National Monitoring System for the Effective Conservation and Sustainable Management of Forest Resources in Thailand

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INTERNATIONAL TROPICAL TIMBER ORGANIZATION (ITTO)

Key Statistics: The Kingdom of Thailand

- Total land area (ex inland waterbodies): 51 mil ha
- Total forested area: 18.9 mil ha, 37% of total land area
    - Production forest: 14% of total forest area
    - Protected forest (soil & water): 7% of total forest area
    - Protected forest (biodiversity con): 47% of total forest area
- Carbon stocks
    - In above- and belowground living biomass: 881 million ton
    - In litter: data not available, In soil: data not available
- Rates of deforestation (nat forest): 91,000 ha/year (0.57%/year)
- R-PIN approved by the FCPF in March 2009

Background ...

National Forest Inventory History

1st: 1969-76, 2nd: 1987-91, 3rd:1993-96, 4th: 2004-06

ITTO Projects relating to Monitoring in Thailand:

Phase I: Jan 2000-Jan 2003 (PD 2/99)

Preparatory Studies to Install a **Monitoring System** for the Sustainable Management of Thailand's Forest Resources

Phase II: June 2004 – June 2007 (PD 195/02)

To Establish a **National Monitoring Information System** for the Effective Conservation and Sustainable Management of Thailand's Forest Resources
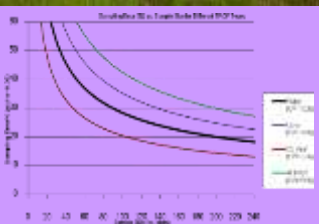
Phase III: Dec 2009 – June 2013 (PD 376/05)

To Promote Monitoring Information System to Support the Sustainable Development of **Tree Resources Outside Forest** in Thailand

Latest National Forest Inventory Design

Remote Sensing

- Year: 2000
- Satellite : LANDSAT-5 TM

Field Inventory

- Sample intensity: 20X20 km

  - Japan, India, Korea; 4km grid
  - China, Myanmar; 3 km grid
  - Indonesia; 20 km grid and 10X10 km

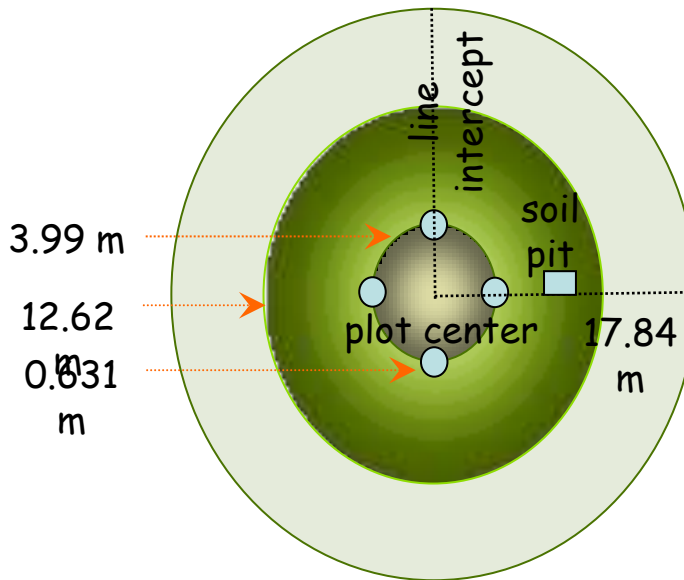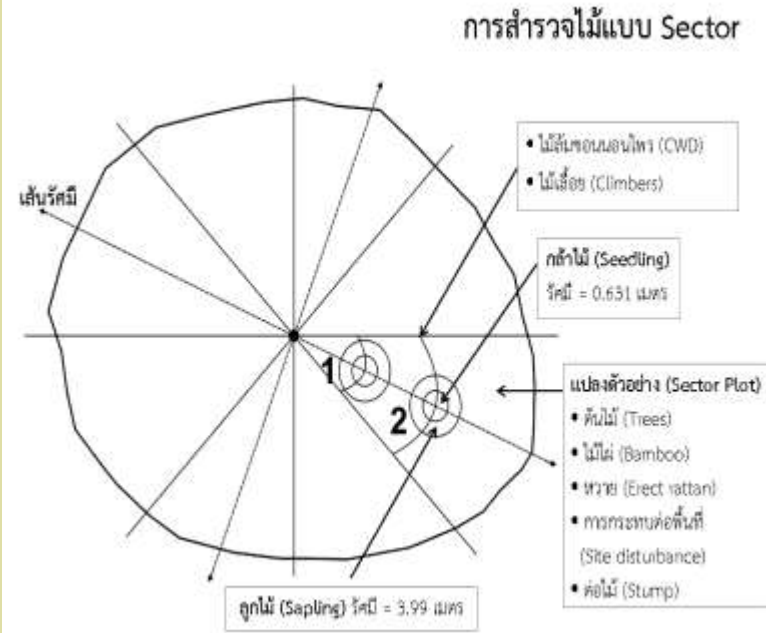- Interval of inventory: 5 year
- Number of sample: 5,645

