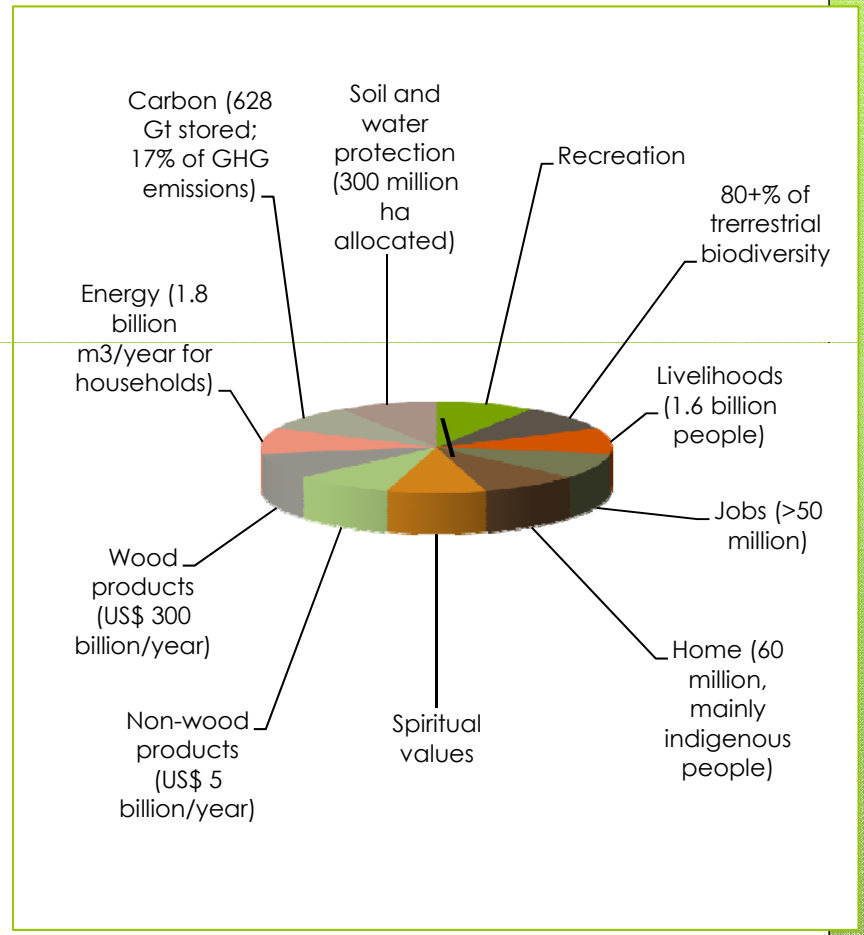
REDD+

Managing forests for climate and for sustainable development

IGES – YNU/SLER Joint Seminar
Risk management and sustainability promotion – Issues and challenges
29 November 2011
15:00 – 17:30
IGES Hayama Conference Room 1

1. Global importance of forests

- Natural forests provide a range of ecosystem services that are vital to the human well-being:
  - *Supporting services* – soil production and nutrient cycling;
  - *Provisioning services* – timber and non-timber products;
  - *Regulating services – climate and hydrological regulation;*
  - *Cultural services* – cultural, religious, recreational and scientific values.

