# GENERAL STATUS OF MRV ACTIVITIES FOR REDD IN MEXICO

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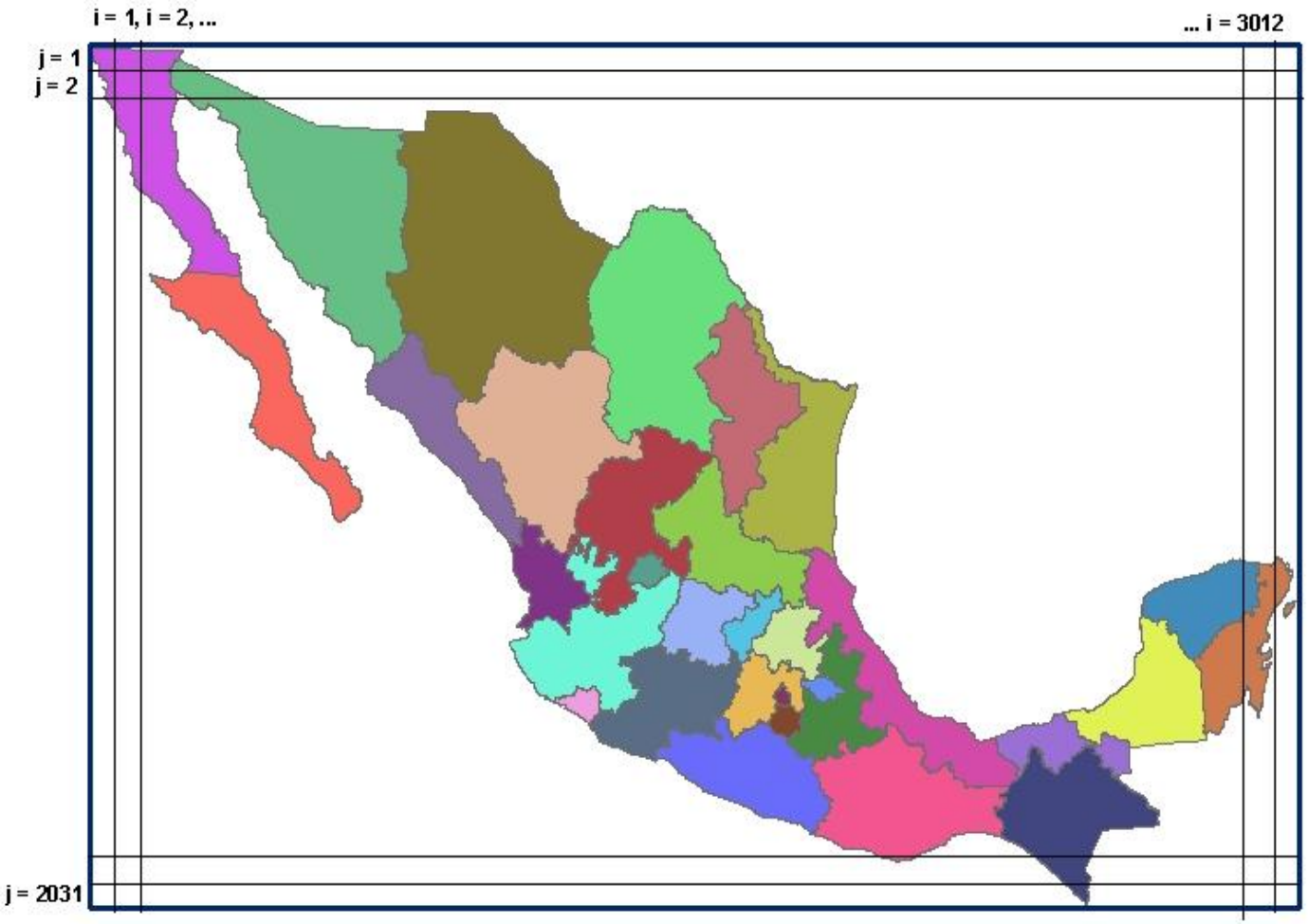
# Introduction