Sampling Methods

Fixed-area plot

Sector sampling

**Forested areas (community and private forests)**

Non-forested areas (scattered tree and non-tree)

Data collected: Sector sampling

Data Gathered	Sampling Method (See Figure 1)			
	Plot Type	Number	Radius (m)	Total Area (ha)
Seedling density	Circular	4	0.631	0.0004
Understory vegetation & sapling density	Circular	1	3.99	0.0050
Bamboo and erect rattan length & tree stump volume; site description	Circular	1	12.62	0.0500
Tree attributes; human & natural site disturbance; wildlife habitat use	Circular	1	17.84	0.1000
Coarse woody debris (CWD), rattan & climbers volume and length	17.84 m line-intersect	2		

Data collected: Fixed - grid

| Data Gathered	Sampling Method (See Figure 1)			
	Plot Type	**Number**	**Radius (m)**	**Total Area (ha)**
Seedling	Circular	2	0.631	0.0005
Understory vegetation & sapling; site distubacne	Circular	2	3.99	0.0050
Bamboo, erect rattan, tree, palm, stump and wildlife	Sector plot	4	50 (100)	Varies with area
CWD and climbers	Line-transect	2		
Soil	Soil dig at center plot	1		
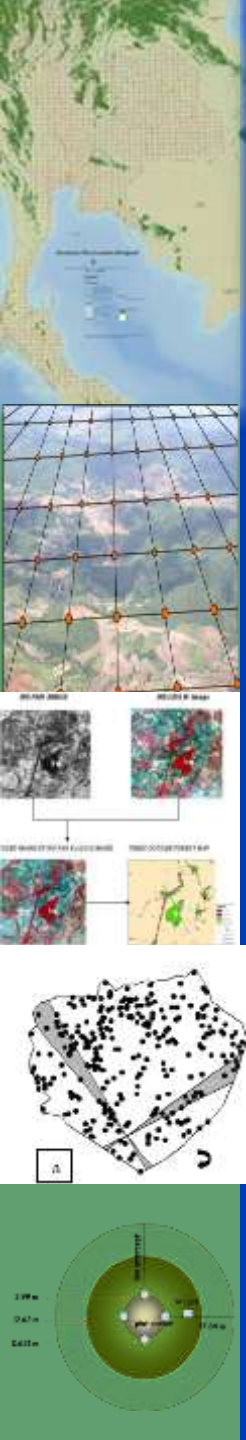
Survey form

