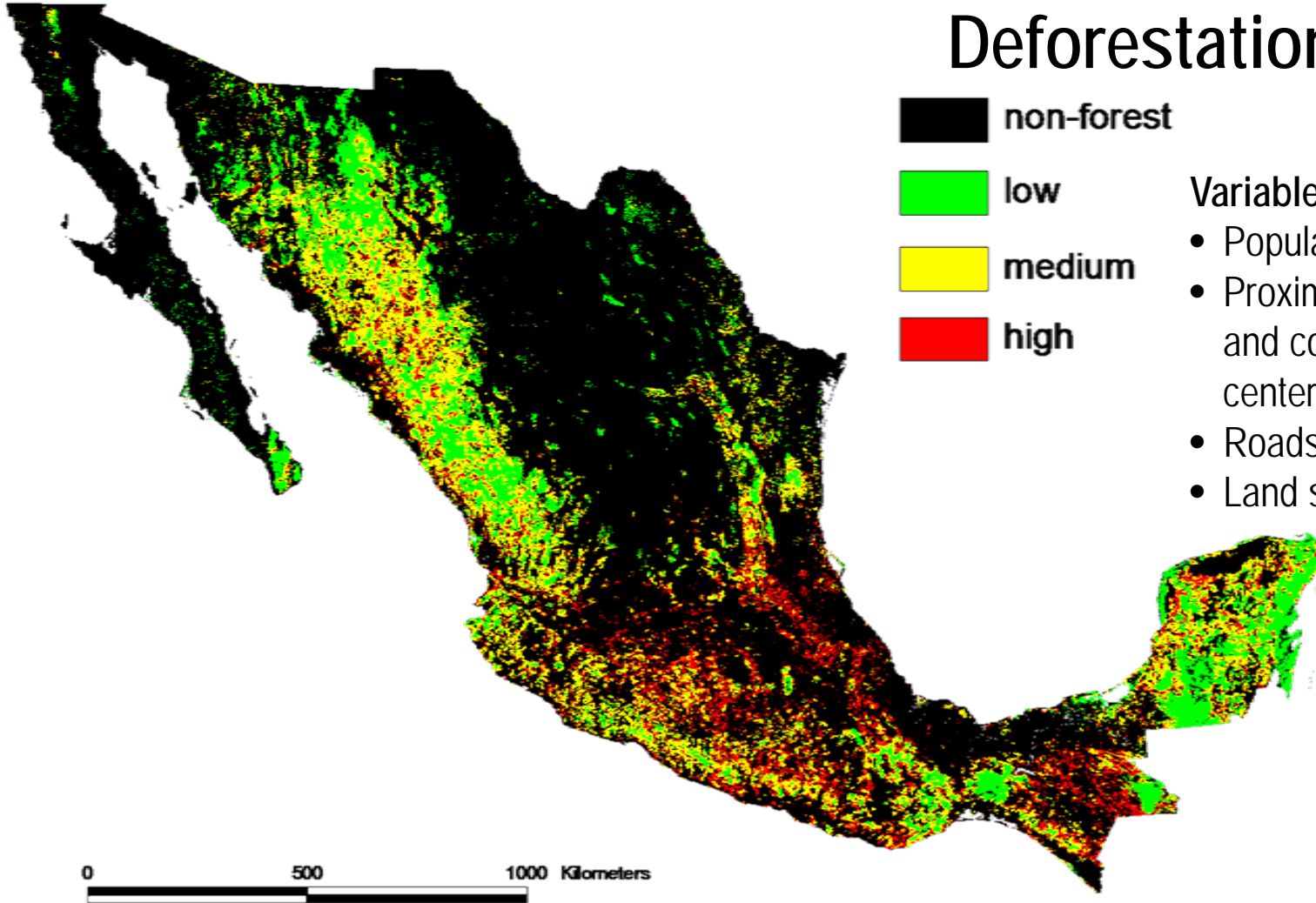
- Non-forest
- Low
- Medium