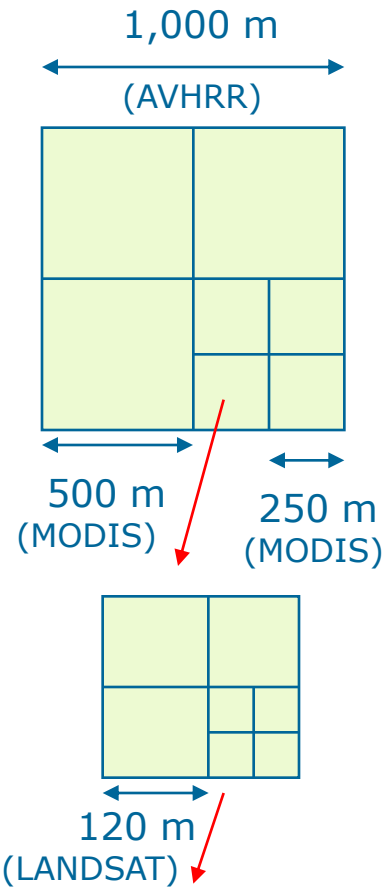
- Mexico land area is almost 2’000,000 $km^2$
- Characterized by a high variety of climates (very dry with <50mm to very wet with >5,000 mm), various forest types (Pine and pine-oak forests, scrublands, dry-wet tropical forests, cloud forests, mangroves) and disturbance regimes  (human, natural)

--> complex landscape mosaics that require a spatially-specific monitoring system that combine fine-scaled RS technology with extensive field measurements.

# NATIONAL INTEGRATED MULTI-SCALE FRAMEWORK

## (REMOTE SENSING AND *IN SITU* SAMPLING NETWORK)




and so till
2.5 m (SPOT)

