Linking community level monitoring with national MRV for REDD+

Side event SB34 Bonn 16.06.2011

WOTROMEX (Univ. Twente/CIGA-UNAM); Univ. Of Toronto; University of Freiburg.

Key messages

- Local communities can monitor carbon stock changes and other data in their forests efficiently and reliably
- Local level measurements will be essential for national REDD+ programmes, incorporated though a system of nesting
- Need to build effective domestic institutions to connect local with national MRV

Programme

- Monitoring at the local level
  - KTGAL and other projects (Jon Lovett)
  - Cameroon (Gillian Cerbu)
- Nesting, distribution of credits and the role of community monitoring (Margaret Skutsch)
- Domestic institutions for MRV – lessons from CDM experience (Mark Purdon)

Community Forest Management and Monitoring

Side event SB34 Bonn 16.06.2011

WOTROMEX (Univ. Twente/CIGA-UNAM);
Jon Lovett, University of Twente

Community Forest Management

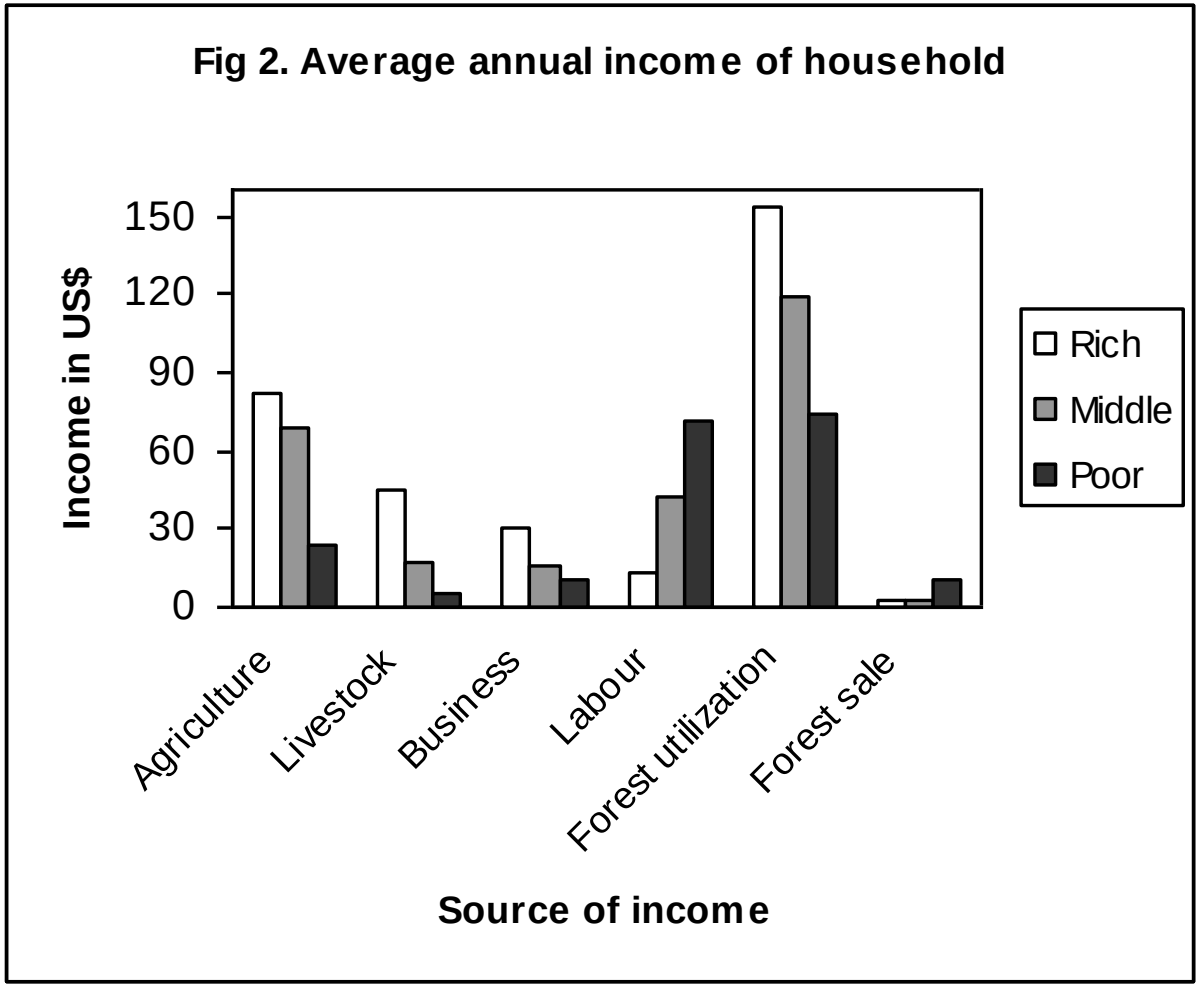
- Meshack et al. Afr. J. Ecol., 44, 2006, 468-477
- Usambara Mts, Tanzania
- Economics of CFM incl. transaction costs
- Three income groups: rich, middle, poor

Community Forest Management

- Empowerment of local communities
- Economically efficient – close link between producer and consumer
- Avoid market and policy failure
- Equitable

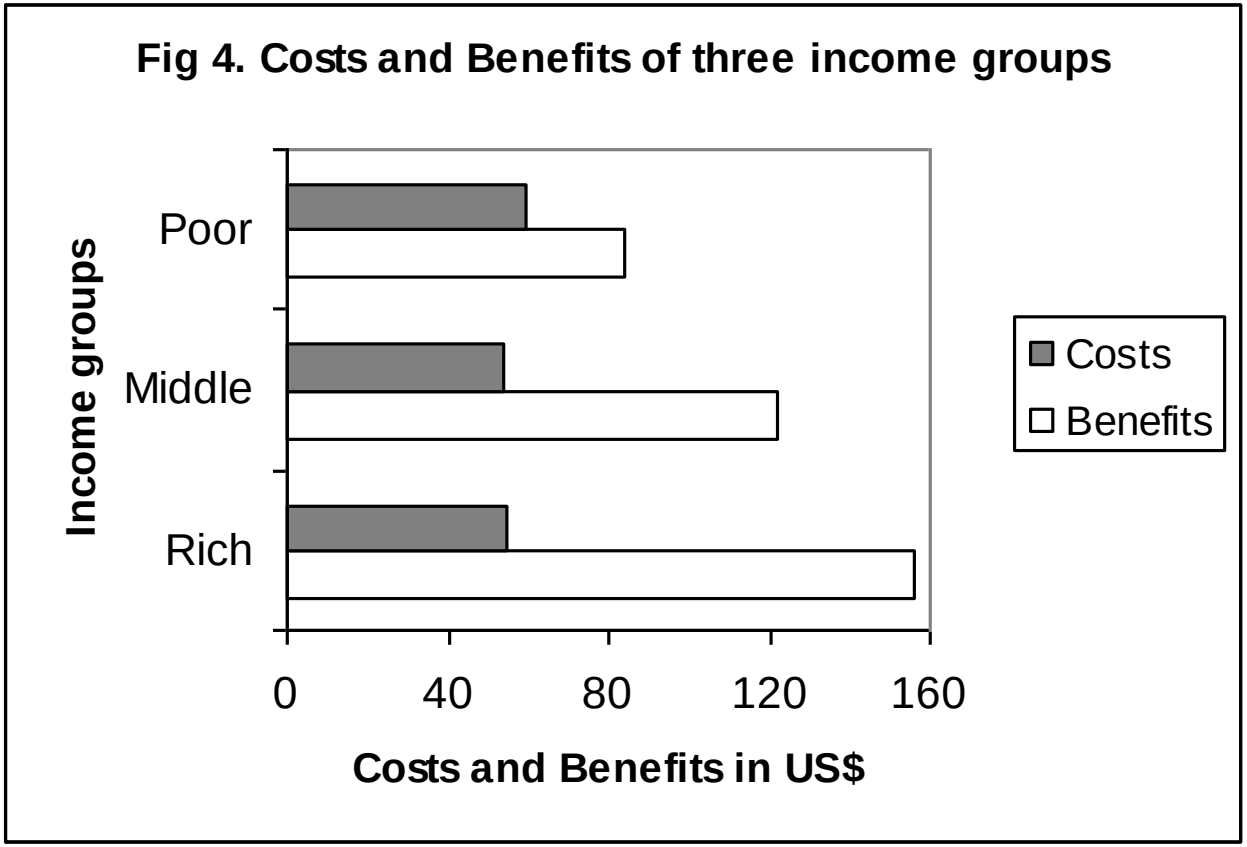
Usambara – sources of income

Sources and average amount of annual household income for each of the three wealth groups of rich, middle and poor