- High
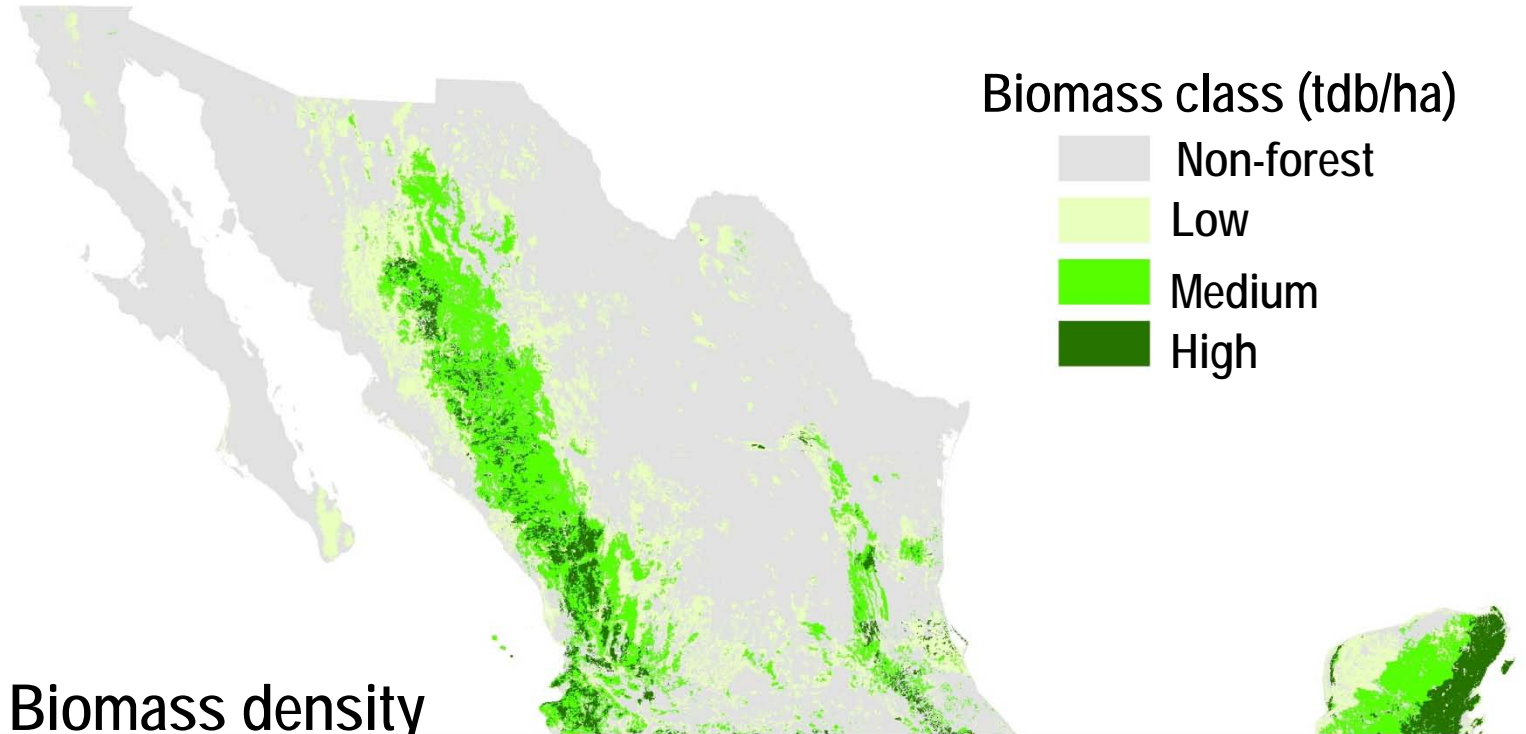
Biomass density

