A better way of dealing with degradation:
overview of side event

The Kyoto:Think Global Act Local project

www.communitycarbonforestry.org

Presented at the SBSTA30 Side Event:
¨A better way of dealing with degradation¨
Bonn, June 1 2009

University of Twente
The Netherlands

ITC

ENDA

ICIMOD

Kyoto: Think Local Act Global project

- Research and capacity building
- From 2003: financed by Netherlands Development Cooperation
- Consortium of research institutes: UT, ITC, ENDA, Sokoine U, ICIMOD, CHEA, Treeconsult.
- Working in: Senegal, Mali, Guinea Bissau, Tanzania, Nepal, Uttarkhand (India), Papua New Guinea.

Community forest management

- What can communities contribute under REDD?
- How could they benefit?
- What conditions would be required under REDD if communities are to contribute?

- **Presentations**
  - How can degradation be operationalised within REDD?
  - What happens to carbon stock when communities manage their forests?
  - Dealing with measurements
  - What does it cost?
  - Can REDD learn from PES at community level?
  - Some of the policy issues, international and national

- KTGAL thanks Intercooperation and CIFOR for support and cooperation in this side event

How can degradation be operationalised within REDD?

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Degradation: loss of biomass from within forest while it remains forest

The bad news first

- Emissions from degradation have probably been greatly underestimated by IPCC
- The estimates include timber extractions visible in RS and registered in forestry statistics (mostly in humid forest areas)
- They hardly include low level but widespread extractions (particularly in dry forests and savanna woodlands) which result from daily community uses
- Most developing countries have no data on these losses (not visible in RS, no forest inventories): no historical baselines are possible

Example: data situation,Tanzania

- FRA 2005 data on deforestation are based on estimates made in 1987 on 1984 RS data and 1997 on 1995 RS data, using totally different forest & LU classifications
- The deforestation rate is approximated as a straight line 1% loss (412,000 ha/year)
- Stocking data based on a one-off, limited sample (36 ton/ha, clearly way too low)
- No data at all on loss of stock in forest remaining forest: no forest inventories

The good news

- Simple, low cost management by communities (CFM, JFM etc), can easily halt degradation
- In addition, this management results in annual increases in standing stock, restoring what was lost earlier (forest enhancement)
- And there are additional economic and environmental benefits for the communities
- Moreover, communities can easily be trained to measure and monitor the stock changes themselves (cheaply, reliably).

Forest regenerating some years after burning has been terminated

Corrollaries

- Gains due to forest enhancement are larger than gains due to reduced emissions, therefore:
- if carbon payments are to be an incentive, better to credit the gains due to forest enhancement
- These can be much more easily measured and verified as don´t require a historical baseline
- Treat degradation savings as nominal or ´buffer´
- Community measurement increases ´ownership´ and legitimacy of carbon payment:
- and may be the best way the state could gather statistics on stock change to substantiate claims

Policy conclusion: treat degradation as forest management: combine ´the second D´ with ´REDD Plus´

Mitigation option	Mitigation objective	Policy instrument	Forest management options
Reduce forest CO2 emissions	Reducing deforestation	REDD (the first D)	Committing forest for carbon conservation, using law enforcement, new protected areas, PES contracts on area basis etc.
Increase CO2 sequestration	Reducing degradation ⇕ Enhancing forest growth (restoring stock lost earlier)	REDD (the second D) ⇕ REDD Plus	A broad range of forest management strategies could be used to replace unsustainable uses of forest with sustainable ones: sustained timber yield management, community forest management, enrichment planting, PES on a per ton carbon saved basis. Such instruments will reverse degradation and result in enhanced forest stock.
	Creating new forests and tree cover	CDM A/R	New planted forest, new agroforesty, rehabilitiation of degraded lands with woody species etc.

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What happens to carbon stock when communities manage their forests?