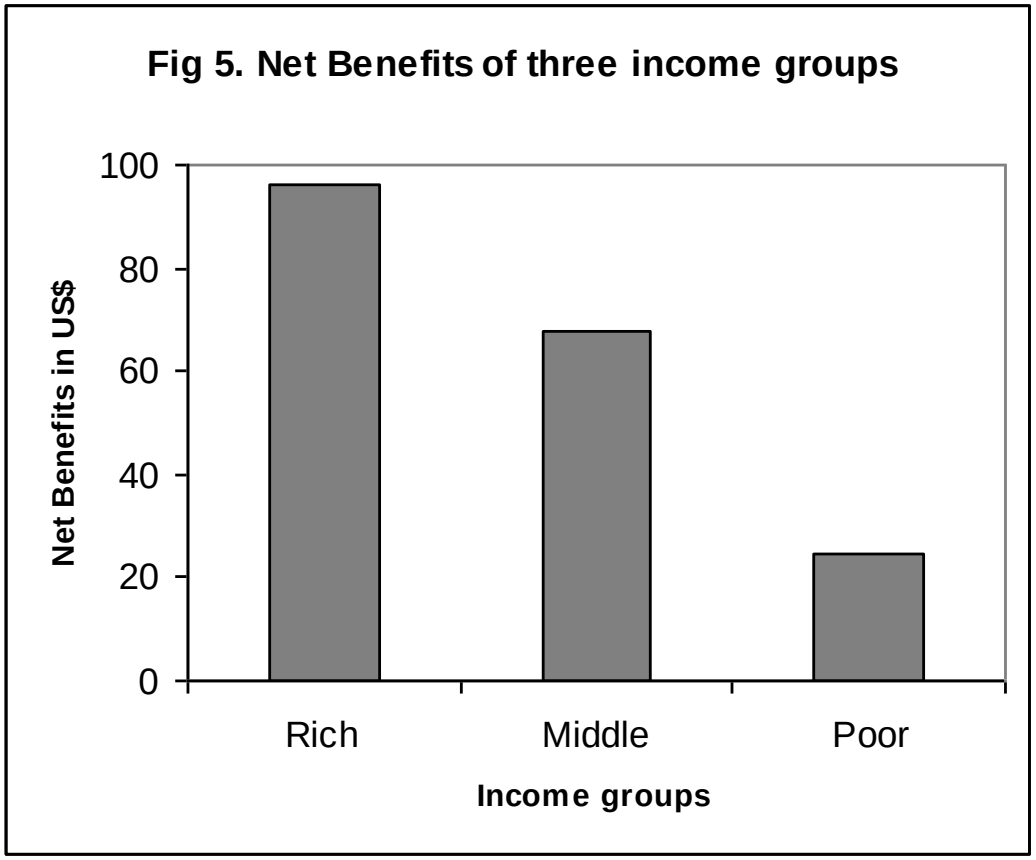
Usambara – costs and benefits

Costs and benefits of community based forest management for the three income groups.



Usambara – net benefits

Net benefits of community based forest management for the three income groups



Safeguards in CFM

State level

- Clarity of ownership and responsibilities
- Avoid transfer of costs to local level
- Transfer benefits of ecosystem payments to local level

Local level

- Avoid elite capture
- Reduce transaction costs: increase trust, reduced complexity of regulation
- Equitable distribution of costs and benefits

Ownership of information

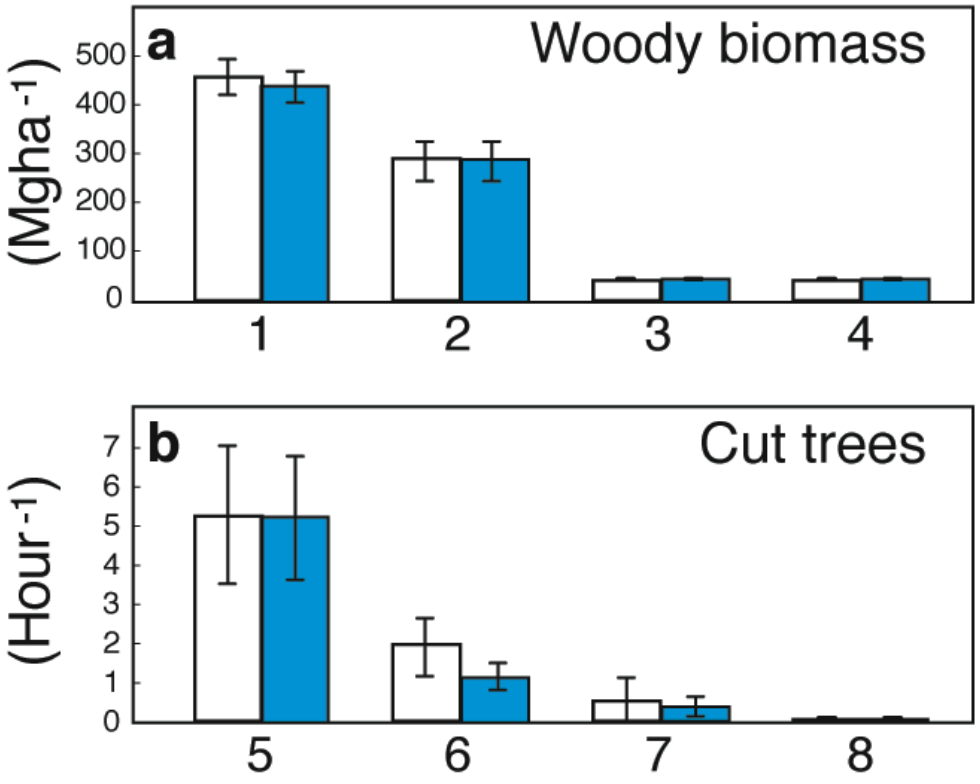
- Ownership of information gives power
- Ecosystem service payments need data
- External experts vs local monitoring
- Danielson et al. Conserv. Letters 4,2011, 158–167.

Community vs Scientists: Monitoring Forest Condition

Comparison of forest condition data compiled by local people and trained scientists.

Measurements of woody biomass (a, core sites 1-4) and cut trees (b, core sites 5-8) by community members (white) and professional experts (blue) over a range of forest biomass and resource use intensities in dense oak forest (core site 1), oak forest (core site 2) and degraded forest (core site 3) in India, miombo woodland in Tanzania (core sites 4-6), and dry deciduous forest in Madagascar (core sites 7-8).

