The likely REDD implementation through Community Forest Management in Tanzania

Experiences from

Kyoto: Think Global Act Local Research Project

www.communitycarbonforestry.org

Introduction

- Kyoto: Think Global, Act Local (K:TGAL)
  - research and capacity building program,
  - financed by the Netherlands Development Cooperation,
  - investigate the possibilities and potential for CFM of existing natural forest to be included as an eligible carbon mitigation activity

- Measure the extent to which CFM practices:
  - increase sequestration in existing forests and
  - reduce emissions of CO_2 by avoiding deforestation and degradation.

- Involves research teams in four regions:
  - East Africa,
  - West Africa and
  - the Himalayas

Introduction

- Forest carbon trading: the CDM of the KP of the UNFCCC
- CDM is limited to afforestation and reforestation projects only till 2012
- But 20-25% of current annual carbon emissions are the result of loss of tropical forest
- This prompted re-negotiation of climate change policy for the post 2012 to include REDD
- REDD: a developing country which is experiencing deforestation may, on a voluntary basis, receive compensation if it reduces its national deforestation rate, in proportion to the amount of carbon emissions that are reduced.

TZ Forest extent

- Tanzania: Total area 94.5 million ha
- Forestland of 34 million ha:
  - 16 million are reserved forests,
  - 2 million hectares are forests in national parks and
  - 16 million hectares (47% of all forestland) are unprotected forests in general lands.
- Deforestation: 130,000 to 500,000 ha per yr in the general land forests.

CFM in Tanzania

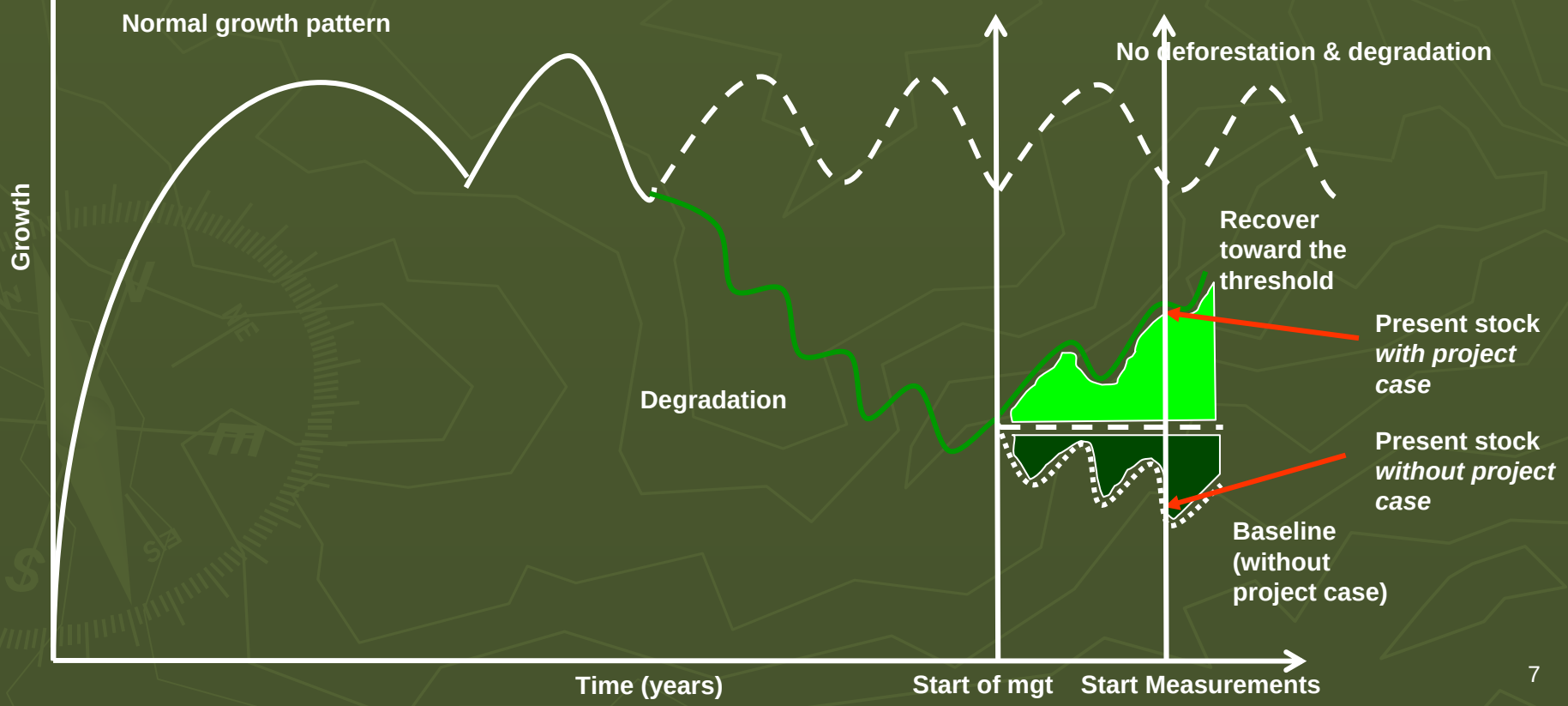
- Started in 1980's
- CFM retard deforestation in unreserved forestland
- They transform unsustainable management of existing natural forests, to sustainable management
- However, only 11% of the country's forests are under CFM due to lack of funds and capacity.
- Can REDD policy be used to provide tangible incentives & promote CFM?