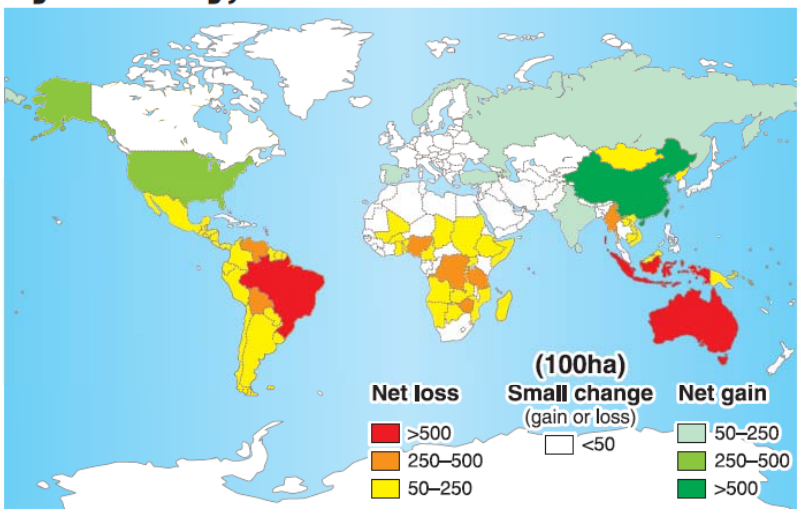


Source: UNFF, 2009 (http://www.slideshare.net/CIFOR/the-un-forum-on-forests-facilitating-and-catalyzing-sfm-financing)

2. Global forest crisis

- Almost half of Earth's original forest cover gone, much of it destroyed within past three decades (WRI 1997)
- Globally, on average 13 million hectares of forest were lost each year from 2000 to 2010 (FRA 2010).

Annual change in forest area by country, 2005–2010



Source: Forest Resources Assessment 2010

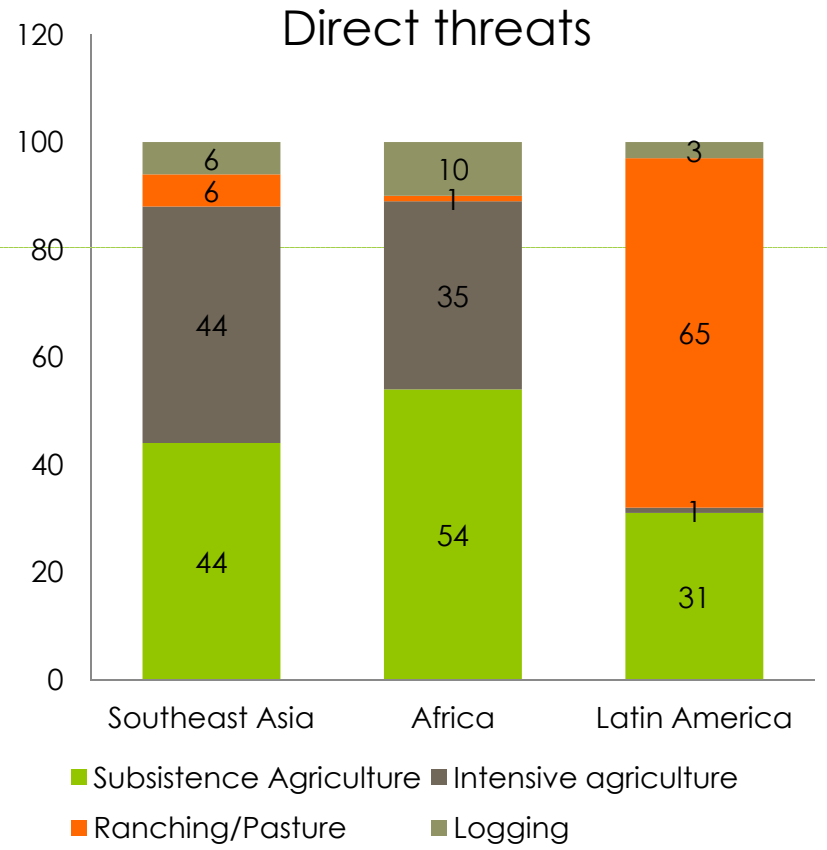
Ten countries with largest annual net loss of forest area 2000-2010 (FRA 2010)

Country	Annual Change	
	(1,000 ha/yr)	%
Brazil	-2,642	-0.49
Australia	-562	-0.37
Indonesia	-498	-0.51
Nigeria	-410	-3.67
United Rep. of Tanzania	-403	-1.13
Zimbabwe	-327	-1.88
Dem. Rep. of the Congo	-311	-0.20
Myanmar	-310	-0.93
Bolivia	-290	-0.49
Venezuela	-288	-0.60