Fig.1

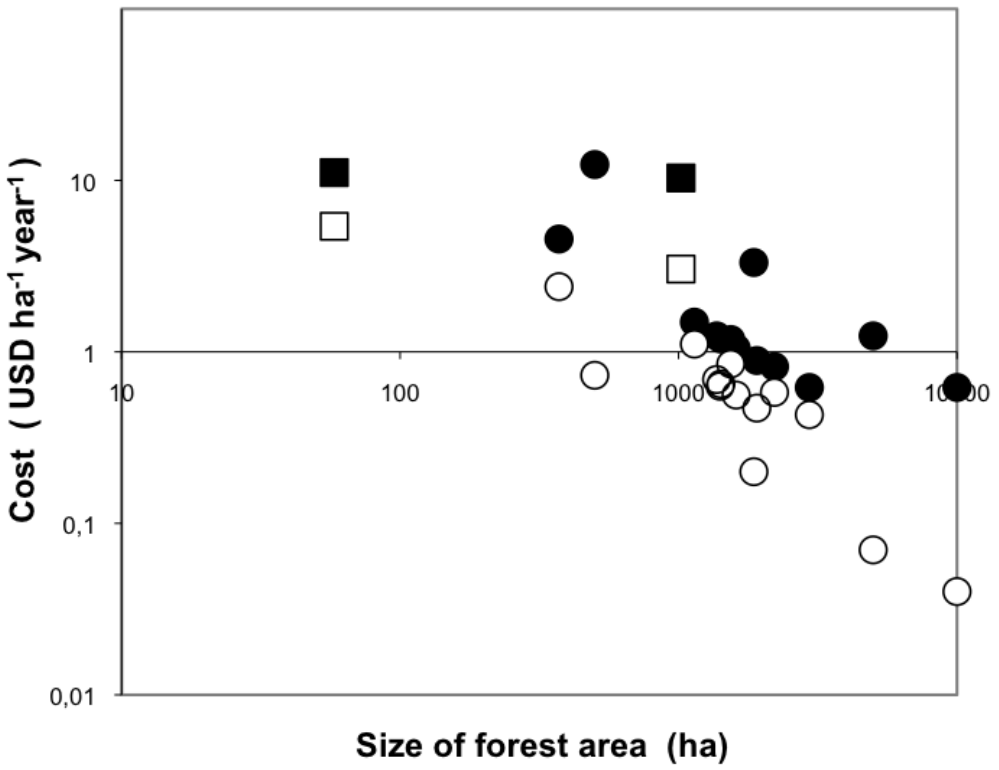


Community vs Scientists: Costs of monitoring

Comparison of the cost of monitoring the condition of forests by local people and trained scientists.

Cost of measurements of woody biomass by community members (□) and professional experts (■) and of cut trees by community members (○) and professional experts (●)

NB - log10 scales.



Community based monitoring

- Local people can collect forest condition data of comparable quality to trained scientists, at half the cost
- Empowering communities to own and monitor carbon stocks could provide a rapid and cost-effective way of absorbing carbon dioxide emissions, whilst potentially contributing to local livelihoods and forest biodiversity conservation

MRV at the local level:

Examining communities‘ capacity to collect local-level data in two villages in the South and Centre Regions, Cameroon

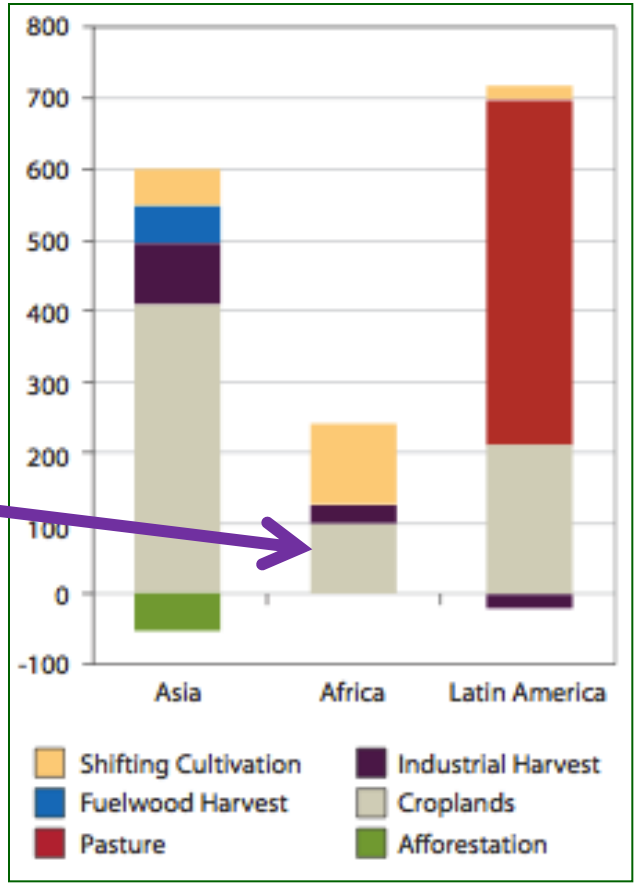
Side event SB34 Bonn 16.06.2011

Gillian Cerbu[1,5], Dr. Denis Sonwa[2], Dr. Benno Pokorny[1], Dr. Jim Gockowski[3], Dr. Stephan Weise[4]

[1]University of Freiburg, [2]CIFOR, [3]International Institute of Tropical Agriculture (IITA), [4]Bioversity International – France, [5]Forest Research Institute of Baden-Wuerttemberg

The Case for data collection performed by local communities

- Synergies with promoting & supporting safeguards
- African context
- Cameroon: Smallholders responsible for 50% of deforestation *as a result of crop cultivation*
- Addressing Defor. Drivers &Trees outside of forests: 'All Lands Approach'

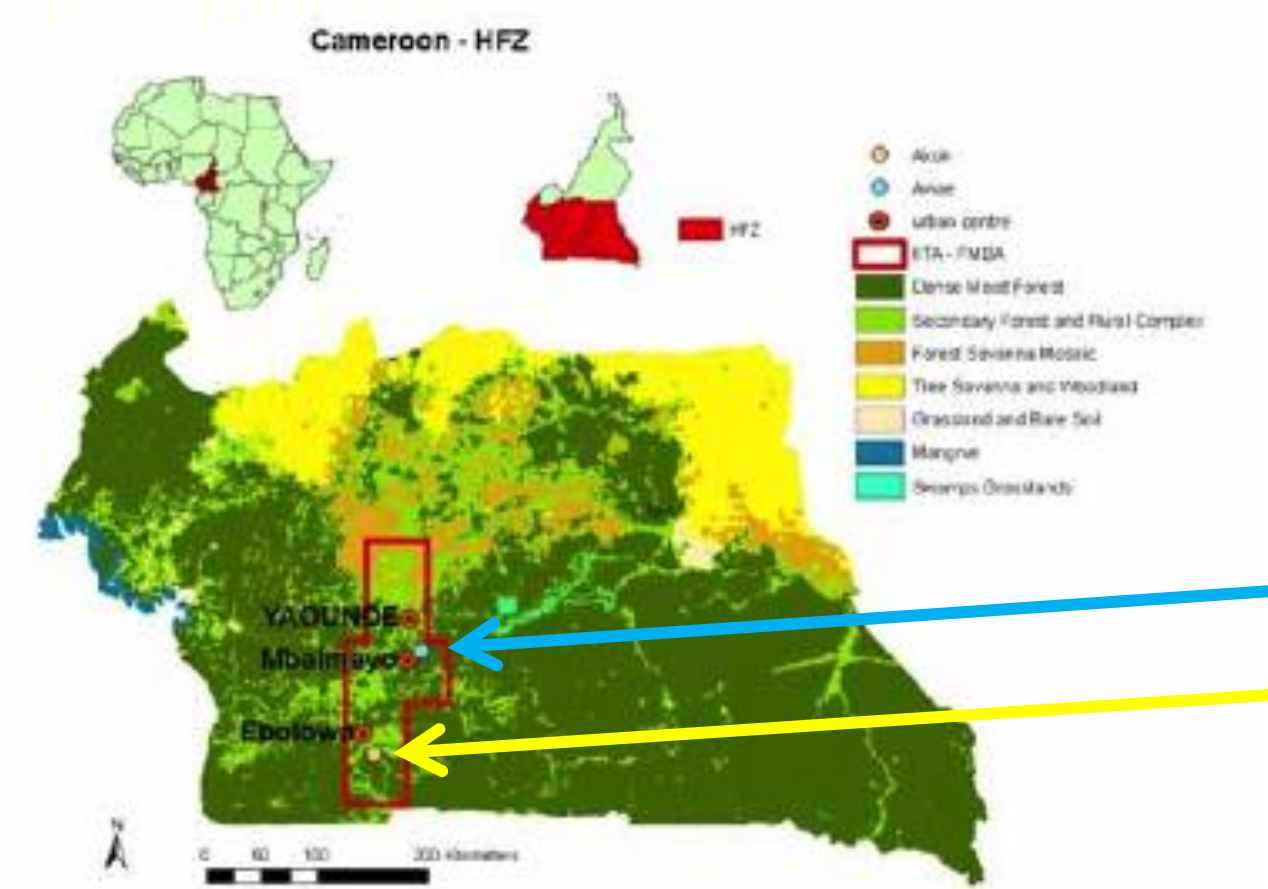


C emissions from tropical deforestation and forest degradation *over the period 1990–2005.*
(UCS 2011; Houghton 2010)

