

UNFCCC COP 17 Side Event, ITTO JICA TFD IUCN

Sustainable Forest Management and Carbon Stocks

Nophea Sasaki
University of Hyogo & ITTO Delegate
Kobe, Japan
nopsasaki@gmail.com

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Sustainable Forest Management (SFM)





- **Forest Management** is providing a forest the **proper care** so that it **remains healthy and vigorous** and provides various products ...
- **SFM** (ITTO 1992)
 - **Products:** ... achieve a continuous flow of desired forest products and services
 - **Safeguards:** No reduction in forest values and future productivity

Timber and SFM

- **Timber production: ≥ 140 million m^3** (2006 roundwood in ITTO members)
- Timber production was obtained through two logging systems: ***Conventional Logging (CVL)*** and ***Reduced Impact Logging (RIL)***
- CVL or RIL affect SFM and timber production: logging damages, logging wastes and wood wastes
- **Appropriate logging system for SFM under REDD+ scheme is needed**



Reducing logging damages and wastes

Variables	Locations	CVL	RIL	Sources
1. Logging damages to residual stands as percentage of commercial stem density	Sarawak, Malaysia	54.0%	28.0%	FAO (2001) (DBH ≥ 10 cm)
	Sabah, Malaysia	60.0%	30.0%	Tay et al. (2002) (DBH ≥ 1 cm)
	East Kalimantan, Indonesia	48.4%	30.5%	Bertault & Sist (1997) (DBH ≥ 10 cm)
	East Kalimantan	24.7%	14.5%	Sist et al. (2003) (DBH > 20 cm)
2. Logging wastes as percentage of harvested wood	Sarawak, Malaysia	20.0% =>	0.0%	FAO (2001)
	East Kalimantan, Indonesia	46.2% =>	26.2%	Sist & Saridan (1999)
	Easter Amazon	24.0% =>	8.0%	Holmes et al. (2002)

Adopted from Sasaki & Putz (2009)