3. Threats to tropical forests

- Underlying drivers: Most forest services are never monetized, thus forests are overharvested or converted to other land uses that provide greater monetary values

Throughout the 1980s and 1990s, rainforests were the primary source for new agricultural land, with over 80 percent of new agricultural land coming from forests



Source: Project Catalyst data analyzed by Rhett Butler; mongabay.com, 2009

Shifting agriculture

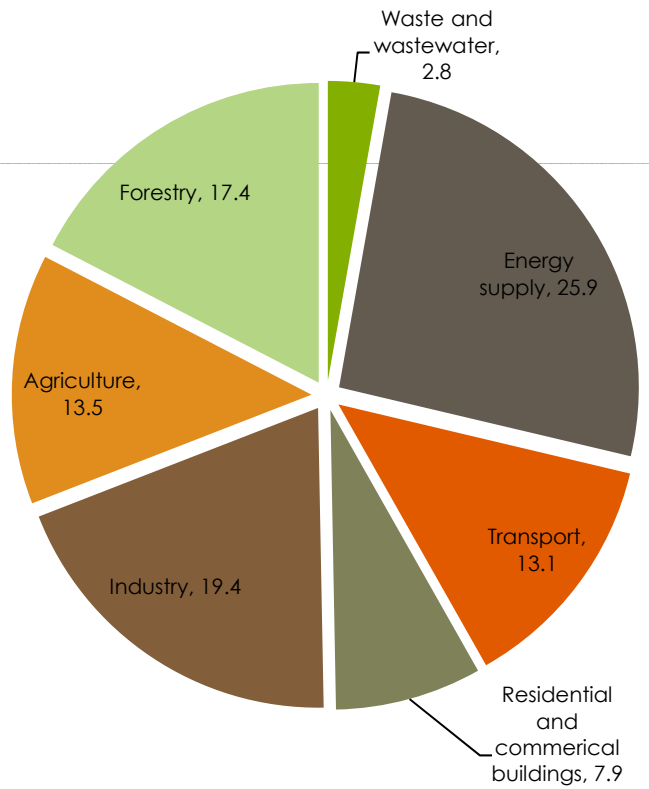
Bad logging practices

Commercial agriculture

4. The need to better manage tropical forests for climate change mitigation

- The World's forests cover 31% of land area & store more than 650 billion tonnes of carbon (FRA 2010).
- Forestry, as defined by the IPCC, is the third largest source of greenhouse gas emissions – larger than the entire global transport sector (Eliasch 2008).
- About 96 per cent of deforestation emissions comes from developing countries in the tropics (Eliasch 2008).
- Without tackling forest loss, it is highly unlikely that we could achieve stabilization of greenhouse gas concentrations in the atmosphere at a level that avoids the worst effects of climate change (Eliasch 2008).