Methods: Individual & small-group key informant interviews

- Questions asked attempted to address these REDD+ Requirements at the local level:
  - Technical
  - Managerial/Organizational (& Project Acceptability)
  - Avoiding Leakage & Addressing Risk
  - Clear Long-term Land Tenure

Context : IITA‘s HFZ Benchmark Sites (villages), South & Centre Regions, Cameroon



Source: Robiglio, 2007

Technical Capacity assessment for MRV

- Potential self-sufficiency in measurement & C accounting:
  - Determining additionality (& local baseline), & C offset potential,
  - Assess ecosystem services,
  - Establish monitoring indicators,
  - Medium- & Long-term monitoring of C
  - Account for leakage & other risks under REDD

Technical Capacity assessment for MRV

- Experience with:
  - Land-use planning & cartography
  - Record-keeping & financial audits
  - (& Access to extension services)
  - Planning within the medium- and long-term
- & High social capital:
  - Many groups and organizations

N°	Nom du Producteur	Village	N° Carte d'identité	Date de naissance	Nombre d'exploitations cacaoyères	Age des exploitations	Superficie totale des exploitations (M² ou Ha)	Production antérieure (2002) en kg ou nombre de sacs	Production potentielle (2003) en kg ou nombre de sacs	Mode de vente
01	Belinga Ndang Ava	Ndanguengi	1001041413	18/06/61	02	82/84	5 ha	294 kg		grumage
02	Nkodo Amougou Jacob	- " -			01	1960	3 ha	195 kg		- " -
03	Mvung Mballa Michel	- " -			01	1962	3 ha	273 kg		- " -
04	Belinga Sothère	- " -	10031618427	1939	01	1970	1,5 ha	90 kg		- " -
05	Amougou Nnomo	- " -	10391143497	1930	01	1967	1/2 ha	62 kg		- " -
06	Amougou Roger	- " -	10316094115	1930	01	1954	3 ha	170 kg		- " -
07	Atangana Foe	- " -			03	38/70	4,5 ha	55 kg		- " -
08	Nguélé Ndi	- " -	10193489 91	10/04/1966	02	1950	4 ha	104 kg		- " -
09	Atangana Charles	- " -	10279281 8	1939	01	1970	6 ha	195 kg		- " -
10	Belinga Messi	- " -			02	64/74	3,5 ha	115 kg		- " -
11	Mbassegue Luc	- " -	10173740 0	24/02/29	01	1970	1,5 ha	215 kg		- " -
12	Tang Ayang	Edzassana			04	52/45	10 ha	1081 kg		- " -
13	Bihina Lucie	- " -			02	1935	4 ha	114 kg		- " -
14	Kono Ava Fabrice	- " -			01	1970	2 ha	97 kg		- " -
15	Ava Guy Tibaut	- " -			01	1986	4 ha	79 kg		- " -
16	Messi Mbarga Raphaël	Ndanguengi	10136210 7	25/11/52	02	42/82	6 ha	153 kg		- " -
17	Mbarga Essissima Vincent	Edzassana			01	1930	5,5 ha	103 kg		- " -
18	Mbarga Essissima	- " -			01	1932	2 ha	217 kg		- " -
19	Mballa Essissima	- " -			01	1930	2,5 ha	261 kg		- " -
20	Mbida Essissima	- " -			01	1930	2 ha	224 kg		- " -
21	Mbassègue Essissima	- " -			01	1930	2 ha	91 kg		- " -
22	Zambo Cyprien	- " -			02	30/69	5 ha	204 kg		- " -
23	Mme Mvondo Lucie	- " -			01	1976	3 ha	204 kg		- " -
24	Mbarga Belinga Pierre J.	- " -			01	1930	1 ha	69 kg		- " -

Example of data collection (record keeping) – cocoa production inventories

Community involvement at the local level for MRV is possible

- Communities in the South & Centre Regions in Cameroon demonstrated the abilities to:
  - Keep longterm records (ha, age, with biomass & C possible)
  - Plan on longer timescales
  - Participate in financial audits (benefit transfers)

Benefits of community-level MRV engagement

- Bottom-up and top-down MRV approaches operating in tandem asset for safeguard reinforcement
- Increased buy-in, effectiveness of REDD+ interventions & efficiency
- Greater involvement of local stakeholders in monitoring = higher likelihood of longterm participation and acceptance
  = higher likelihood of success

Thank you!

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Dr. D. Sonwa, Dr. M. Hanewinkel & Dr. M. Shannon,

IITA's Sustainable Tree Crops & ASB Programmes and staff in Yaoundé

Salaou & Martin and the communities of Awae & Akok for their time

Müller-Fahnenberg Stiftung, University of Freiburg

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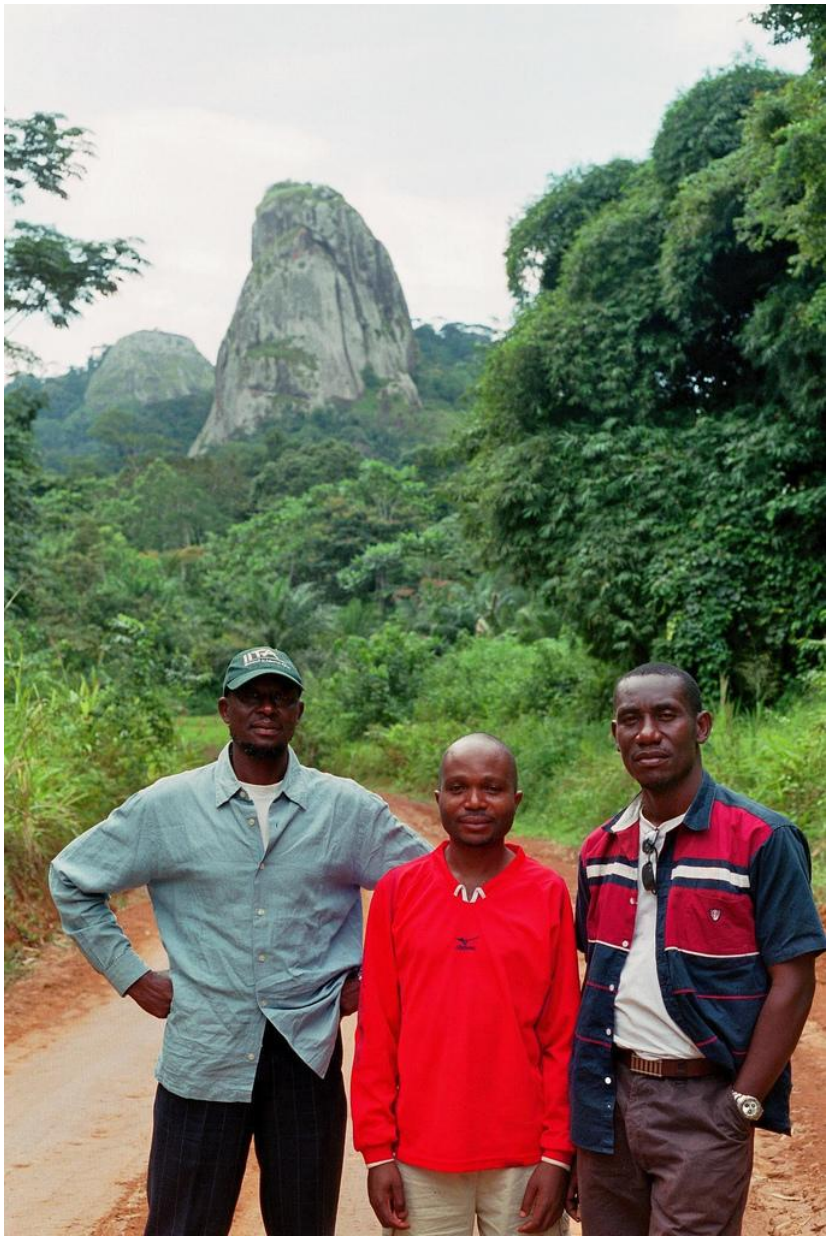