Source: ECOSUR (2009)

Reference scenario

Other variables to include in risk analysis are:

- Marginalization (poverty)
- Price of agriculture commodities (corn and beef)
- Impacts of Policy and Programs (ProÁrbol, PROCAMPO, Natural Protected Areas)
- Land tenure (PROCEDE)
- Governance inside ejidos and communities
- New threats (¿Biofuels?)

Reference scenario

Objectives

- Develop a **spatial explicit reference scenario** of future CO_2 emissions derived from continuing deforestation and forest degradation (DD), based on historical trends of land use and land-use change between 1990 and 2007.

- Identify forests at high risk of both deforestation and/or degradation, due to land-use drivers such as access to and pressure on forest.

- Analyze the impact of recent changes in forest policy on DD and estimate future impacts of continuing the Pro-Arbol program as stated in the National development Plan 1007-2012 and the National Forest Strategy 2025.

- Identify priority areas for possible future actions that reduce emissions of DD according to the potential for emission reductions and social and conservation co-benefits.

Expected Outcome

- **A spatially disaggregated reference DD and emission scenario** based on: 1) historical trend of DD and derived carbon density changes, 2) Likely areas to be deforested and degraded in the future based on driver analysis; 3) expected impact of continuing land-use policy as stated in the National Development Plan, Special Program on Climate Change, and National Forest Strategy 2025.

- The advantage of spatial disaggregation of the national reference scenario is not only the level of overall accuracy that may be achieved. It will also enable the targeting of particular interventions to particular areas, and facilitate monitoring of the outcomes. It may distinguish between areas primarily at risk from deforestation and new areas at risk for degradation, or deepened degradation in areas already degraded.

4. Design Monitoring System

Multi-scale National Monitoring System
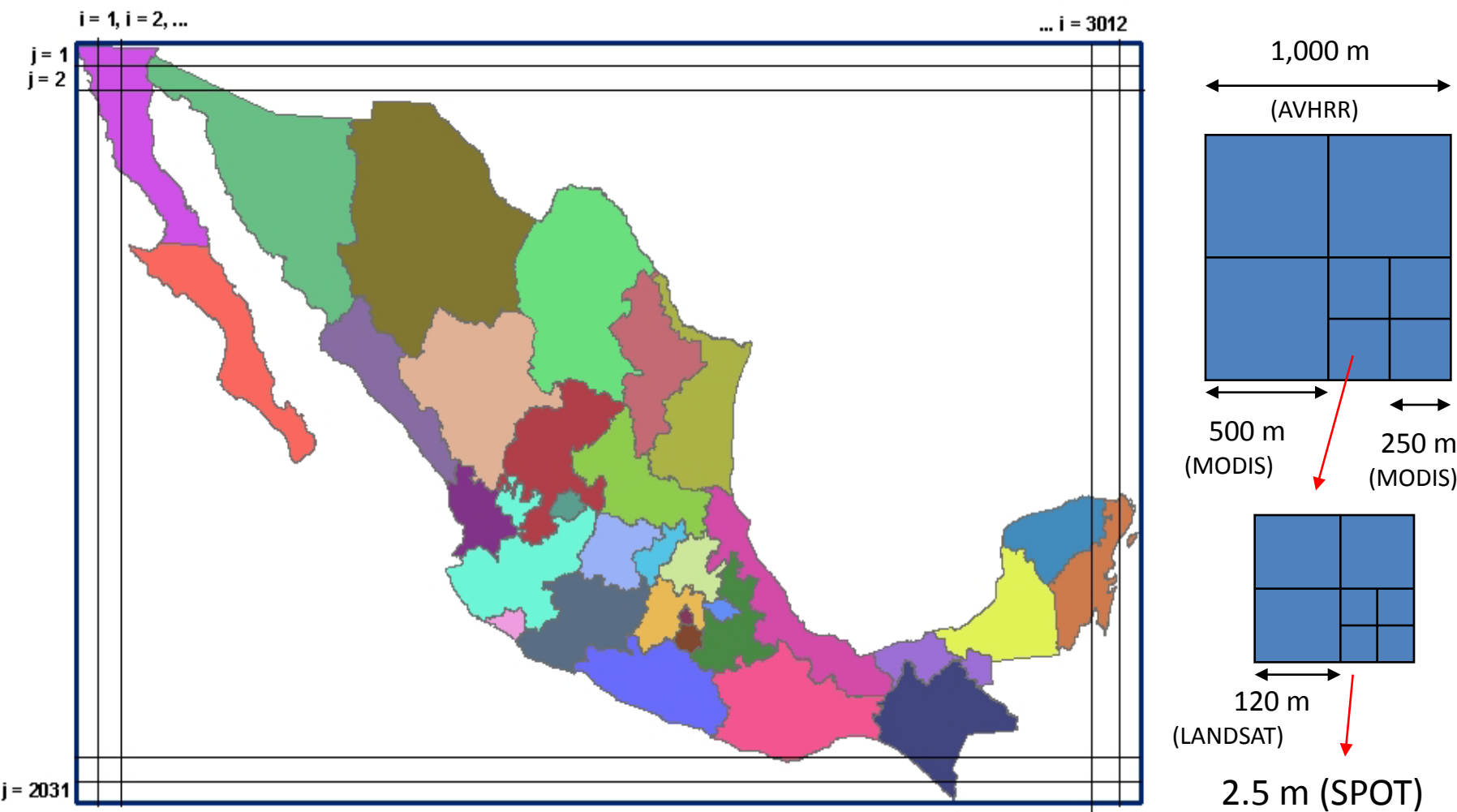
MRV system will be built upon **IPCC framework** (GHG Inventory for National Communications); it will be consistent at various scales considered (national, regional, local)