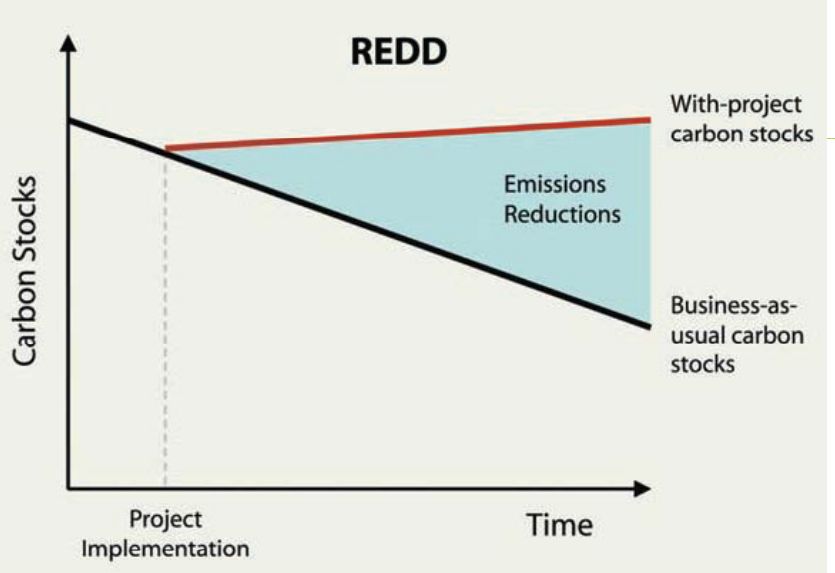
Sources of GHG Emissions



Source: IPCC, 2007

5. Enter the concept of REDD+

- REDD+ :
  - Puts a value on forests for the services they provide as carbon sinks and stores.
  - Aims to make standing forests more valuable than alternative forms of land use
  - Provides financial incentives for measurable / verifiable reductions in GHG emission from deforestation & forest degradation and/or increases in GHG removals by standing forests

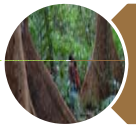


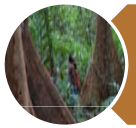
- REDD = reduced emissions from deforestation and degradation
- "+" = conservation of forest carbon stocks, 4. enhancement of forest carbon stocks, sustainable management of forests
- Can be policies and measures, e.g. regulating best practices for timber harvesting, or projects in a specific geographic area
- Has a set of safeguards

REDD+ safeguards


Consistent with national forest programs, relevant international conventions / agreements


Transparent & effective governance


Respect knowledge & rights of indigenous peoples & local communities


Full & effective participation


Support conservation of natural forests & biological diversity


Reduce reversals (non-permanence)


Reduce emissions displacement (leakage)

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6. IGES Community Carbon Accounting (CCA) Project

- Project synopsis: Together with local partners, IGES is developing & testing approaches in Papua New Guinea, Indonesia, Laos and Cambodia to engage local communities in monitoring their forest carbon stocks
- Why? To contribute to the development of equitable and sustainable approaches to REDD+ through identifying roles that local communities can play roles & rewarding them for these roles