Components of REDD

- REDD credit = Country improvements Vs baseline scenario
- Deforestation baselines
  - loss of forest area, that is, complete land use change: use historical trends of forest area changes, RS
- Degradation baselines
  - loss of biomass stock within a forest: No data available
- Enhancement baselines
  - Incremental change in biomass stock within a forest: No data available

Individual projects e.g. CFM

- Should determine and monitor carbon stocks
  - With project case: to determine the rate of recovery
  - Without project case: to determine the rate of degradation



Forest Carbon Assessment & Monitoring by Local Communities

- Strategy to involve local communities in order to reduce the transaction costs of measuring carbon
- Local communities in 4 locations were trained and tasked to conduct the measurements
- Techniques were developed to measure and monitor carbon stock.
- They are:
  - User friendly to the users - i.e.to the communities
  - reliable and
  - presented in a format acceptable to the scientific community

The equipment

Consists of:

- A handheld computer with ArcPad™ 6.0 software and connected to GPS
- It is easy to use
- Is used to locate:
  - forestry boundaries
  - sample plots and
  - recording measurement data

- With a step-by-step guide to the procedures, local communities were trained in a short time and were able to use the system effectively

Steps in Carbon Assessment

i. Forest mapping/stratification

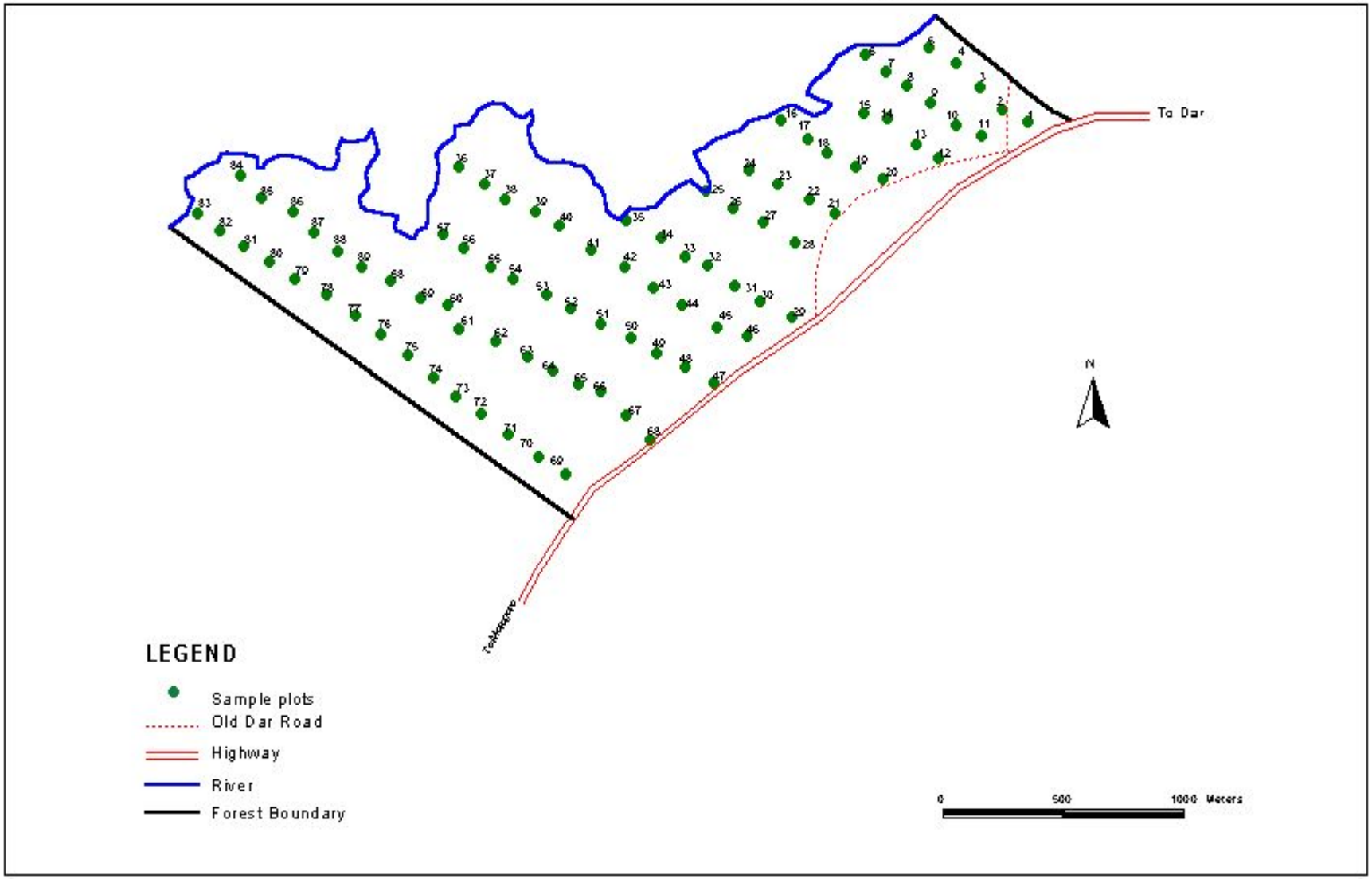
ii. Pilot survey to estimate variance and number of sample plots

