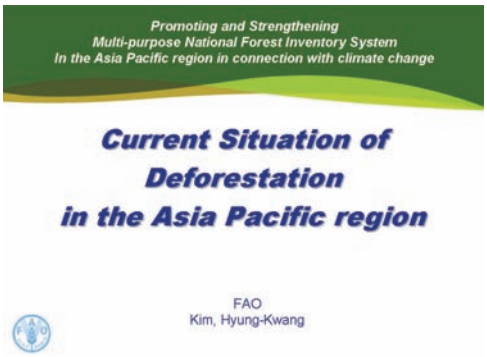
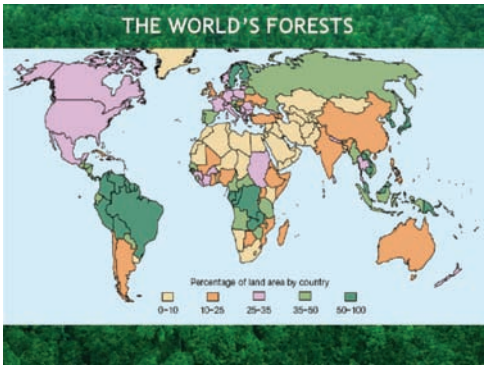
5.8 Presentation Materials of Session 3

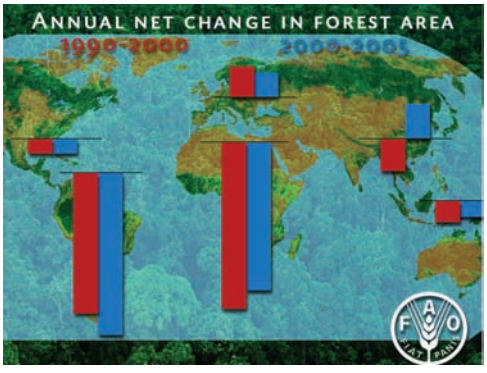
(Appendix 5.8.1)

Current situation of Deforestation in the Asia Pacific region

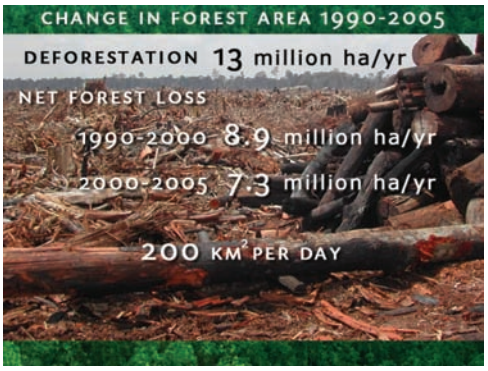
Mr. Hyungkwang Kim
FAO







Continent	Total Forest Area (2005)		Annual change 1990-2000		2000-2005	
	(1,000ha)	(% of land area)	(1,000ha/year)	(%)	(1,000ha/year)	(%)
World Average	*3,952,025*	*30.3*	*-8,868*	*-0.22*	*-7,317*	*-0.18*
Africa	635,412	21.4	-4,375	-0.64	-4,040	-0.62
South America	831,540	47.7	-3,902	-0.44	-4,251	-0.50
Europe	1,001,394	44.3	877	0.09	661	0.07
North & Central America	705,849	32.9	-328	-0.05	-333	-0.05
Asia	571,577	18.5	-792	-0.14	1,003	0.18
- East Asia	244,862	21.3	1,751	0.80	3,940	1.60
- South & southeast Asia	283,127	33.4	-2,578	-0.80	-2,851	-1.00
Oceania	206,254	24.3	-448	-0.21	-356	-0.17



Asia-Pacific's Forest

- The land area of Asia & the Pacific
  → 19% of the world
- Forests & wooded land
  → 1/3 of Asia & the Pacific
- Forest area (2005) : 734 million ha
  → 19% of global forest area

- Net increase in forest area (2000~2005)
  → 633,000ha (annually)

※ *Due to an increase of above 4million ha per year in China*

- However, most other countries : net loss
- Especially, Southeast Asia : largest decline
  → 2.8million ha/year
- The greatest forest loss : Indonesia
  → almost 1.9million ha/year
- Followed by Myanmar, Cambodia, the Philippines, Malaysia, North Korea etc.
- During the first 5 years of the 21C :
  several countries lost more than 1.5% /year
  → the highest rate in the world

Thank you!