Methodology – Action Research

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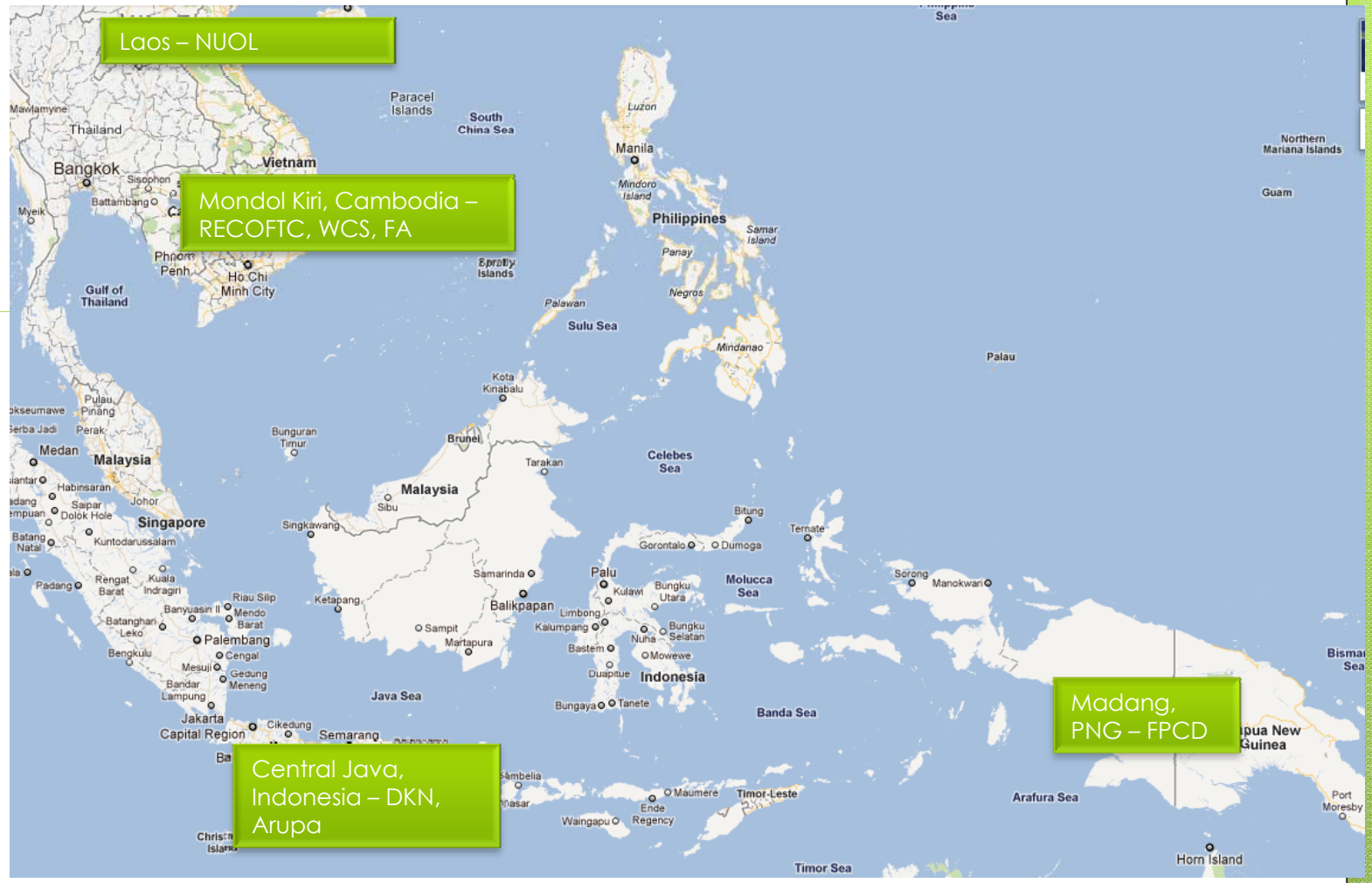
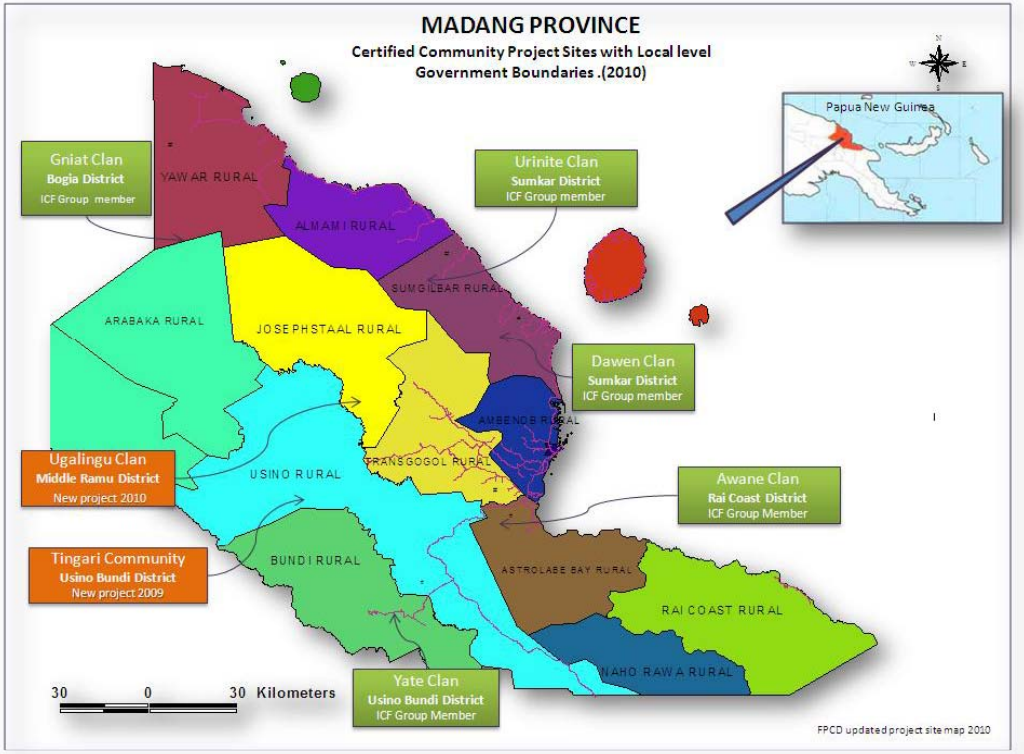
Partners and Sites