National Forest Inventory

Ground-truth

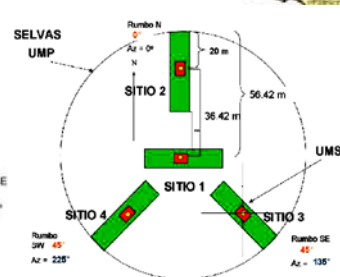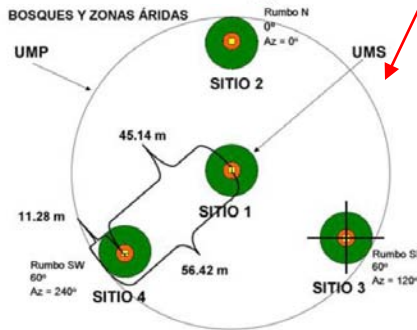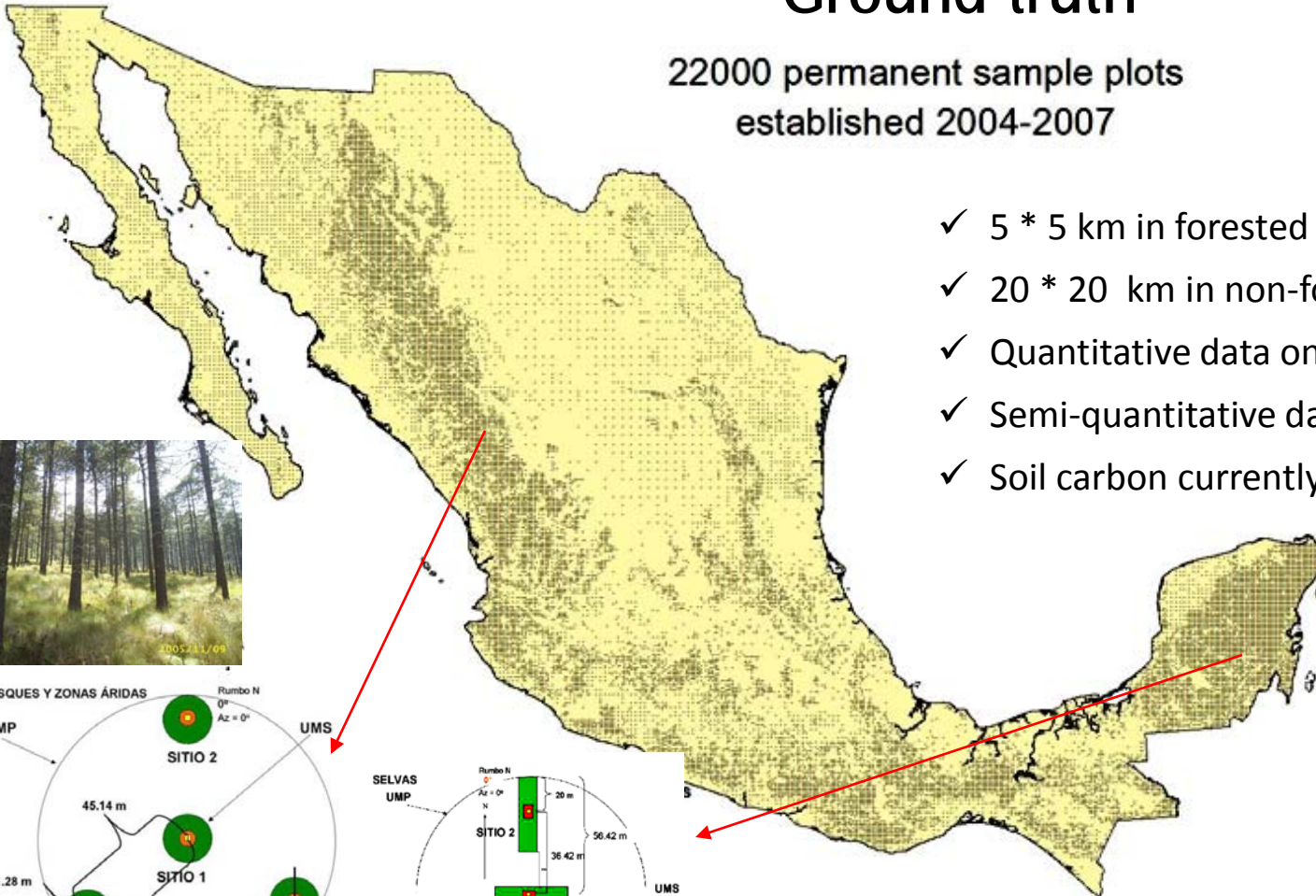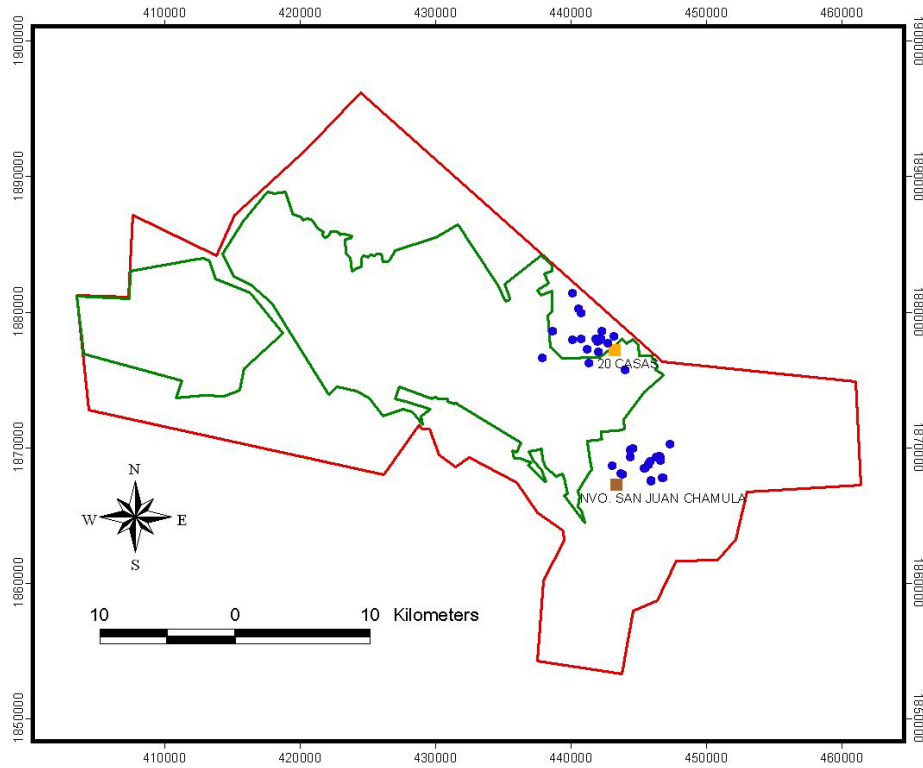22000 permanent sample plots
established 2004-2007