(Appendix 5.8.2)

Review of NFI in Asia and Pacific region in context of UNFCCC

Mr. Kailash Govil
FAO Retiree

Emerging Dimensions of Demand and Supply of Information from National Forest Inventories in context of Climate Change and UNFCCC

Dr. Kailash Govil
Senior Advisor
MAR on Adaptation and Mitigation of Climate Change

Overview

Emerging Scenario

Key Messages

Copenhagen 2009

Trade Requirements

Where are we now

Emerging Scenario

- Recent years have seen exponential demand on forest information in extent and quality at national and sub-national levels
- Specially consistency, robustness, completeness, transparency, national sovereignty, comparability, accuracy, precision and verifiable

Key Message

- Demands of Information – Most of the demand from processes, conventions and others is generally broad and has insufficient specifications - Need to harmonize / standardize information demand – FAO with more than 40 years of experience.
- Supply of Information - None of the countries, specifically in AP region has complete and updated information – Immediate need to build capacities and dynamic integrated systems of forest information

Copenhagen 2009 Accord Key Elements

- a long-term goal of limiting climate change to no more than 2° C
- systems of "pledge and review" for mitigation for both developed and developing countries
- measures to address NAMA, adaptation and technology transfer,
- significant new financial resources

As of February 10, 2010, national pledges to limit GHGs from 67 countries (more than 80% of global greenhouse gas emissions)

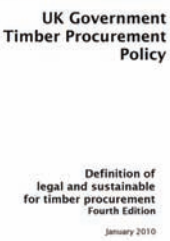
Copenhagen Accord (Contd.)

- Links **Funds** to results and actions like
  - **meaningful** actions
  - **transparency** on implementation,
  - **governance** of actons
  - **Copenhagen Green Climate Fund** (GCF)
  - **Consistent, Robust, Accurate, Complete, Comparable Information**
  - **QA/QC**
  - **Verification compliant systems**
  - **National and International - MRV**

MRV at Copenhagen

- Concerns about level of MRV
- Differentiation between developed and developing country MRV.
- "rigorous, robust and transparent" MRV of Annex I COP" (para. 4).
- Financially supported mitigation - NAMAs (developing countries) subject to international MRV
- Autonomous mitigation actions subject to national verification but
  - subject to "international consultations and analysis" under international guidelines that ensure that national sovereignty is respected (para. 5).
  - reported in national communications every two years

New Timber Procurement Standards Example: UK

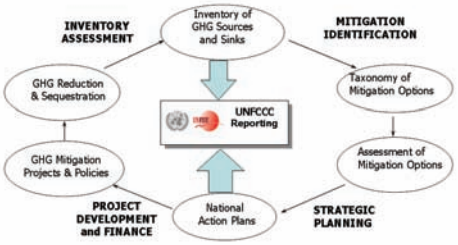


Social Criteria - Section 2.9 – Jan 2010

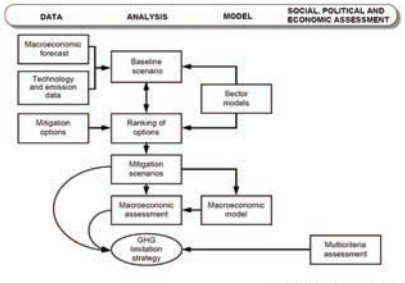
2.9 Management of the forest must have full regard for the interests of indigenous peoples, local communities and forest workers. In order to achieve this, the definition of sustainable must include requirements for:

- Identification, documentation and respect of legal, customary and traditional tenure and use rights related to the forest;
- Mechanisms for resolving grievances and disputes including those relating to tenure and use rights, to forest management practices and to work conditions;
- Safeguarding the basic labour rights and health and safety of forest workers.