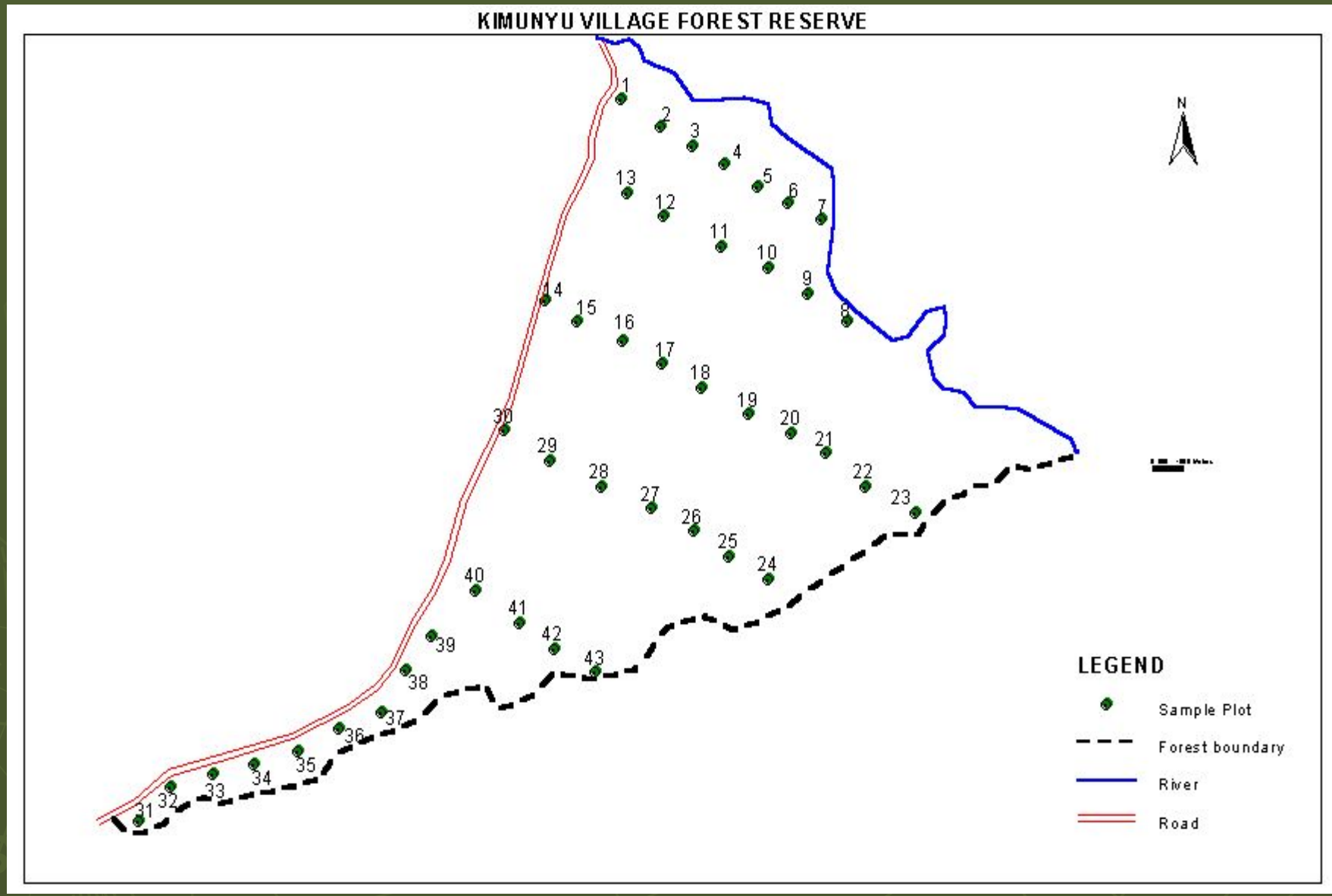
iii. Locate the sample plots on the ground