- ✓ 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
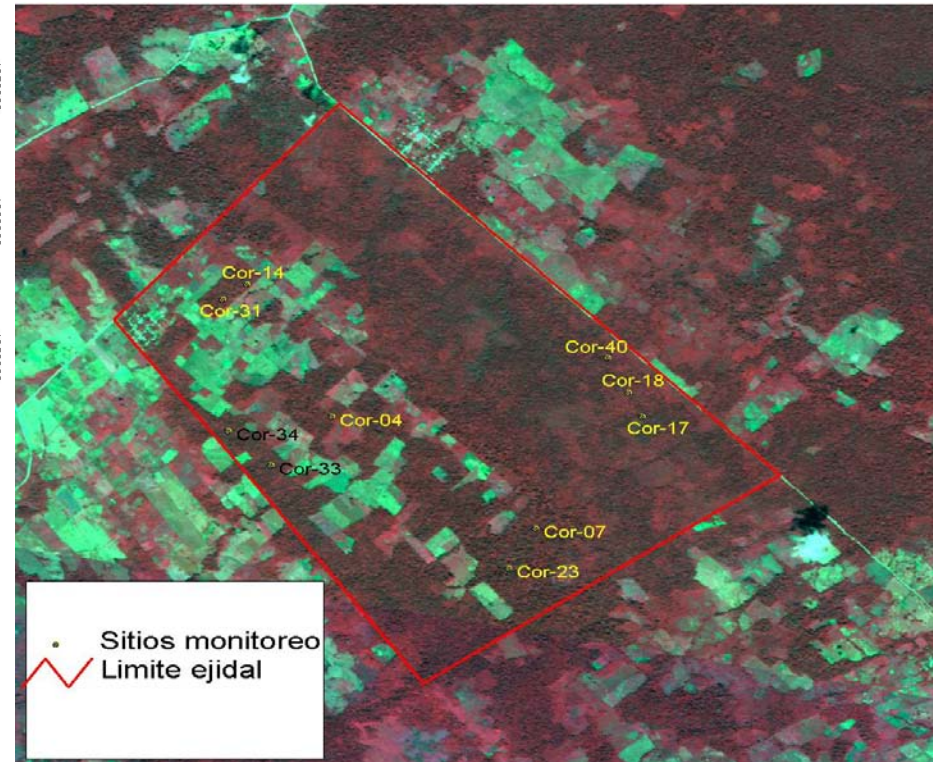
Recent activities