UNFCCC, GHG Inventories, and GHG Mitigation Assessment Process



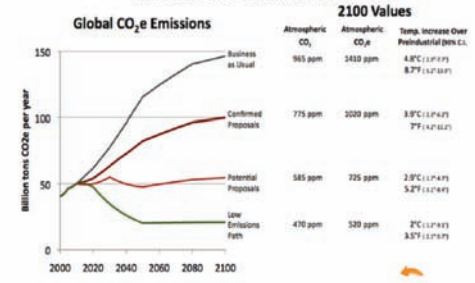
Structure of a Mitigation Assessment



NFI in Validation and Verification Processes of UNFCCC Example: CDM

Where are We (Feb 2010)

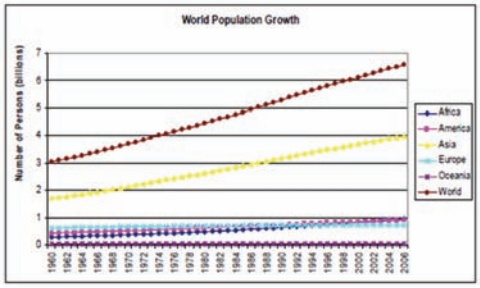
In terms of commitments



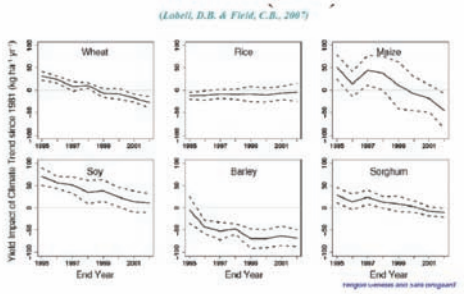
In terms of Forest Information including Annex 1

Data source for biomass carbon	GPG Tier	Nr. of countries
no data	-	77
IPCC Good Practice	1	87
IPCC-GPG, other sources	2	41
FAO publications	2	5
Expert estimate	2	5
country specific data	3	13

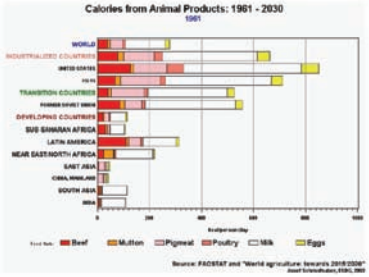
Some Drivers - Outside Forest sector Population Growth



Climate induced trends in Food Productivity



Increase in livestock for food

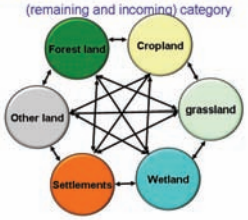


Where is the land

Land use	Current Cover	Potential for Crops
Crops	12	Nil
Barren and Water	24	Nil
Built Up	2	Nil
Forest	28	Deforestation
Grass and Shrub land	34	Little is Cultivable
Total	100	

Six Land Use Categories

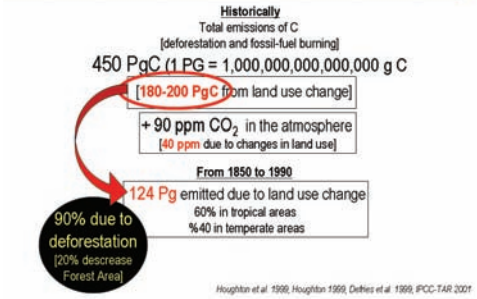
Emissions/removals to be reported under the final land use (remaining and incoming) category



Importance of LULUCF (Annex 1)