Nesting, distribution of credits and the role of community monitoring

Margaret Skutsch and Arturo Balderas

University of Twente (NL) and

CIGA-UNAM (Mexico)

Nested projects

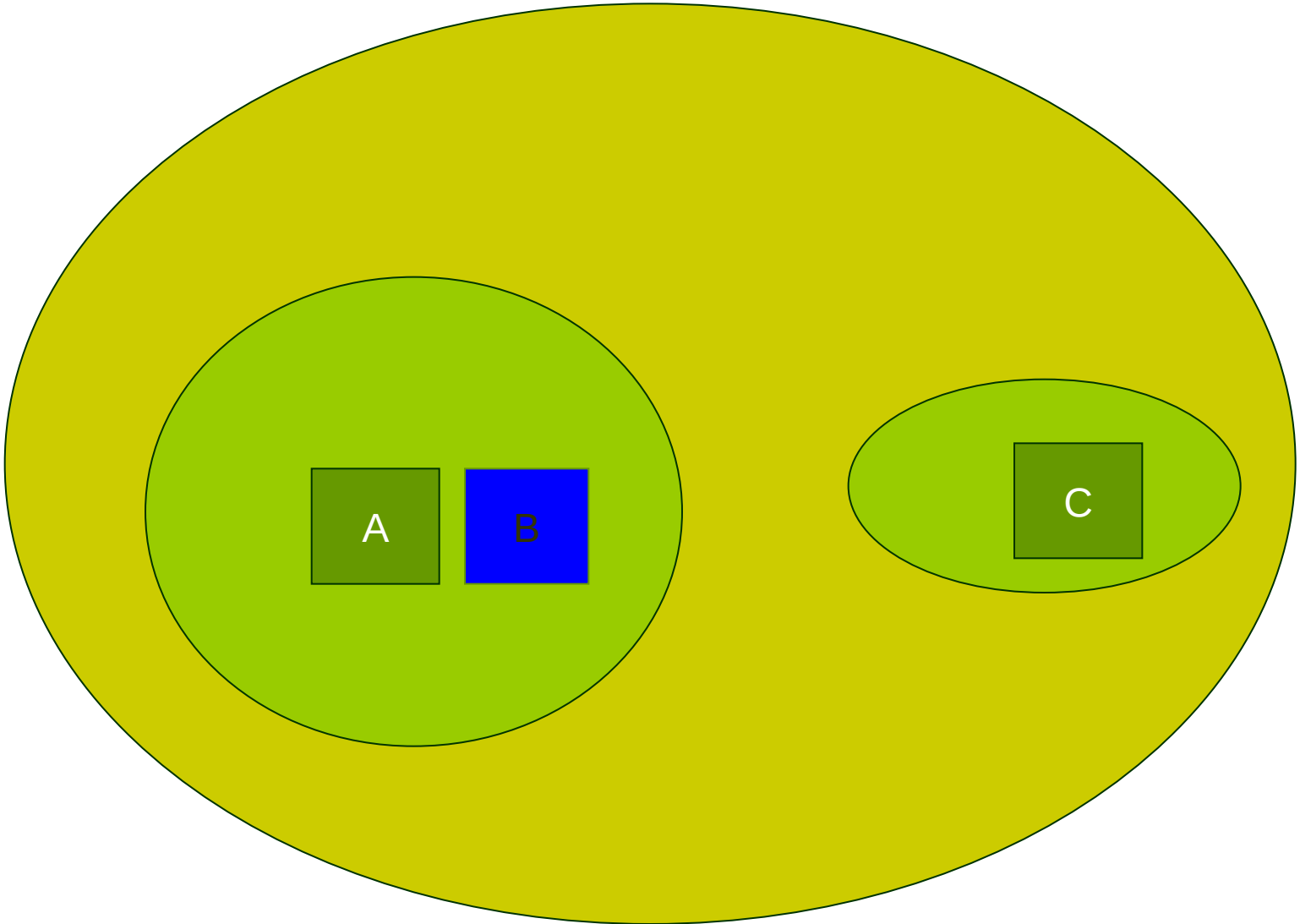
- Performance in REDD+ will be assessed at national (or province/state level)
- The dilemma is: How will individual projects (externally or locally supported) fit into the national accounting system?
- Will national authority claim all the credits or can projects claim credits independently?

Particular concern for local projects which involve communities

- Communities have particular strengths as regards forest management:
  - In densely populated rural areas, where forests are already degraded, CFM is mainly directed to reducing rates of degradation and to forest enhancement, for example by SFM
  - In intact, sparsely populated areas the designation of forests to communities may be an instrument to promote conservation (keeps out outsiders)
  - Strong political movement to ensure communities gain some of the financial rewards of REDD+


ProÁrbol
CONAFOR
COMISIÓN NACIONAL FORESTAL
ado Ejido Ichamio y su Anexo el Tizatal (La Colorinera) participa en
el programa PRO-ÁRBOL
para el pago por servicios ambientales
BIODIVERSIDAD
Superficie 957.19 hectáreas
destinado a la provision y mejoramiento de los Servicios Ambientales Forestales
No está permitido:
• Cazar
• Derribar arbolado
• Dañar el hábitat y/o extraer especies silvestres
• Tirar basura y otros desechos
¡CUIDA LA FLORA Y FAUNA SILVESTRE!

- Example: Forest area (pale green) = 100,000ha, with 3 projects each 10,000ha



	Area	Stock (CO_2e/ha)	REL	Performance under REDD	Reduction (Ha)	Carbon credit
National level	100,000	500	0.85%	0.80%	50	25,000
Project A	10,000	500	1.5%	1.3%	20	10,000
Project B	10,000	500	1.1%	0.8%	30	15,000
Project C	10,000	500	0.3%	0%	30	15,000
Rest of forest estate	70,000			Small losses compared to REL	- 30	-15,000

- Various authors (De Gryze and Durschinger 2010; Cortez et al 2010, Cattaneo 2011) note that:
  - If the country as a whole does not achieve improvements over the REL then no projects can claim credits, even if they are individually successful (major risk factor for projects)
  - The credits need to be ´true-d up´ or ´reconciled´ with the national REL
  - However the mathematics of how to do this are very unclear.

How are we going to deal with the ´missing´ 15,000 tonnes?

- Possible solutions:
  - Deduct them proportionally from each project
  - Deduct them only from the projects under the national subsidy programme (A and C)
  - State has to pay the difference
  - Ignore the difference, allow the projects to claim their full quota of credits
  - Deduct a fix proportion (e.g. 25%) of credits from all projects to cover such losses and help fund the national transaction costs

- Not only are there problems as regards how to distribute the credits
- The distribution problem also implies that all the local RELs accurately sum to the national REL (but we may not have sufficiently good data to do this in the short term)

Alternative approach

- Based on realistic capacity available for MRV and REL construction at national and local level respectively
- And on the fact that there are 5 different aspects that may be included in REDD (deforestation, degradation, forest enhancement, SFM and conservation)

- At national level it is (relatively) easy to establish a REL for deforestation and monitor forest area change
- But almost impossible to establish REL for degradation or to monitor degradation and forest enhancement
- At local project level it does often does not make sense to establish a REL for deforestation, especially in small projects
- But as we have seen, it is possible to closely measure forest enhancement (from a REL of zero) (and it may perhaps be possible to establish a local REL for degradation)

Solution to the distribution of credits question:

- Construct a REL for deforestation at national level
  - All achievements in reducing deforestation are credited to the state
- At local project level, monitor increases in stock and credit to projects (no reference level required, only indication that earlier there was degradation ongoing)
  - All achievements in increasing sequestration are credited to the project
- IF a credible REL for degradation can be established at local project level, projects may claim reduced deforestation credits in addition
- Not yet clear how conservation credits will be awarded…

Advantages

- Transparency of the credits (buyer confidence)
- The separate spheres of influence and rights are clear; provides basis for safeguards of community rights
- Communities wishing to claim credits have to arrange for own measurements; the process is in their own hands (though would have (like all carbon claims) to be verified by independent 3rd parties)

Domestic Institutions for MRV – lessons from CDM experience

Side event SB34 Bonn 16.06.2011

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Research Question

- Under what conditions do CDM projects involving **afforestation** provide significant benefits towards climate change mitigation?