- Mexico is engaged into Group on Earth Observations and Forest Carbon Tracking (GEO-FCT)
  - Pilot sites for data validation and calibration of satellite data
- FAO's Study case for assessing forest degradation using NDVI and National Forest Inventory Data
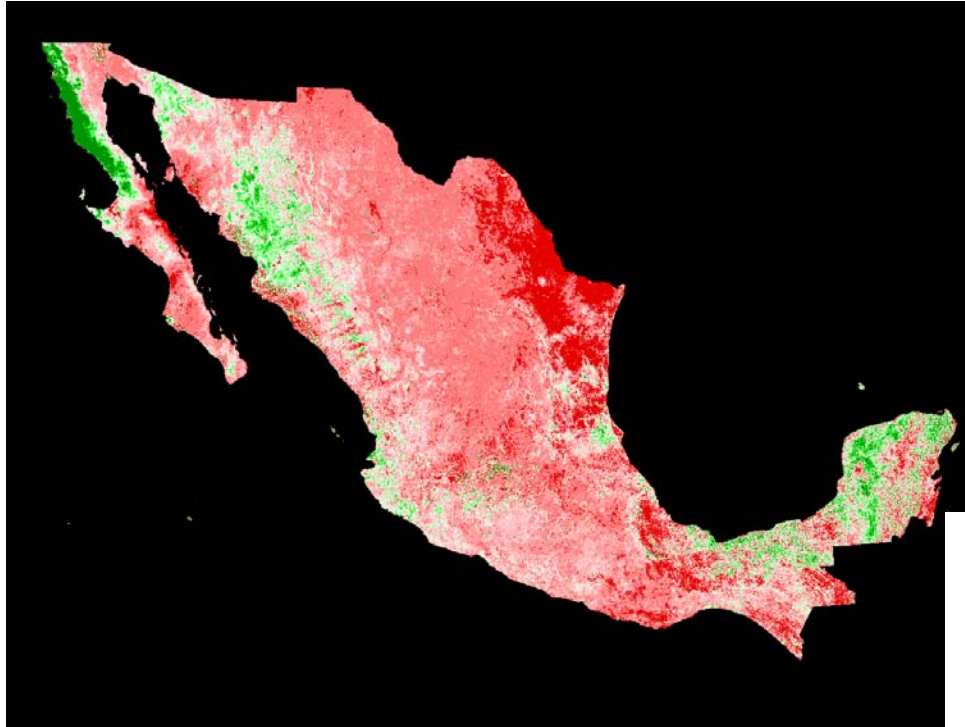
Biomasa Mg/ha por comunidad vegetal