		1990	2000	2005
AUSTRALIA	Excluding LULUCF	416,714	494,855	524,638
	Including LULUCF	453,794	404,392	596,239
CANADA	Excluding LULUCF	591,793	717,101	730,967
	Including LULUCF	540,227	636,781	772,380
EU	Excluding LULUCF	5,556,323	5,041,650	5,098,160
	Including LULUCF	5,222,374	4,659,081	4,659,180
JAPAN	Excluding LULUCF	1,269,657	1,345,997	1,357,844
	Including LULUCF	1,195,370	1,265,360	1,272,256
RUSSIA	Excluding LULUCF	3,319,327	2,030,431	2,117,821
	Including LULUCF	3,359,567	2,368,009	2,005,842
US	Excluding LULUCF	6,084,490	6,975,180	7,082,213
	Including LULUCF	5,257,278	6,290,721	5,985,872
BELARUS	Excluding LULUCF	129,129	70,993	77,435
	Including LULUCF	107,101	43,747	52,346
NORWAY	Excluding LULUCF	49,695	53,358	53,701
	Including LULUCF	37,406	36,280	25,781
UKRAINE	Excluding LULUCF	926,033	389,714	417,529
	Including LULUCF	852,887	338,093	382,655
NEW ZEALAND	Excluding LULUCF	61,853	70,598	77,175
	Including LULUCF	43,714	50,626	51,901

Global Emissions from Land Use Change

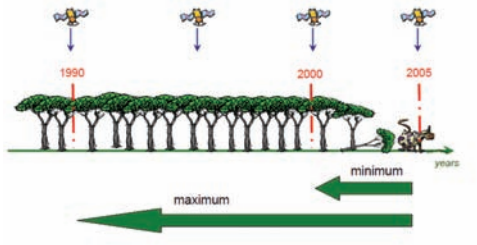


REL and RL

- The **reference emissions level** (REL) is the amount of gross *emissions* from a defined area estimated within a reference time period (REDD)
- The **reference level** (RL) is the amount of net/gross *emissions and removals* from a defined area estimated within a reference time period.

Reference Period

(Source: RFC)



Three Options

(Source: RFC)

- **Simplified**: only gross emissions from forest land converted to other land uses (Deforestation) -- Category 2
- **Complete**: gross GHGs emissions related to decreases in forest carbon stocks (Deforestation and degradation) – Category 3 / IPCC GPGS
- **Sector**: full GHGs balance from the whole Forest estate (Deforestation, forest degradation, SFM, conservation) -- Category 3

Three approaches for area change representation

Approach 1	Approach 2	Approach 3
Net area of land use for various land use categories; no tracking of land use conversions	Tracking of land use conversion on a non-spatially explicit basis	Tracking of land use conversion on a spatially explicit basis
Net-Net changes between categories	Gross-net changes between categories	Gross-net changes between categories & within categories

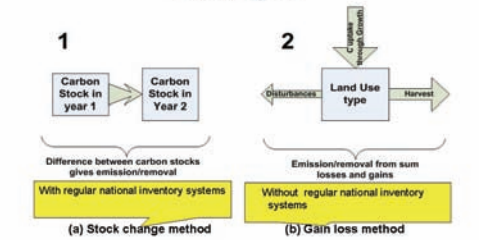
Three methodological Tiers

Tier1 :
- **Simple first order approach**
- Use Coarse activity data from global datasets, simplifying assumptions, IPCC default parameters, large uncertainties

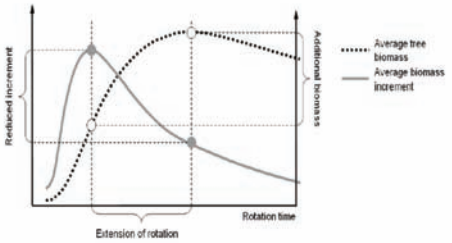
- **Tier 2**:
  - **A more accurate approach**
  - more disaggregated activity data, country specific parameter values, smaller uncertainties
- **Tier 3**:
  - **Higher order methods**
  - detailed modeling and/or inventory measurement systems driven by data at higher resolution and much lower uncertainties