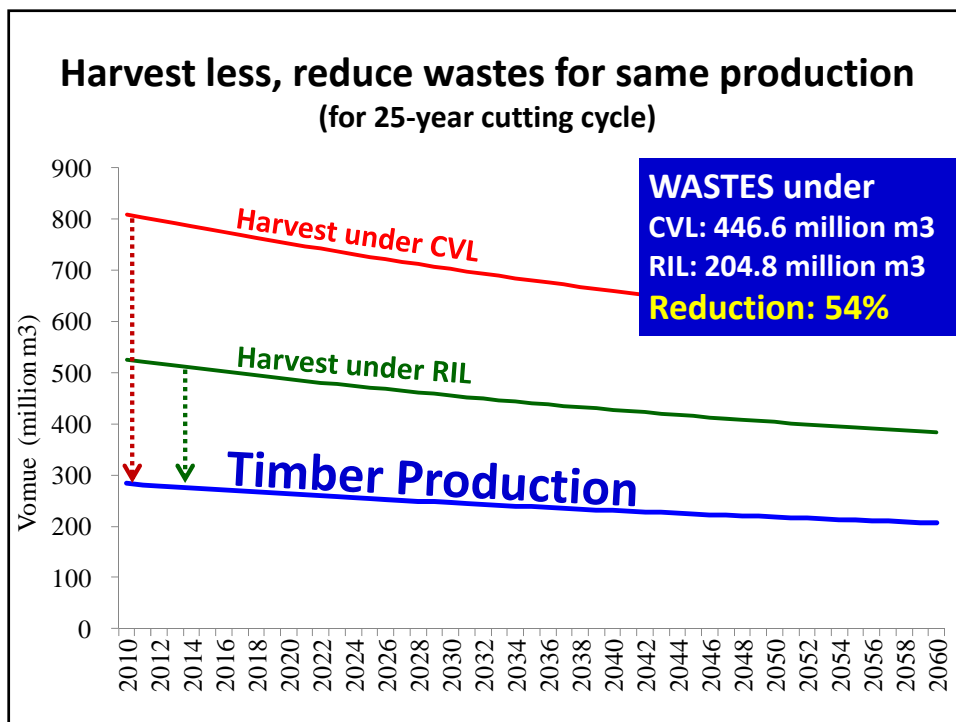
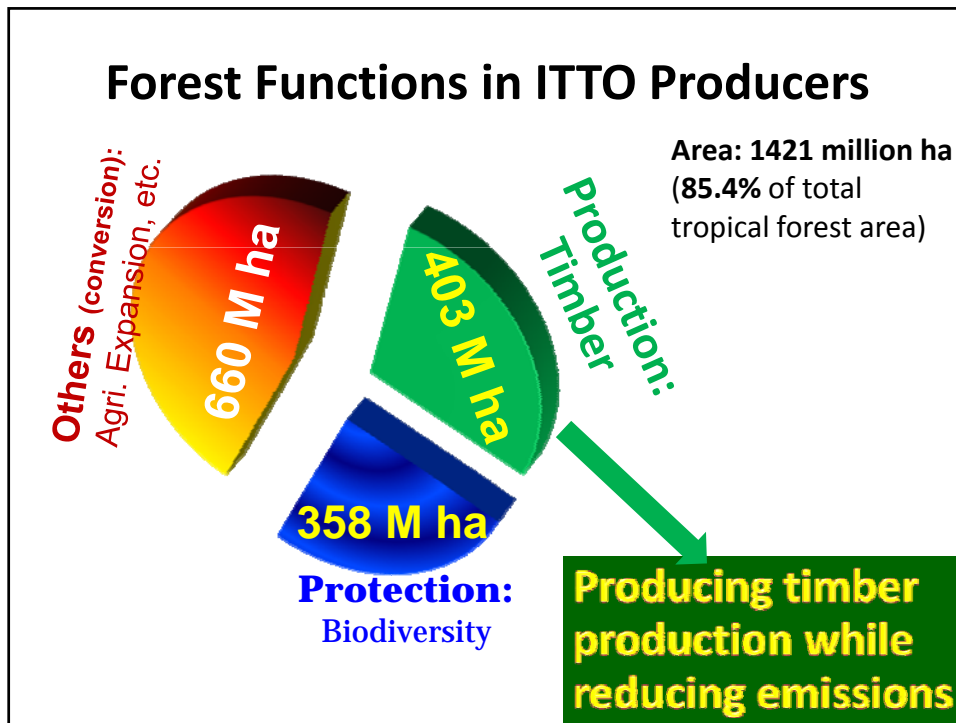
Improve Wood Processing Efficiency