Research Effort

- 3 Countries
  - Tanzania
  - Moldova
  - Uganda
- 3 Project Types
  - Afforestation: 5 projects
  - Bioenergy: 3 projects
  - Cookstoves: 2 projects
- 22 Villages
  - 514 Household Surveys (~25-30 per village)
- 224 Interviews
  - Local
  - District/Regional
  - National
- Policy document review

What's Not Working?

- Difficult to demonstrate additionality of individual projects
  - Project developers unable to know development context outside their project
  - Unable to know how baseline changes overtime → reliance on historical baselines
- Project developers with insufficient capacity for sectoral projects

Tonnes CO_2 Sequestration

CDM Project

No Project

Genuine Carbon Offset

Baseline

1995

2025

Crediting Period

2005
Mill Opened/ Royalties Changed

Tonnes CO_2 Sequestration

CDM Project

No Project

Genuine Carbon Offset

Bogus Carbon Offset

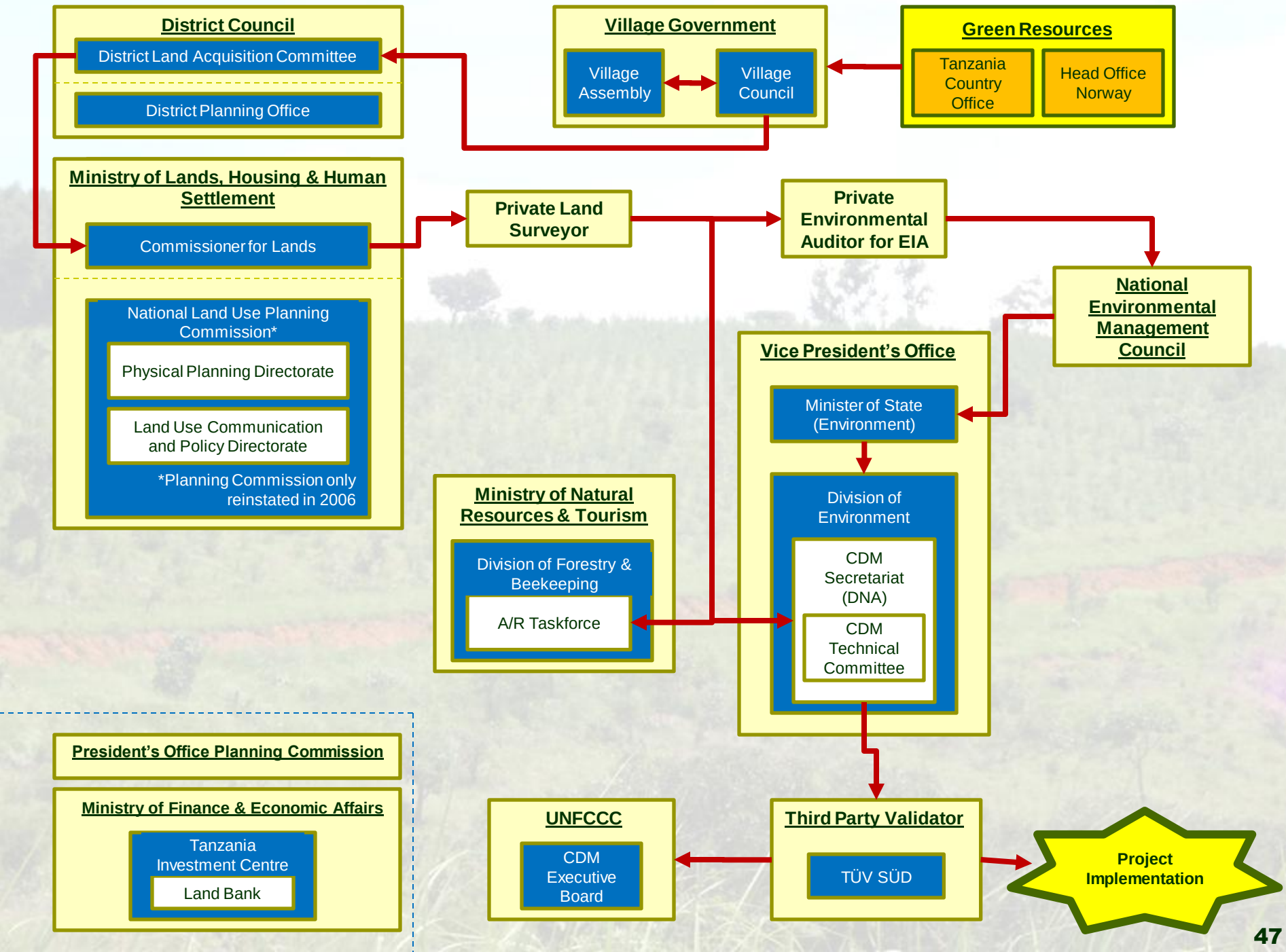
Baseline

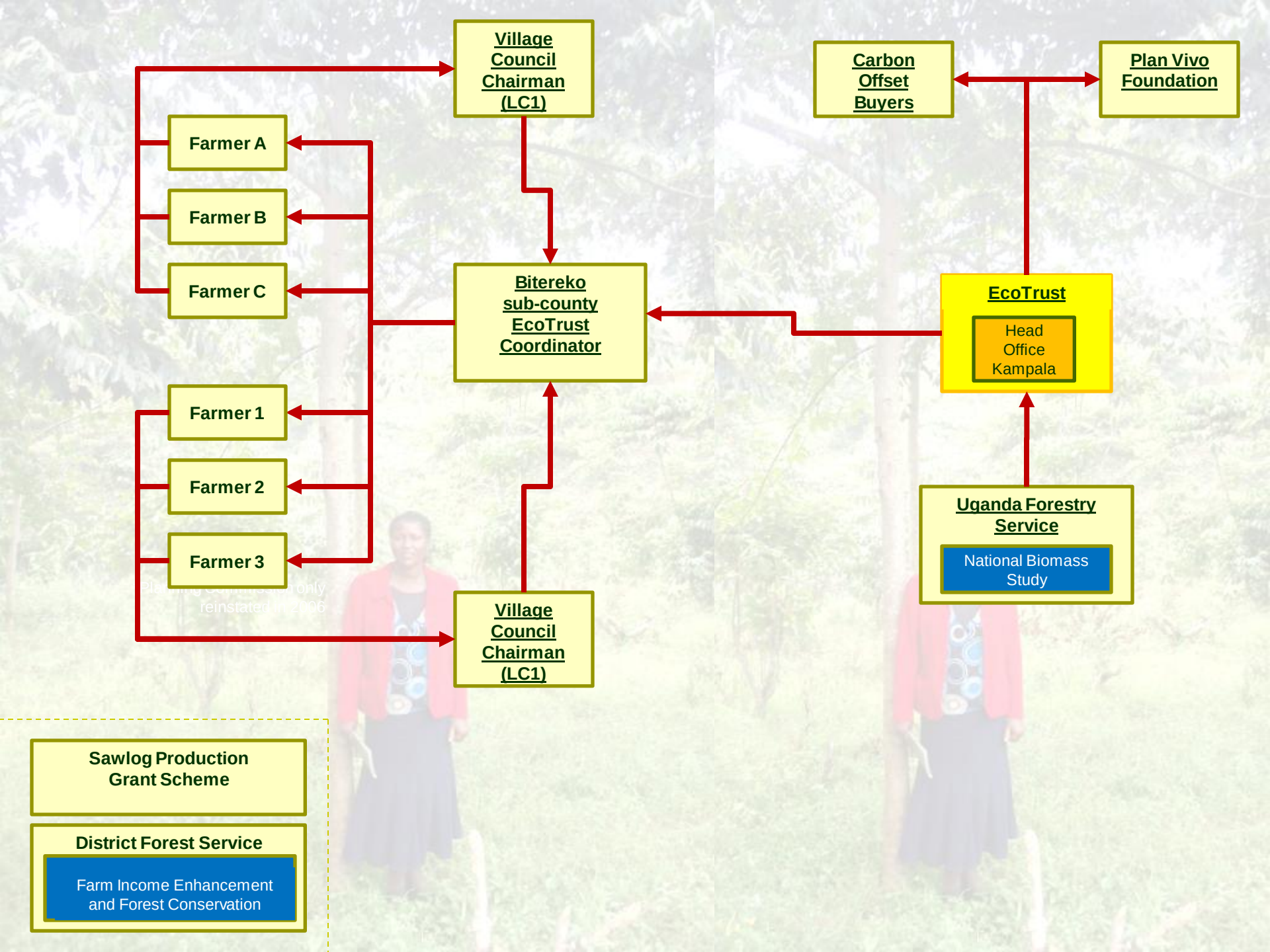
1995

2005

2025