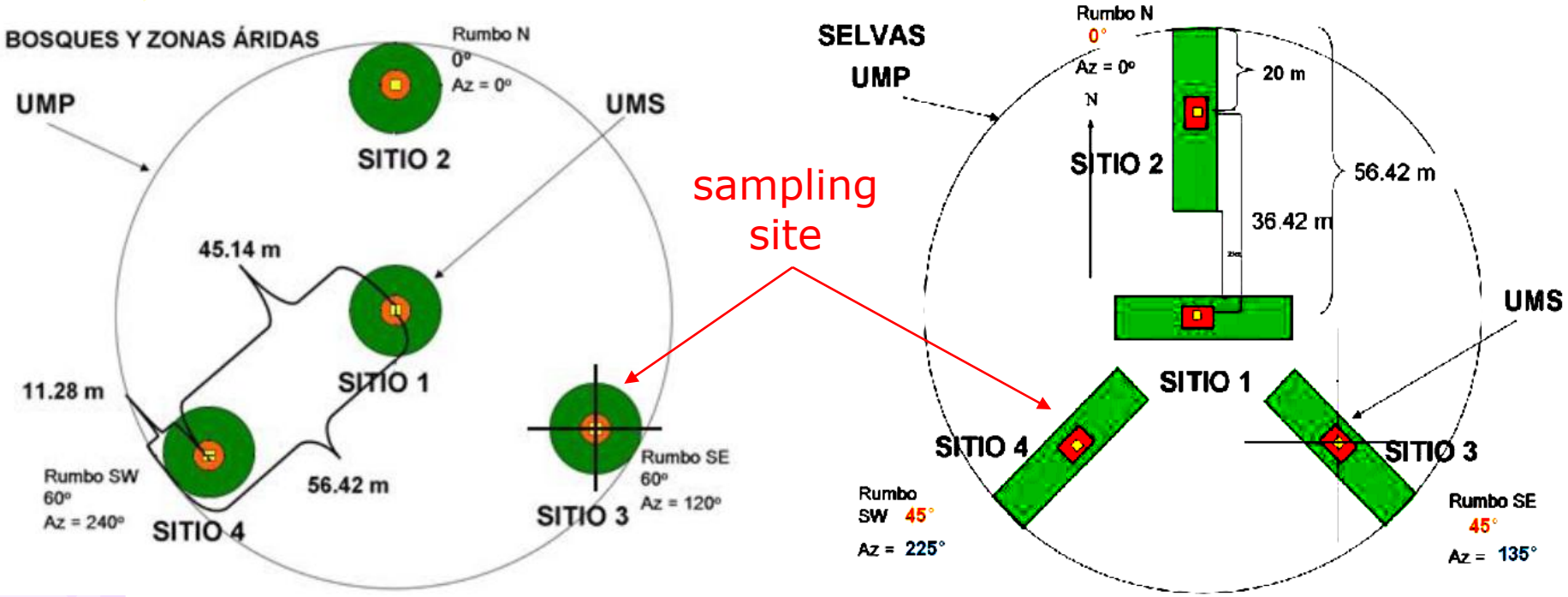
# MONITORING: SAMPLING LEVELS

| Level | Scheme | Institution |
|---|---|---|
| 5 | Multi-scale, multi-time, extensive areas (150,000 has) – 18 sites (planned) | Mexican Carbon Program |
| 4 | Multi-scale, multi-time, semi-extensive areas (225 has – 1.5 x 1.5 km) – 504 sites | SAGARPA-COLPOS (32 institutions) |
| 3 | Multi-scale, multi-time, intensive 1,600 $m^2$ plots (4 sites of 400 $m^2$ each) – 25,000 systematically distributed plots | CONAFOR (COLPOS in soils) |
| 2 | Uni-scale, multi-time, 100 $m^2$ areas – 100,000 sites (First phase) | National Research Consortium (NRC) |
| 1 | Project-level sampling (Scolel Té model) | Project developers |