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Typical management regimes: ´passive management´

- Contract with Forest Dept. establishes rights and responsibilities
- Per household quotas for sustainable off-take of firewood, fodder and poles
- Fines for transgressors
- Exclusion of non local users; patrolling
- Fire lines and fire watching
- Controlled grazing in forest

Location	Sampling	C tons/ha/yr	CO2 tons/ha/yr
Uttarkhand, India; oak and pine	9 sites over 5 yrs	2.9	10.4
Nepal: broad leaf sub-tropical	2 sites over 5 yrs	1.5	5.4
Nepal: temperate coniferous	1 site over 4 yrs	0.5	1.8
Mali: savanna woodland	1 site over 3 yrs	1.5	5.4
Tanzania: savanna woodland/lowland forest	5 sites 3-4 yrs	0.7	2.4
Tanzania submontane evergreen	1 site over 4 yrs	3.7	13.3
Senegal: savanna woodland	4 sites over 4 yrs	1.1	4.0
Guinea Bissau:	5 sites over 2 yrs	4.1	14.9

Is community management strong enough to resist pressures from outside?

- In 4 of the 28 sites (14%), there were illegal incursions (clearance for agriculture, timber felling) which community management could not deal with
- Resulting in loss of carbon in a given year (losses are included in our statistics on growth)

What happens without community management?

- 5 control sites
- All registered losses of carbon
- Between -0.3 and -1.7 tons carbon per ha/yr
- Varies between ecotypes and as a result of different population pressures

Strength of our data

- The trend is clear
- Caution needed as regards the absolute values
- The variation around the mean is high, which means larger sample size may be needed in many locations
- More control sites are needed to establish the degradation rate

Dealing with Measurements

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Methodology

- **Community Inclusion – Reducing Transaction Costs**
  - **so that it becomes economically viable**
  - **for the community members to be as responsible as possible (… willing and able …)**
  - **to develop the protocols and mechanisms (and associated training) so that the measurements can be acceptable in a formal carbon finance mechanism.**
  - **the KTGAL programme provides additional evidence (… yes, they can …)**

Methodology

- **Local Participation in Measurements and Mapping**
  - **The mapping and monitoring activities include:**
  - **determining the community and project boundaries,**
  - **measuring initial carbon stock in carbon areas,**
  - **estimating baselines**
  - **monitoring carbon sequestration rates in areas**
  - **mapping forest conditions and community management mechanisms,**
  - **supporting verification procedures.**

Field Guide for Measurements

A Field Guide for Assessing and Monitoring Reduced Forest Degradation and Carbon Sequestration by Local Communities

- Part 1: for communities
- Part 2: for trainers *(draft available online)*
- Part 3: for policy makers

Field Guide Contents (part 2)

- The project methodology
- What to use?
- How to collect data?
  - Selection of the local community trainees and training
  - Getting started with Mobile GIS
  - Training on measurement of forest stock
  - Main steps for carbon assessment
- How to analyze and report the data?
- How to implement?

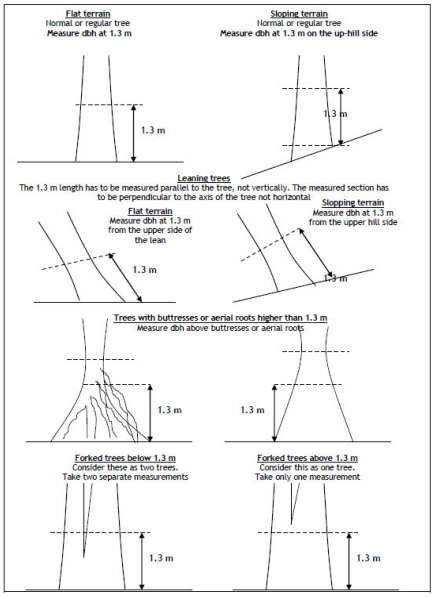
Field Guide

A tree caliper for measuring dbh

A tape to measure tree dbh and sample plot size

Hypsometer for tree height measurement

An extendable pole for height measurement



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Field Guide

(a) Dbh measurement using tree caliper

(b) Dbh measurement using diameter tape

(c) Height measurement using a hypsometer

Fig. 19 a-c: Measuring of tree parameters

(a) Sighting the direction of the transect using a compass,

(b) Measuring distance between pl measure,

(c) Demarcating a plot using a tape measure

(d) Recording details of the description of the plot to the handheld computer database,