iv. Measure the dbh of all trees

v. Set out the sub-plots for the grasses, herb and litter data

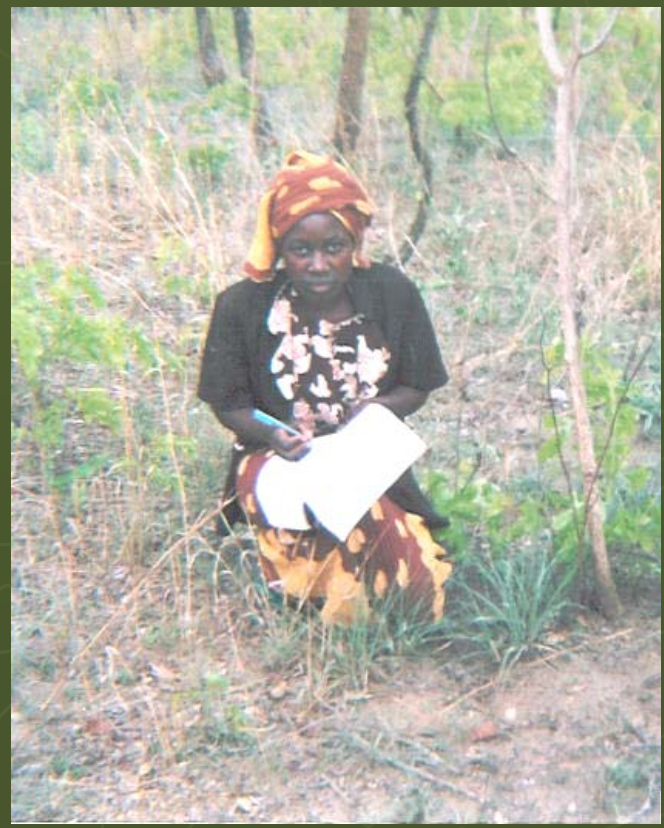
vi. Take soil samples randomly within the plot


KITULANGALO SUA TRAINING FOREST RESERVE
To Dar
N
LEGEND
Sample plots
Old Dar Road
Highway
River
Forest Boundary
0
500
1000 Meters


KIMUNYU VILLAGE FOREST RESERVE
N
LEGEND
Sample Plot
Forest boundary
River
Road

Locating sample plots on ground

Measurements taken from the plot



Data analysis

The following trees stand parameters were computed:

- Density i.e. the number of stems per ha (N)
- Basal area per hectare (Dominance)(G)
- Volume per ha (V) and
- Dry biomass / carbon (tones per ha)

➢ Trees volume and biomass were computed using tested local existing allometric functions for the areas.

➢ Computation were fitted on Ms Access database

Results

With Project Case						
Vegetation type	Location	Average annual increment (t/ha/yr)	CO2 sequestration (tCO_2/ha/yr)	Forest Area (ha)	Total sequestration (tCO_2/ha/yr)	
Woodlands	Kitulangalo	2.8	5.3	600	**3,180**	
	Ayasanda	1.7	3.2	550	**1,760**	
Lowland	Ludewa	4.4	8.3	28.5	**237**	
Montane	Mgambo	5.2	9.8	156	**1,760**	
Without Project case						
Vegetation type	Location	Average biomass loss (t/ha/yr)	Average CO_2 Emissions (t/ha/yr)	Forest Area (ha)	Total CO_2 Emissions (tCO_2/ha/yr)	
Woodland	Kitulangalo	1	1.8	600	**1014**	
Montane	Mgambo	3.5	6.5	156	**1080**	

Cost per Year

Activity	If carried out only by Professionals		If Carried out by Local Communities with Little Assistance from Professionals				
	No. of Days	Cost (€)	No. of Days	Cost (€)			
				1st Year	2nd Year	3rd Year	4th Year
1. Pilot Planning / Training	3	426	10	1,510	755	302	-
2. Field Assessments							
- Univ. FR	10	1,620	10	1,510	960	740	310
- VFR	6	972	6	906	576	466	186
- Control	5	810	5	755	425	315	155
3. Data analysis	10	1,500					
4. Cons. Fees	34	4,080					
5. Inst. Fees		940.8					
Total	**34**	**10,349**	**31**	**4,681**	**2,716**	**1,823**	**651**
Cost per ha		**10**		**5**	**3**	**2**	**1**

Conclusion

- REDD should be developed in such a way that:
  - avoidance of deforestation,
  - avoidance of degradation and
  - forest enhancement are included
- Since forests under CFM are efficient in carbon storage and sequestration:
  - governments are argued to consider CFM as part of their approach under REDD
- Since there are no data on carbon stocks:
  - studies on forest inventories using methodology such as that developed by K:TGAL are recommended

The End!

Thank You