Survey set

A map exploring
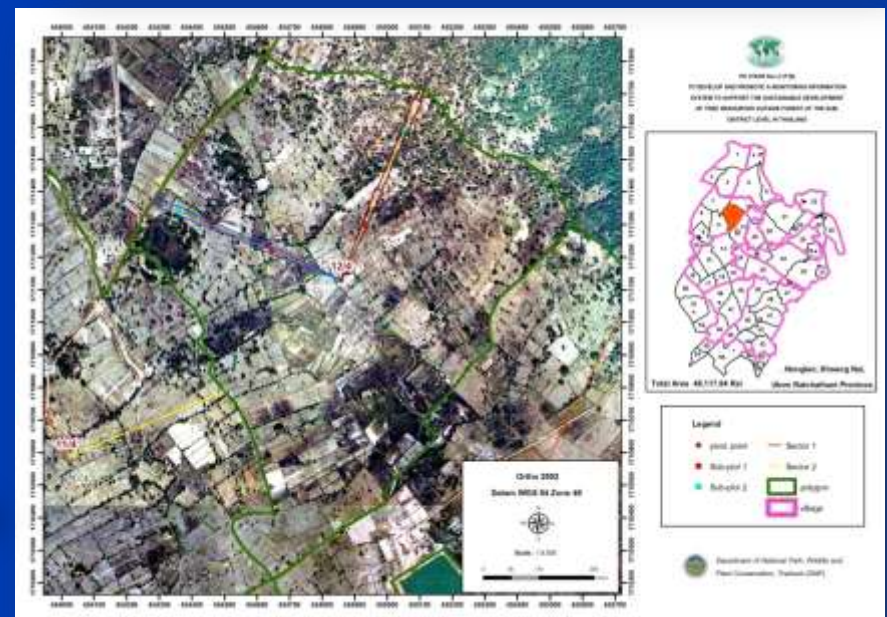
Sector Sampling

Fixed Grid

The total of Sample Plots

Forest Type	No. of Plots	Species	No. of Tree	Live Tree	Dead Tree	Volume (cu.m)	Area of Sample Plots	
							Rai	Hectare
ป่าดิบชื้น (Tropical Evergreen Forest)	322	816	22,879	22,250	629	6,103.36	201.25	32.20
ป่าดิบแล้ง (Dry Evergreen Forest)	942	1,202	52,823	51,569	1,254	10,955.36	588.75	94.20
ป่าดิบเขา (Hill Evergreen Forest)	203	481	12,335	11,799	536	2,440.99	126.88	20.30
ป่าสนเขา (Pine Forest)	24	86	1,377	1,332	45	307.47	15.00	2.40
ป่าพรุหรือป่าบึงน้ำจืด (Fresh Water Swamp Forest)	15	7	866	807	59	37.30	9.38	1.50
สวนป่าชายเลน (Mangrove Forest Plantation)	3	4	301	272	29	6.20	1.88	0.30
ป่าบุ่ง ป่าทาม (Swamp Forest)	7	30	195	194	1	28.93	4.38	0.70
ป่าชายหาด (Beach Forest)	1	5	63	63	0	4.32	0.63	0.10
ป่าเบญจพรรณ (Mixed Deciduous Forest)	2,626	1,267	92,781	90,028	2,753	19,255.60	1,641.25	262.60
ป่าเต็งรัง (Dry Dipterocarp Forest)	1,184	799	88,776	85,992	2,784	10,238.68	740.00	118.40
สวนป่า (Forest Plantation)	223	286	9,905	9,774	131	925.55	139.38	22.30
ป่าเสื่อมโทรม (Disturbed Forest)	149	318	3,180	3,101	79	324.40	93.13	14.90
Total	5,699	2,151	285,481	277,181	8,300	50,628.15	3,561.88	569.90

Trends in Forest Management in Thailand

- Deforestation and forest degradation continue due to rising population, agricultural expansion, and the dependence of indigenous people on forest resources.

- In order for REDD+ to be effective, providing positive incentives for forest protection will be essential – Tangible rewarding to indigenous people for their forest protection.

- Need to integrate changing policy development from timber production to social-environmental conservation

- Thai NFMS needed to present information for policy planning and reporting requirements

What's next?

Scaling-up the Thai NFMS for SFM

- Fresh and reliable data of forest resources and social aspects play an important role in planning and implementation

- Information on social safeguards: Indigenous people, multi-stakeholder process, beneficiaries

- Institutional arrangement for reporting the result of measurement and monitoring

- Facilitate the achievement of sustainable forest management while contributing to socio-economic development from the forest sector

More info on National Forest Monitoring System to support REDD+ in Thailand

www.dnp.go.th/inventory

More info on ITTO

www.itto.int

Thank you