Fig. 18 a-d: Illustrations to show the sequence of activities while locating permanent sample plots on ground

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Field Guide

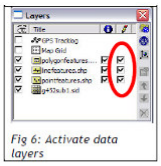


Fig 6: Activate data layers

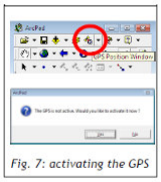


Fig. 7: activating the GPS

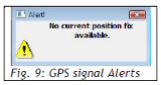


Fig. 9: GPS signal Alerts

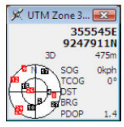
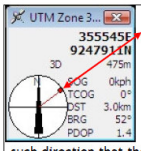


Fig. 12: Example data collection form



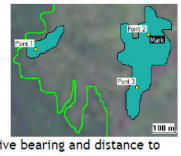
The red dot indicates the direction to take.

DST → distance to next point

Task is to move in such direction that the large black arrow points in the direction of the red dot.

Figure 13b: Using the Go To function; GPS window

Traveling between point 1 and point 2 can be done using the Go To function.



The GPS will give bearing and distance to the next point.

Figure 13c: Using the Go To function; Map window

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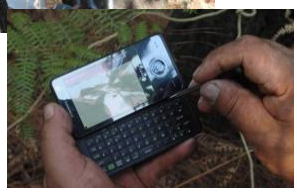
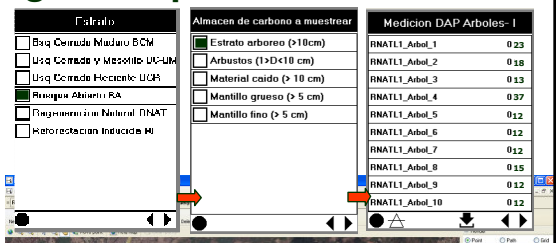
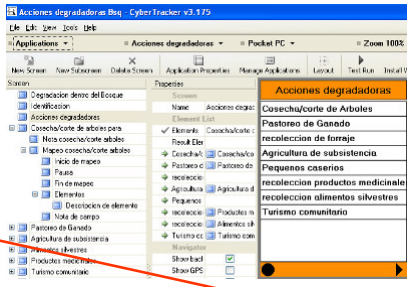
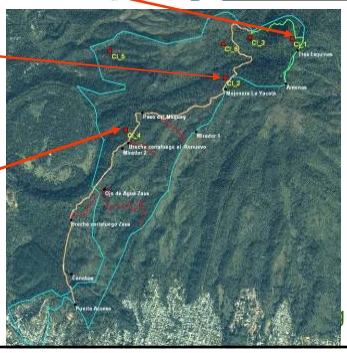
Collection of geo-referenced data on DBH and tree height using smart phones





Mapping activities contributing to forest degradation





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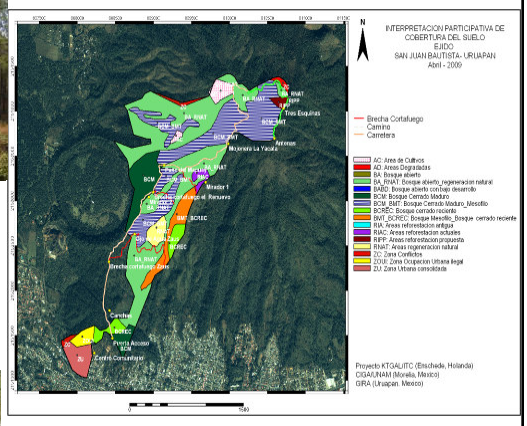
Delimitation and participatory mapping of forest strata



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Methodology

- **strong benefits for capacity-building and management and planning initiatives by the communities:**
  - **skills development and capacity-building with the community;**
  - **better dealing with the carbon professionals;**
  - **ownership of the data produced,**
  - **heightened community 'ownership' of the carbon project**
  - **using the mapped data for applying for other PES**
  - **utilising participatory techniques for other community purposes,**

What does it cost?