Example: IGES – FPCD CCA Action Research in Madang Province, PNG

- Area: 9,117.84 ha, consisting of 5 separate forest areas owned and managed by communities



Community carbon accounting awareness and training

- Building capacity of research/facilitation team
  - Training on good practice for forest carbon accounting
  - Training on GIS
- Awareness and training of community members
  - Awareness on climate change and carbon trading
  - In-field training on diameter, height and deadwood measurements, and on establishing nested plots

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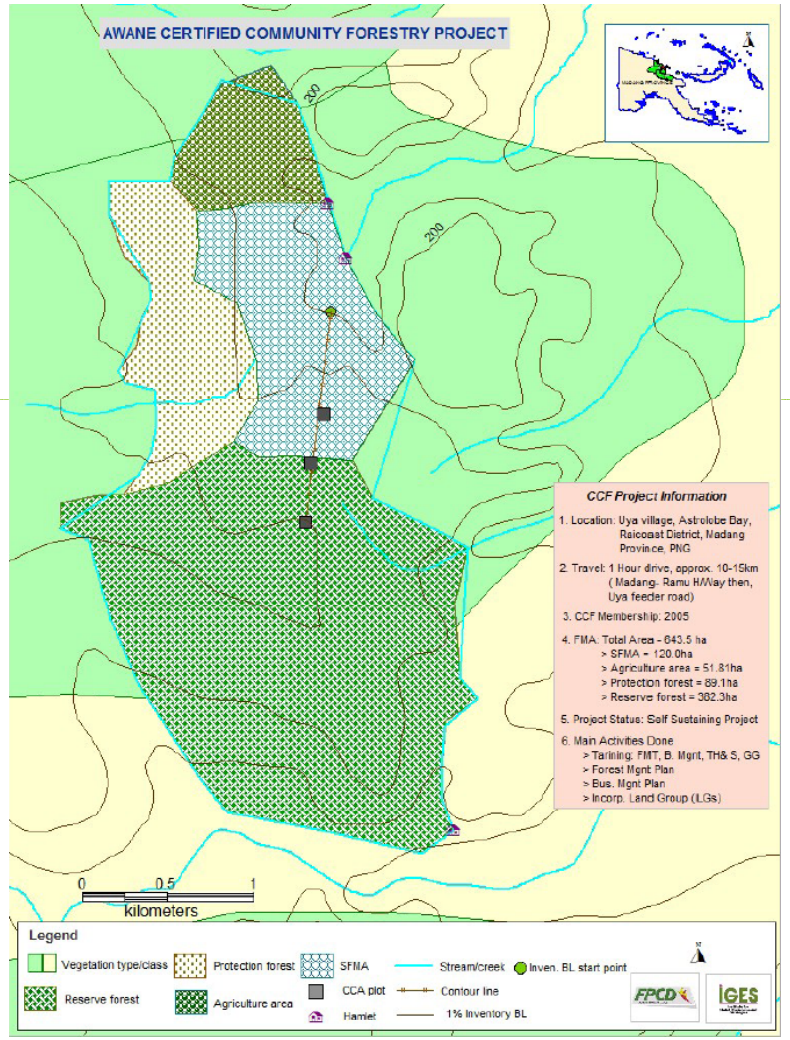
Mapping and stratification

- Foresters facilitate discussions between communities to confirm traditional forest boundaries
- Foresters and clan members delineate forest and strata boundaries using GPS
- Carbon and other data uploaded to GIS



Measurement

- Sample plots across 5 forests established
- Trees tagged
- Parameters recorded/measured:
  - Above ground living biomass carbon pool
    - Measure trees with diameter ≥5cm:
    - Record
      - Species,
      - DBH,
      - Total height,
      - Merchantable height
  - Deadwood carbon pool:
    - Measure
      - Standing deadwood - diameter at base and bole top; tree condition
      - Lying deadwood (line intersect method) – diameter at intersect; decay