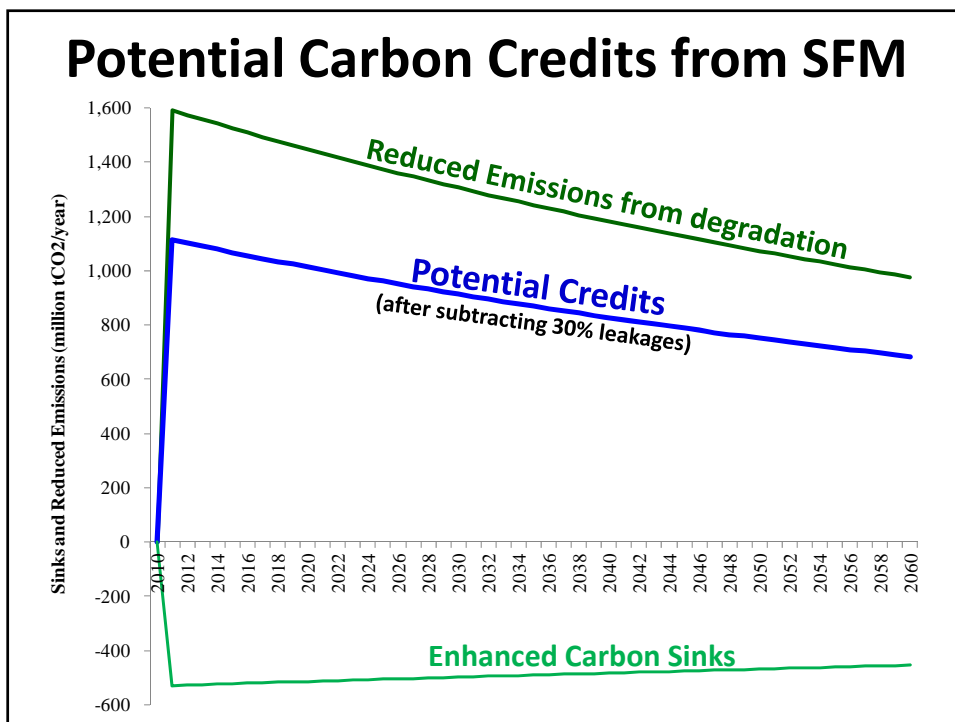
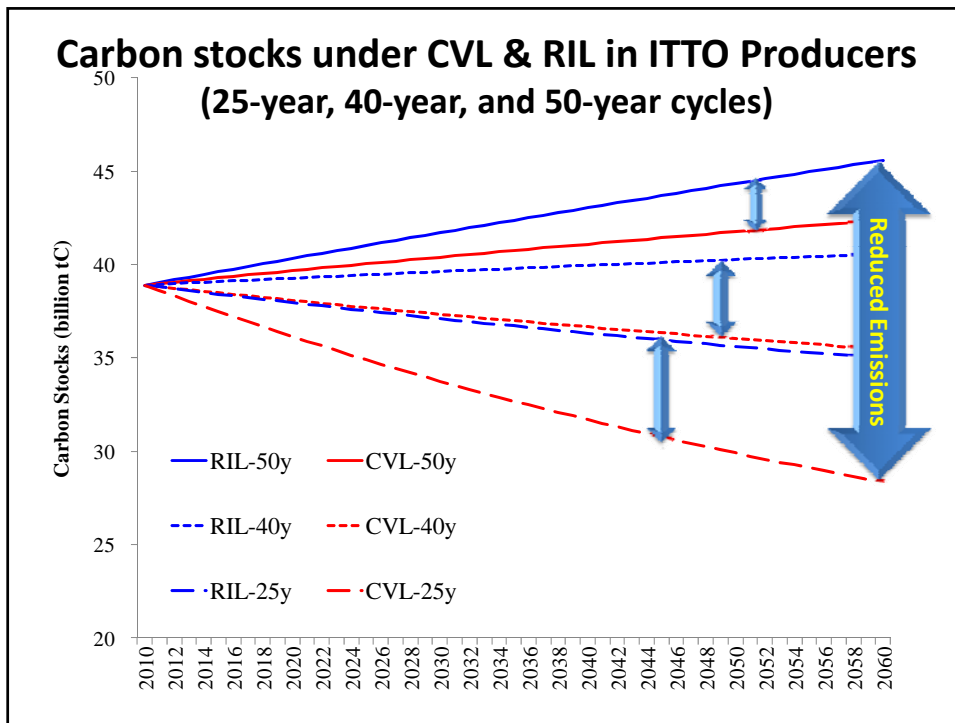
- **35-53%** in Ghana (Loehnertz et al. 1994)
- **About 55%** in Brazil (Loehnertz et al. 1994)
- **Less than 50%** in Indonesia (Krutilla 1988)
- About **54.5%** in Malaysia (Ghazali 1990)
- About **50%** in Cambodia (Kim et al. 2006)



Increase to 60%?







Making it work ...

- Securing timber production must be equally treated under SFM of the REDD+
- **RIL Costs:** low per cutting cycle basis
- **Actions to reducing emissions:** reduce logging damages and wastes through planning, training, increase wood recovery (through technology transfer)
- **RIL Monitoring:** Advanced remote sensing technology become increasingly available with affordable, even free (Asner et al. 2006, 2009; Curran and Trigg 2006, GOF-GOLD 2009)
- **Safeguarding:** Zoning the sensitive areas prohibited from logging