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Benefit and costs under different scenarios

	Scenario 1	Scenario 2	Scenario 3
Benefits	Fuelwood Fodder Timber NTFP	Fuelwood Fodder Timber NTFP Carbon revenue	Carbon revenue
Costs	Labour Management Forest protection	Labour Management Forest protection Carbon measurement Prepare project proposal Marketing carbon credits Formal management Forest guards	Labour Management Forest protection Carbon measurement Prepare project proposal Marketing carbon credits Formal management Forest guards Fuelwood (foregone) Fodder (foregone) Timber (foregone) NTFP (foregone)

The cost of carbon sequestration in Nepal

Site	Biomass growth per ha	Household per ha	Fuelwood consumption per household	Value of benefit derived from CFM Scenario 1	Break even price for tCO_2 under Scenario 2	Break even price for tCO_2 under Scenario 3
	$t ha^{-1} yr^{-1}$	$hh\ ha^{-1}$	$thh^{-1} yr1$	$\$hh^{-1} yr^{-1}$	$\$/tCO_2$	$\$/tCO_2$
Ilam (383 ha)	6.42	0.85	3.3	128	0.55	8.95
Lamatar (96 ha)	2.96	1.60	3.2	72	3.7	17.44
Manang (240 ha)	2.18	1.46	2.1	85	2.3	12.78

Costs and Net Benefit of CFM in Tanzania at $5 per tCO2

Village Name	Forest area (ha)	Management Costs ($)	Transaction Costs ($)	Opportunity Costs ($)	Total annual Costs ($)	Total annual Market Value ($)	Net Benefit to village ($)
Gwata	1,020	1,580	10,226	12,240	24,046	46,155	22,110
Ludewa	28,5	1,525	328	656	2,509	1,717	-792
Mgambo	156	1,460	1,915	1,092	4,467	10,569	6,102
Ayasanda	550	1,580	4,936	4,950	11,466	19,113	7,647

- **Villages with large forest area break even well when the price per tCO_2 is below $5**
- **Village with small forest area break even at $7.5 per tCO_2**

Cost of carbon sequestration

- CFUGs/CFM derive greater non-monetary benefits than monetary benefits from managing community forests; and these benefits are the economic rationale for them to manage and conserve their forest at present.
- For the local CFUG/CFM members, carbon trading is only attractive when forest resources are permitted under where gains from carbon management are additional to gains from CFM.
- Benefits from sustainable management keeps costs down.
- Size of the area of forest is a major variable determining net benefit level and the break-even price for tCO_2. The larger the area the less the relative cost in managing the forest.

CAN REDD LEARN from PES at COMMUNITY LEVEL?

Charlotte Benneker & Michael McCall
The Kyoto:Think Global Act Local project
www.communitycarbonforestry.org

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PES and REDD

	PES payments	REDD payments
Goal	For management and conservation	For reduced emissions PLUS sequestration
Actors	Rendered by communities or individuals	Rendered by biomass (land) owners
Action Space	Management of areas (land units) & resources	Management of carbon
Purpose	To ensure sustainability of environmental goods & services	To ensure sustainable conservation of carbon
Beneficiaries	For benefit of other actors	For global benefit and future generations

EXPERIENCE OF CURRENT CARBON PES IN MEXICO

- Limited interest to participate in CONAFOR (FD) program on carbon PES
- % of projects approved for design low
- % of projects approved for implementation even lower
- No sales to international market from carbon PES program.
- Involved actors disillusioned with voluntary international carbon markets
- Involved actors sceptical about government commitments
- National voluntary carbon market opportunities, rare but growing – Banks. PEMEX, etc.

HOW IS REDD DIFFERENT FROM PES at COMMUNITY LEVEL?

PES	REDD
Focus on payments for multiple ES for sound forest management	Focus on payments for carbon & biomass only
PES may select less carbon-efficient management systems, including Community Forestry	Market chooses most efficient carbon management systems, indifferent to side-effects (such as plantations)
Conceptually easy	Conceptually difficult
Environmental Services appreciated regionally	No direct local benefit
Direct beneficiary-to-community relationship.	Relation carbon manager – buyer / beneficiary is distant
Process oriented: provision of TA and financial aid in entire production chain (eg Fair Trade)	Product oriented: payments only for carbon units, process is secondary (eg FSC)

HOW IS REDD DIFFERENT FROM PES AT COMMUNITY LEVEL?