Plot establishment and tree tagging / marking

Species identification

Diameter measurements

Height measurements

Deadwood measurements

Data analysis

FMA	Yate Clan, Brahman
Stratum description	Low montane HM vegetation class unlogged forest
Purpose	ABLB and deadwood measurement, tree tagging
Survey date	23-Sep-11
Survey team members	Brian Daniels, Kafuri Yaro, Mevis James, Charles Waka; FROs - Ronnie, Anton, Enes, Nathan, Benson: Survey team leader - Kafuri; Data recorder - Mevis
Baseline details	Latitude: 145.35235 Longtitude: 5.76553 Forward Bearing 175 Distance ??
Plot details	Latitude: 5.76524 Longtitude: 145.34794 Aspect 52 Altitude: 250 MASL Slope: 45 Slope position: 4
Disturbance	Minor landslip 15%; Wind throw, 60% canopy cover; heavy litter decomposition; sparesly populated forest
Survey time	Start: 13:27 Finish: 16:43 Total 3 hours 16 minutes
Time to reach plot	72 minutes

Plot No.	Tree No.	Species	POM	DBH (cm)	Height (m) Distance from tree	TH (%)	MH (%)	POM (%)	MH (m)	TH - measured (m)	TH - defaults (m)	Wood Density (g/cm3)	AGLB (kg)	AGLB (kg) defaults	Carbon (kg)	Carbon (kg) defaults	EF	Slope	Adjusted EF	Basal area (m2/ha)	C/ha (kg) height measured	C/ha (kg) height defaults
3	1	MYR	1.3	11.9	13.0	68	30	-18	7.4	12.3	13.5	0.4	35.2	38.5	17.6	19.2	64	45	90.5	1.0	1594.1	1740.2
3	2	MAS	1.3	6.0	11.6	46	30	-11	6.0	7.9	7.6	0.6	9.9	9.6	5.0	4.8	256	45	362.0	1.0	1796.4	1729.5
3	3	?	1.3	9.2	15.5	40	5	-23	5.5	10.8	10.8	0.5	23.5	23.6	11.8	11.8	256	45	362.0	2.4	4259.5	4266.4
3	4	?	1.3	5.2	11.1	52	35	-23	7.6	9.4	6.7	0.5	7.1	5.1	3.5	2.5	256	45	362.0	0.8	1278.8	923.2
3	5	POM PIN	5.4	49.6	20.9	73	20	-25	14.5	25.3	32.1	0.6	1490.9	1868.2	745.4	934.1	16	45	22.6	4.4	16867.5	21136.7
3	6	CRY	1.3	16.4	12.9	45	13	-25	6.1	10.1	17.6	0.5	63.6	107.6	31.8	53.8	64	45	90.5	1.9	2879.4	4869.8
3	7	PIM AMB	1.3	28.0	14.7	64	32	-54	12.4	16.6	23.5	0.5	286.3	397.2	143.2	198.6	16	45	22.6	1.4	3239.5	4493.8
3	8	PIM AMB	1.3	27.8	16.0	67	25	-39	10.8	17.1	23.4	0.5	291.1	390.4	145.6	195.2	16	45	22.6	1.4	3293.6	4417.0
3	9	BUC	1.3	22.5	17.2	76	45	-25	13.0	18.2	21.9	0.3	130.9	155.9	65.5	77.9	16	45	22.6	0.9	1481.2	1763.4
3	10	ELM PAP	1.3	37.9	16.0	90	51	-18	12.2	18.3	27.4	0.4	457.3	668.1	228.6	334.0	16	45	22.6	2.6	5173.2	7558.5
3	11	STE AMP	1.5	41.0	22.6	80	40	-30	16.7	25.3	29.6	0.3	526.4	609.3	263.2	304.6	16	45	22.6	3.0	5955.9	6893.2
3	12	FLI PIM	1.5	53.1	19.5	120	69	-14	17.5	27.4	37.1	0.4	1273.5	1693.4	636.7	846.7	16	45	22.6	5.0	14407.8	19158.9
3	13	?	1.3	21.5	17.0	58	36	-23	11.1	14.7	20.3	0.5	155.1	210.0	77.5	105.0	16	45	22.6	0.8	1754.2	2376.4
3	14	CEL LAT	1.3	31.5	13.1	85	41	-13	8.3	14.0	27.5	0.5	317.7	598.0	158.8	299.0	16	45	22.6	1.8	3594.0	6765.9
3	15	MAL	1.8	26.0	17.7	21	-1	-6	2.7	6.6	22.0	0.6	136.9	426.5	68.4	213.3	16	45	22.6	1.2	1548.7	4825.4
3	16	FLA	1.7	54.0	25.8	86	41	-14	15.8	27.3	40.7	0.5	1562.5	2275.6	781.3	1137.8	16	45	22.6	5.2	17677.9	25745.2
3	17	MYR	1.3	23.9	17.6	88	46	-32	14.4	21.4	21.4	0.4	220.0	220.0	110.0	110.0	16	45	22.6	1.0	2489.2	2488.7
3	18	?	1.5	38.7	18.1	82	24	-42	12.5	22.2	28.7	0.5	688.7	876.6	344.3	438.3	16	45	22.6	2.7	7791.4	9917.4
3	19	PIM AMB	1.3	20.8	12.6	100	0	-62	7.9	18.6	19.7	0.5	183.1	192.3	91.5	96.2	64	45	90.5	3.1	8284.2	8702.9
																Basal Area (m2)/ha				41.4		
																Total Carbon/ha (Mg)					105.4	139.8