- **Higher Tier methods (Tier 2&3)** are required for **key source categories**, source or sink categories that contribute substantially to the overall level, trend or uncertainty

Estimating Carbon Stock Changes



SFM – Some Issues on Rotation



Variability in Sampling Design in Asian NFI
Please update/correct

- **Systematic sampling**
  - **Japan, India, S.Korea** use 4km grid
  - **Philippines** (0.5^0 or approx. 27km grid)
  - **China, Mongolia, Myanmar** (3km grid)
  - **Indonesia** - (20km grid and 10x10 Km)
  - **Laos** – 2km grid
- **Simple random sampling**
  - **Pakistan**
- **Cluster sampling**
  - **Bhutan, Brunei, and Thailand**

Activity Data - Forest extent

Variables	Countries	Main methodology
Forest land area	15	Remote Sensing (RS)
Area of forest canopy/crown cover	12	RS (aerial interpretation & imagery)/ survey
Area under forest management	10	Maps/survey/records
Area under formal forest management plan	9	Records, maps & survey
Area under sustainable forest management	8	Records, maps, survey
Forest area with certification	2	Records (only 1 country)
Area under public owned forest	9	Records, maps, survey
Area under private owned forest	8	Records, survey, maps

Geo-physical (Partial) Information

Variables	Countries	Main methodology
Geo-Coordinates	15	Maps (also GIS), survey
Spatial Landuse Change	None	
Altitude	14	Maps, survey, GIS, RS
Topography	17	Maps, survey, GIS
Orientation	13	
Slope	15	
Soil	14	Records, soil sample & survey
Soil type	12	
Soil texture	10	
Soil organic matter	7	
Geological structure	8	Maps, sample survey, records
Rainfall	8	Records, map, survey, GIS

Bio-physical (Tree) information

	Variables	Countries	Main methodology
Main measurements for BE	Number & Diameter	17	Sampling (few: census)
	Diameter of trees	16	Sampling (few: census)
	Height of trees	14	Sampling
	Length of stem	9	Sampling
	Stump height	8	Sampling
	Age class	11	Sampling, census & record(1)
Selected measurements for BE	Branches	3	Length, mean diameter, thickness & weight measured mainly through sampling
	Twigs	2	
	Bark	3	
	Leaves	1	

Emission Data Biomass Estimation

- Only four countries collect (partially) information
  - Wood densities,
  - Volume expansion factors
  - Biomass expansion factors,
  - Allometric equations
  - Model
  - Estimation and reporting
- Only four countries estimate and report on forest carbon

Conservation-Biodiversity (Partial)

	Variables	Countries	Main methodology
Biodiversity	Tree species	14	Survey, knowledge
	Shrub species	9	Survey, knowledge
	Herbs species	8	Survey, knowledge
Status	Endangered species	5	Knowledge, survey
	Critically endangered species	4	
	Vulnerable species	4	
	Native species	5	
	Endemic species	5	
	Introduced species	2	

Information on Safeguards

Beneficiaries, IP, Multi-stakeholder Process

Variables	Countries	Main methodology
IPs, Locality of user	6	Record, survey, observation
Goods / Services used	5	Record, observation, knowledge, survey
Economic class of the beneficiaries	3	Record, observation (only 2 countries)
Level of dependency	3	Record
Physical accessibility	3	Map/record/knowledge
Multi-stakeholder Process (partly)	2	
Transparency (partly)	3	Web-site

Review of NFI (in the Working Groups)

- Does it satisfy all demands of forest information including QA/QC – what are the gaps
- Are specification on why and what to collect are well documented
- Are Justifications or basis for the selection of methods of data collection, analysis and reporting are available
- Does NFI ensure transparency, rigorousness, robustness. completeness, comparability, accuracy, and precision
- Is NFI validation, reporting and verification compliant
- Where to look for guidance, support and help – a system at national / regional / international level

Thank You