$y = -6.409\ln(x) + 23.877$
$R^2 = 0.9451$
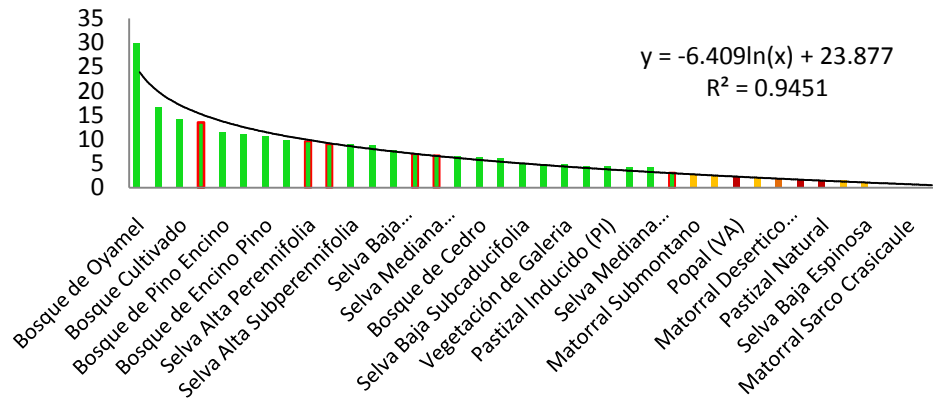
Biomasa Aérea Mg/ha Vs NDVI
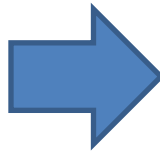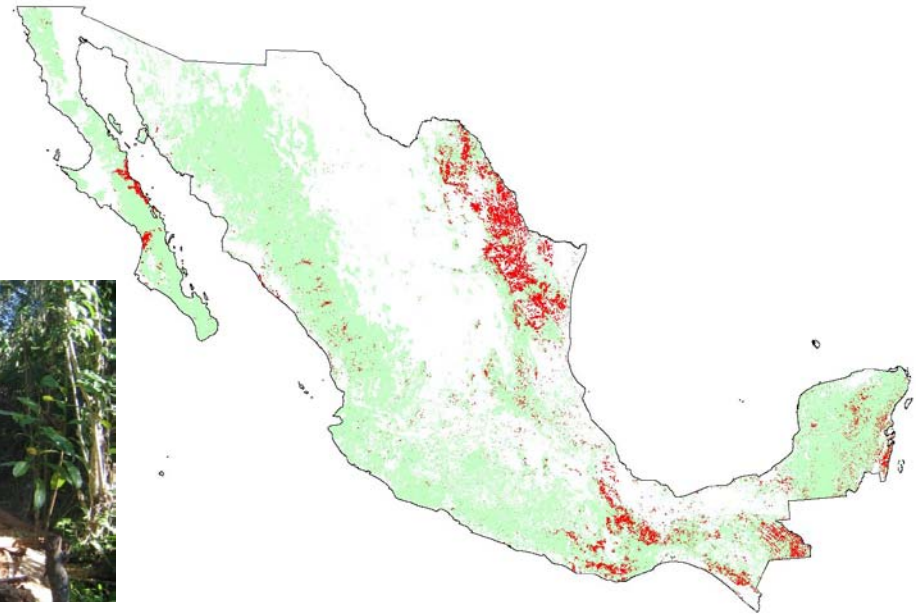
$y = 2E\text{-}15x^{6.9527}$
$R^2 = 0.6882$
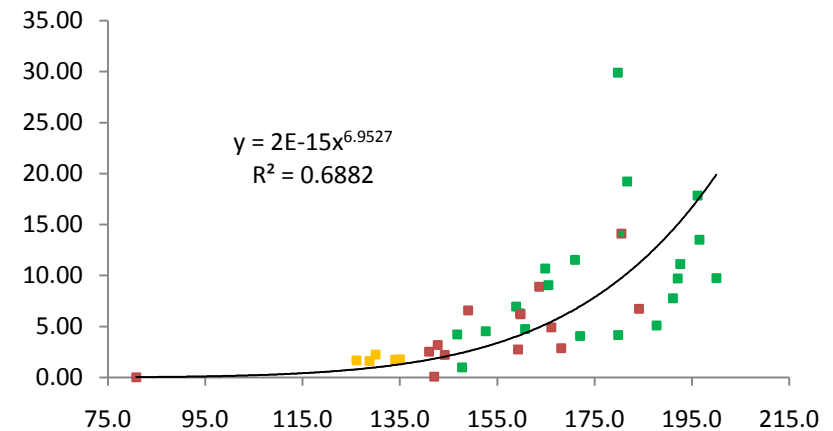
Assessing forest degradation

- ✓ NDVI analysis has demonstrated its effectiveness to asses deforestation
- ✓ Ground-truthing might improve assessment of forest degradation

Ing. Víctor E. Sosa Cedillo
(vsosa@conafor.gob.mx)
Coordinador General de Producción y Productividad
M.C. Leonel Iglesias Gutiérrez, M.Sc.
(liglesias@conafor.gob.mx)
Gerente de Servicios Ambientales del Bosque
Ing. José Armando Alanís de la Rosa
(jalanis@conafor.gob.mx)
Subgerente de Mecanismos de Financiamiento y Demanda
M.Sc. Gmelina Ramírez Ramírez
(*gramirez@conafor.gob.mx*)
Subgerente Cambio Climático