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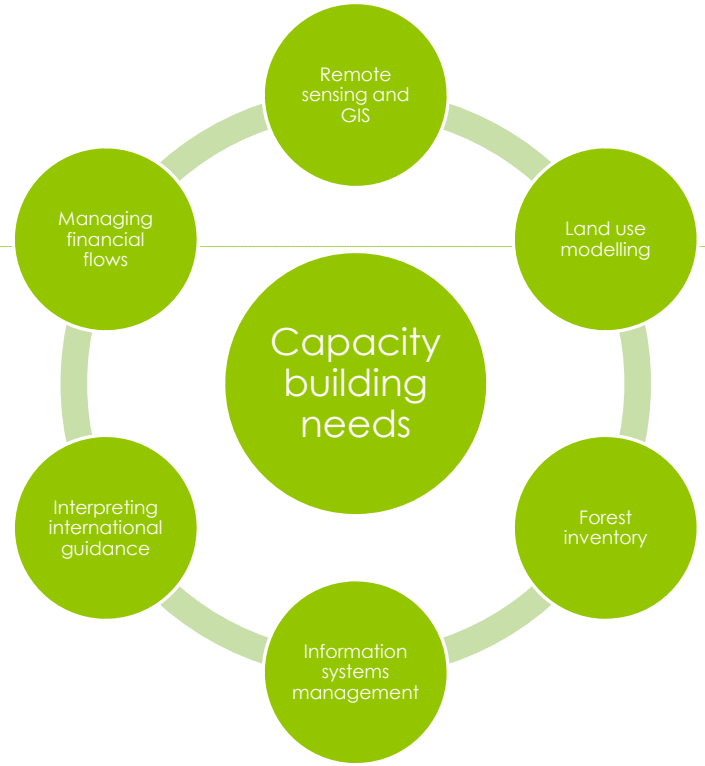
7. Key issues for REDD+

- REDD+ needs highest level political support in each country
- REDD+ needs to be designed and implemented in each country through multi-sectoral, multilevel (national and sub-national) and multi-stakeholder organisational frameworks for REDD+
- Local level awareness campaigns are critical
- Well-organised and targeted capacity building in countries preparing for REDD+ required. Common capacity building needs are



Thank you for your attention

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