PES	REDD
Requirements simple and clear	Requirements complicated
Payments for managed *areas*	Payments for carbon *units*
Communities can understand, oversee, respond to PES contracts.	Contracts include elements beyond community control (international market, leakage, etc.)
Flexibility to adapt to local circumstances (land rights, culture, power relations etc)	Rules inflexible, based on international norms
Short term, future unclear	Long term commitment demanded
Implemented and rewarded at community level	Implementation and reward for REDD beyond community level.

WHAT SHOULD REDD LEARN FROM PES AT LOCAL COMMUNITY LEVEL?

- Multi-functional - No unilateral focus on carbon.
- Focus on improving existing forest land use (degradation) to provide multiple services (environmental, social and economic) that directly benefit communities
- Regulations towards communities & farmers simple and straightforward,
- Contracts should concern elements people can be accountable for (not negotiation with international markets, not leakage etc.)

LOOKING FORWARD: REDD GOVERNANCE for COMMUNITIES at NATIONAL LEVEL

- International conditions for REDD payments 'buffered' by governments to adapt to local circumstances
- No single focus on economic efficiency and carbon units
- Tradeoffs (with poverty, biodiversity, etc) require political decisions fitting national & local conditions and not 'blindly' following international rules.
- Sound forest management cannot depend 100% on international carbon payments in the future; therefore:
- sse carbon payments to establish local/regional/national strategies to finance multiple, integrated ES in the future

Some of the policy issues at National Level

By: Eveline Trines

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Degradation:

Loss of biomass from within forest while it remains forest

Some of the CHALLENGES:

- Types of degradation
- Temporal and spatial diversity, nationally and internationally
- MRV challenges
- Stakeholders

REDD as national approach

- Dealing with local processes and local stakeholders (nested approach), or using a national grid?
- Regulating in UNFCCC context whilst respecting countries sovereignty
- Can we learn from JI, Annex I model and IPCC inventory guidelines?

Policy development at National level: use REDD to invite change

Prerequisites:

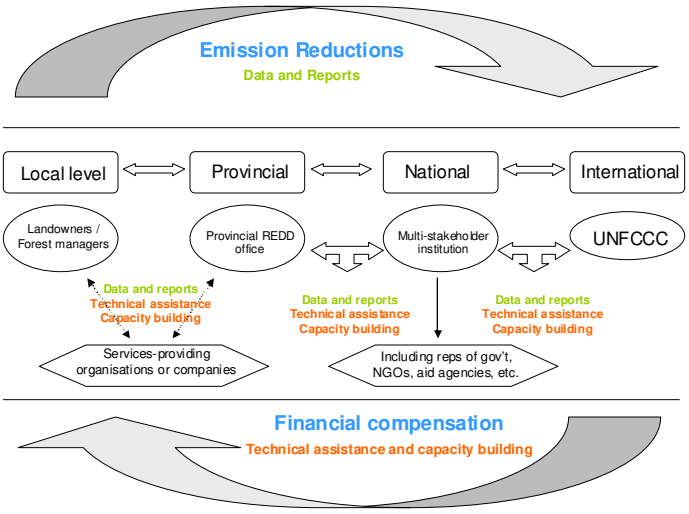
- Local stakeholders must benefit
- Data must be reliable
- Inventory method must be cost efficient

Measurements & Benefits

Assuming REDD+ is agreed at International level

- Must reflect climate change impacts: emissions and removals as the atmosphere observes them
- Reward those who create the environmental benefits: PES

Example of a PES System:



K:TGAL demonstrates…

- Local communities are capable of 'delivering' reliable data in a cost efficient manner
- There are PES systems that facilitate the nested approach
- Fighting degradation can have major environmental and social benefits on all levels

Thank you for your attention

- For more information please contact:

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