# LEVEL 3:
# Multi-scale, multi-time, intensive areas (NFI): 2004-2007 (resampling started 2008)

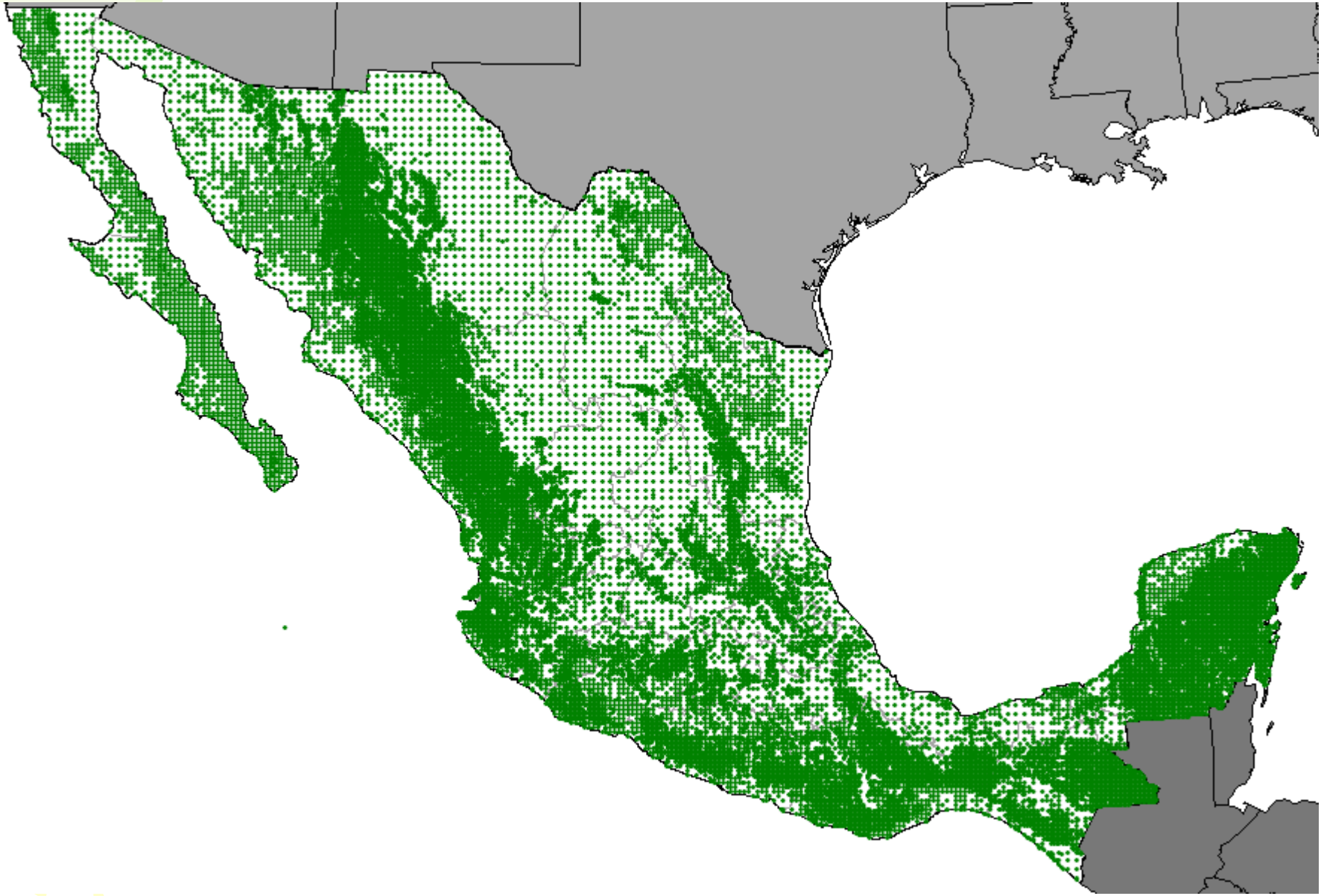
# NFI: 2004-2007
## CONGLOMERATES SAMPLING DESIGN

**Pine-Oak Forests and arid lands  "Tropical" broadleaved Forests**




**Sampling sites = 400 m²**

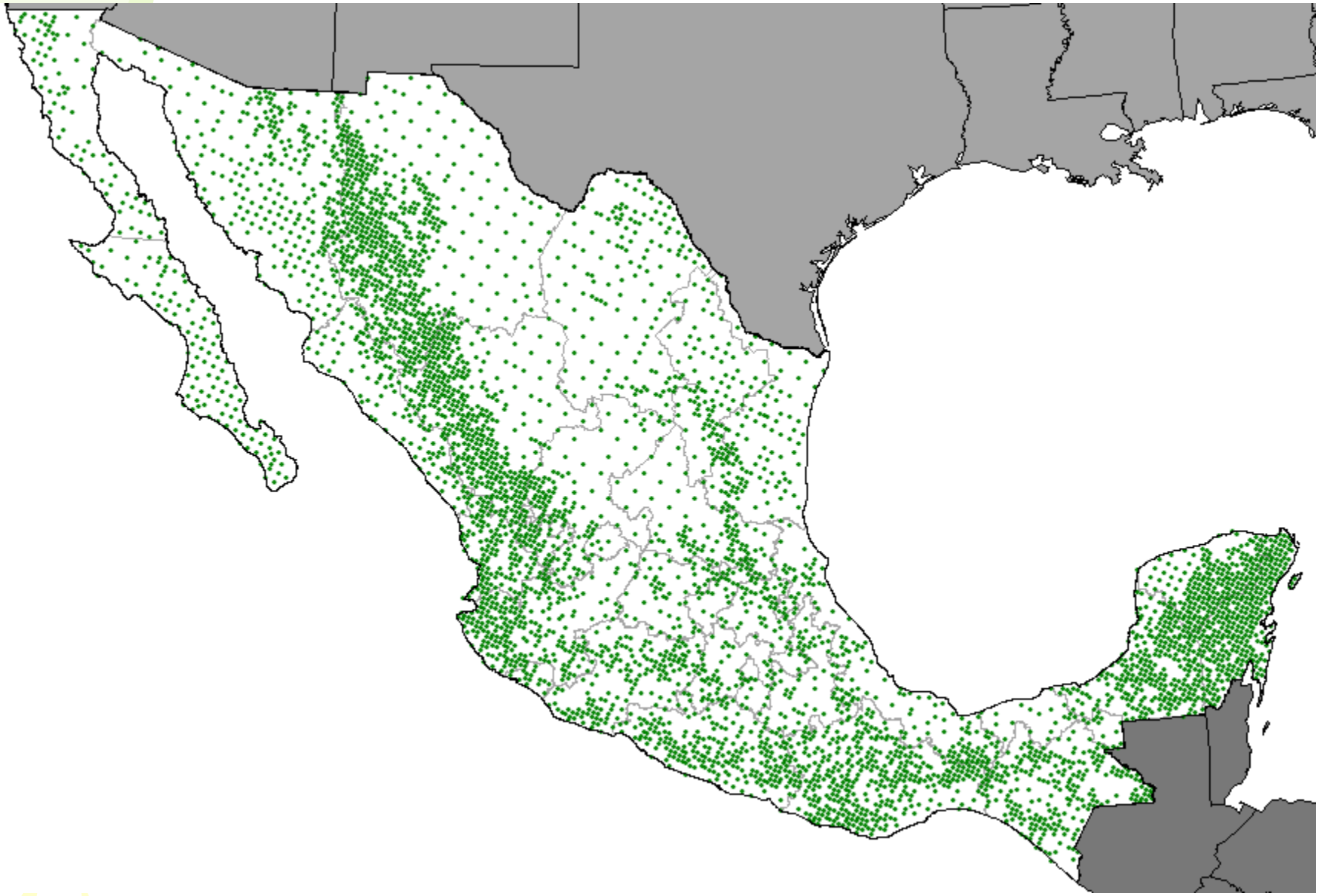
# ABOUT 25,000 SAMPLING CONGLOMERATES



# RESAMPLING (NFI 2004-2007)

- 2008: Initial resampling campaign, same methodology as sampling in 2004-2007
- 2009: Resampling reviewed and adjusted complementary methodology (all C pools)
  - Each tree is marked (not marked initially)
  - Dead organic matter on surface sampled in two transects in one sampling site (same as soil and litter)
  - Soil sampled in two transects in one sampling site: 2 depths (0-30 and 30-60 cm), 9 samples spaced at 2 m, 1 sample for bulk density.
  - Litter (two layers sampled: humified and non-humified) sampled in same points as soils
  - Soil and litter sent to a central laboratory (COLPOS) for analysis (C and others)
- From 2009 to 2012 the resampling will be completed

# 2009 resampling: aprox. 5,000 conglomerates



# Validation/calibration/ verification strategy (remote sensing-in situ)

# GENERAL STRATEGY

- Calibration/validation/verification of remote sensing products (more than 42,000 plots to be used)
- Implementation of a multi-scale sampling strategy for cross-validation of remote sensing products
- Permanent sampling for operational updating
- National consortium approach (government, universities, NGOs, etc.)

# GENERAL STRATEGY (C Dynamics)

- Using the sampling and resampling sites (biomass converted) of NFI 1992-1994 (sampling) and 2004-2009 (sampling-resampling)
- Resampling of soil profile sites (65,000) to add vegetation sampling and to have 2 points in time for C in soil
- Resampling of vegetation sites (1992-1994: NFI) for soil C and to have 2 points in time in C for the vegetation
- Intensive sampling in research sites (C dynamics) – decomposition /assimilation / transfer rates among pools

# ACTUAL STATUS

- Low resolution remote sensing system (1000, 500 and 250 m): OPERATIONAL
- High resolution remote sensing semi-automatic Class. system (120, 60, 30, 20, 10, 5 and 2.5 m): LANDSAT and SPOT to be operational in 2010
- Model calibration (remote sensing and biophysical) in progress (joint research with Canada-CFS)

# THANKS

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