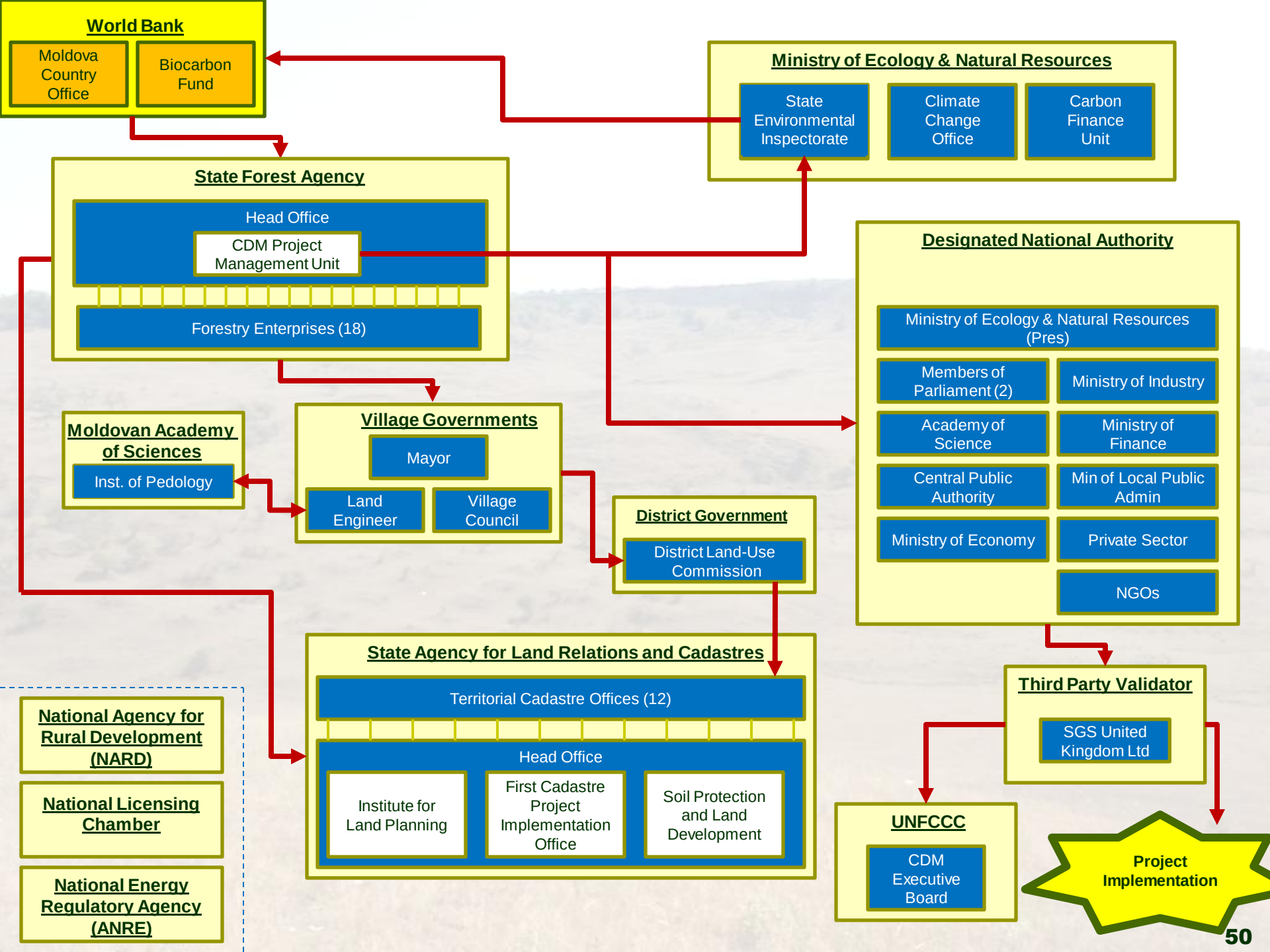
Crediting Period


District Council
District Land Acquisition Committee
District Planning Office
Village Government
Village Assembly
Village Council
Green Resources
Tanzania Country Office
Head Office Norway
Ministry of Lands, Housing & Human Settlement
Commissioner for Lands
National Land Use Planning Commission*
Physical Planning Directorate
Land Use Communication and Policy Directorate
*Planning Commission only reinstated in 2006
Private Land Surveyor
Private Environmental Auditor for EIA
National Environmental Management Council
Vice President's Office
Minister of State (Environment)
Division of Environment
CDM Secretariat (DNA)
CDM Technical Committee
Ministry of Natural Resources & Tourism
Division of Forestry & Beekeeping
A/R Taskforce
President's Office Planning Commission
Ministry of Finance & Economic Affairs
Tanzania Investment Centre
Land Bank
UNFCCC
CDM Executive Board
Third Party Validator
TÜV SÜD
Project Implementation

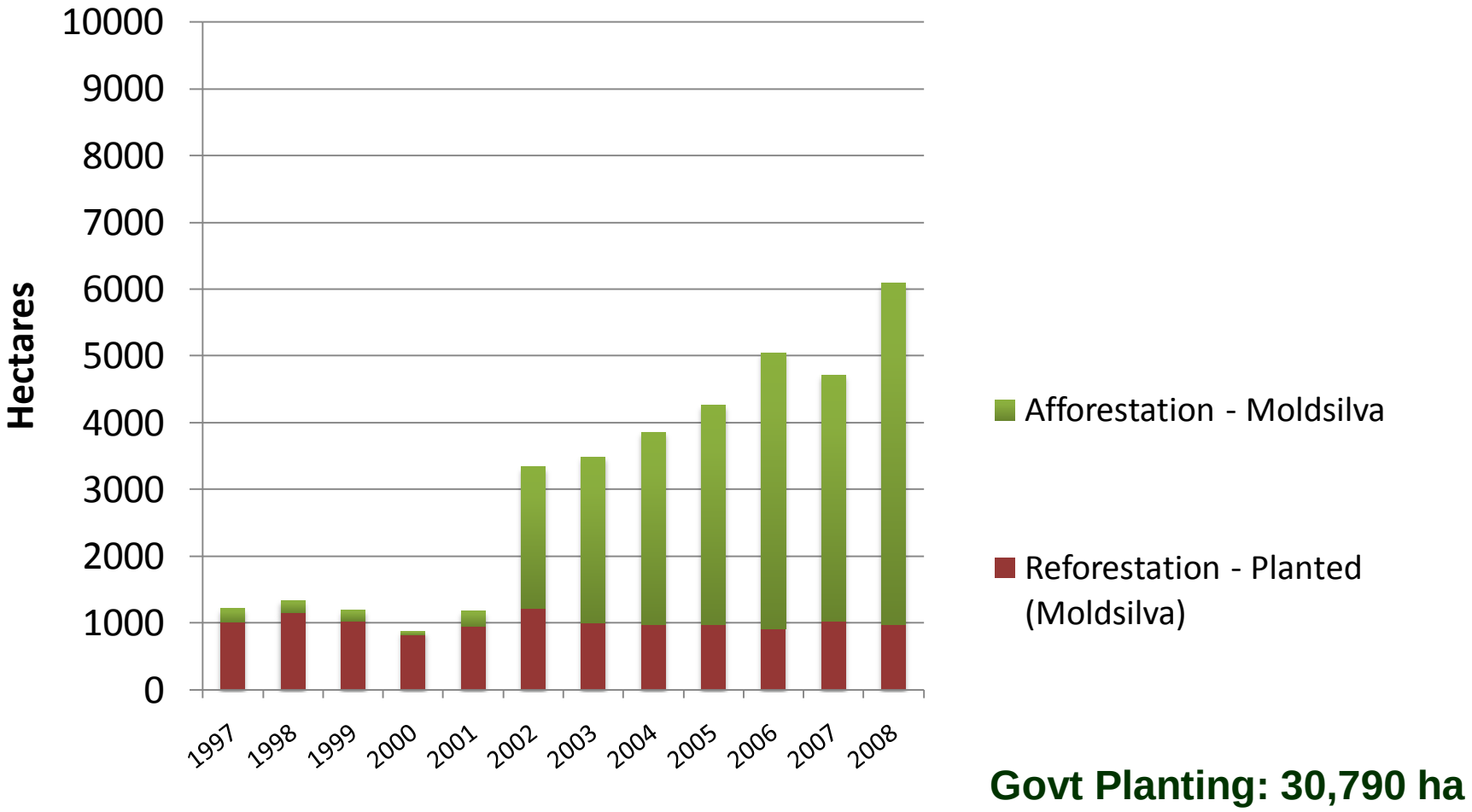

Village Council Chairman (LC1)
Carbon Offset Buyers
Plan Vivo Foundation
Farmer A
Farmer B
Farmer C
Bitereko sub-county EcoTrust Coordinator
EcoTrust
Head Office Kampala
Farmer 1
Farmer 2
Farmer 3
Uganda Forestry Service
National Biomass Study
Village Council Chairman (LC1)
Sawlog Production Grant Scheme
District Forest Service
Farm Income Enhancement and Forest Conservation

What's Working?

- **CDM works when institutions with sectoral capacity are responsible for implementing projects**
  - **Moldova afforestation project**
    - Villages across country → determines land availability
    - State Forest Agency → implements CDM project and monitors project
    - National Land Cadastral system → retains baseline info

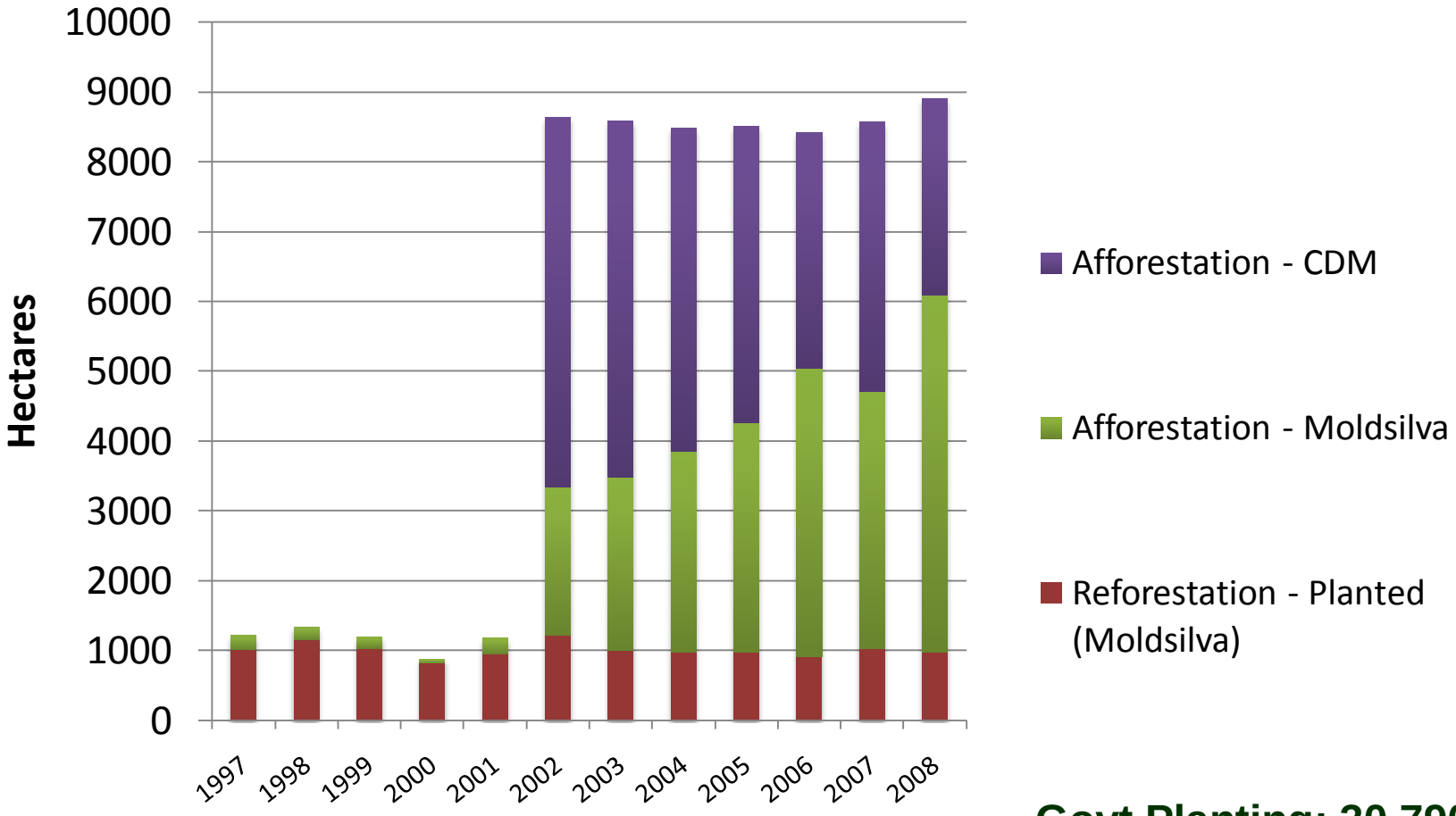

World Bank
Moldova Country Office
Biocarbon Fund
Ministry of Ecology & Natural Resources
State Environmental Inspectorate
Climate Change Office
Carbon Finance Unit
State Forest Agency
Head Office
CDM Project Management Unit
Forestry Enterprises (18)
Designated National Authority
Ministry of Ecology & Natural Resources (Pres)
Members of Parliament (2)
Ministry of Industry
Academy of Science
Ministry of Finance
Central Public Authority
Min of Local Public Admin
Ministry of Economy
Private Sector
NGOs
Moldovan Academy of Sciences
Inst. of Pedology
Village Governments
Mayor
Land Engineer
Village Council
District Government
District Land-Use Commission
State Agency for Land Relations and Cadastres
Territorial Cadastre Offices (12)
Head Office
Institute for Land Planning
First Cadastre Project Implementation Office
Soil Protection and Land Development
Third Party Validator
SGS United Kingdom Ltd
UNFCCC
CDM Executive Board
Project Implementation
National Agency for Rural Development (NARD)
National Licensing Chamber
National Energy Regulatory Agency (ANRE)

Moldova Afforestation Context



Govt Planting: 30,790 ha

Moldova Afforestation Context



Govt Planting: 30,790 ha

CDM Planting: 29,324 ha

60,114 ha

Lesson learned about CDM

- **The CDM performs better when existing state institutions are involved with project implementation**
  - Already sufficient domestic institutions for sustainable development evaluation
  - Creating new institutions can create bottlenecks and opportunities for rent-seeking
- **Necessary for state institutions to articulate with community MRV for determining land availability**
- **However, these domestic institutions are NOT cultivated through the CDM** which has established its own institution to regulate CDM, known as the DNA

Implications for REDD+

- **Need to create separate institutions for collecting baseline information and those for project implementation**
  - **Cultivate institutions with sectoral capacity for project implementation and information management**
  - **Transfer regulatory authority to existing institutions**
    - State Forest Agency, Ministry of Lands, etc.
- **National MRV institutions compatible with community MRV**
- **Build greater sustainability safeguards into existing institutions**

Thank you!!

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