

Carbon Project Concepts

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International

Promoting Transformation by
Linking Natural Resources,
Economic Growth, and
Good Governance



USAID
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Key carbon trading concept:

- *Reduce* GHG emissions (or *enhance removals* by sinks) in one country to permit an *equivalent* quantity of GHG emissions in another country, without changing the global emission balance.



Basic requirements of emissions reductions or removals

- Create “*real, measurable, and long-term* benefits related to the mitigation of climate change”
- Be “*additional* to any that would occur in the *absence* of the certified project activity”
- Be *certified* by independent third party entities



Basic requirements of emissions reductions or removals

- Real, measurable → Monitoring (methodology + plan)
- Long-term → Emissions savings should be permanent or effectively permanent
- Additional → BAU activities not eligible, must be human-induced
- In absence of project → Baseline (methodology+ assessment)
- Certified → Validation, Verification, and Certification by accredited entity



Additionality



Additionality

- Biological additionality
- Legal additionality
- Financial additionality



Additionality—key step

- A project activity is additional if the activity only takes place **because of the anticipation of a potential sale of carbon credits**
 - e.g. Activity such as forest restoration would not have taken place without outside funds paying for the planting, etc. in anticipation of receiving carbon offsets



Additionality Tests

- Investment analysis
- Barriers analysis
- Common practice analysis



Baselines



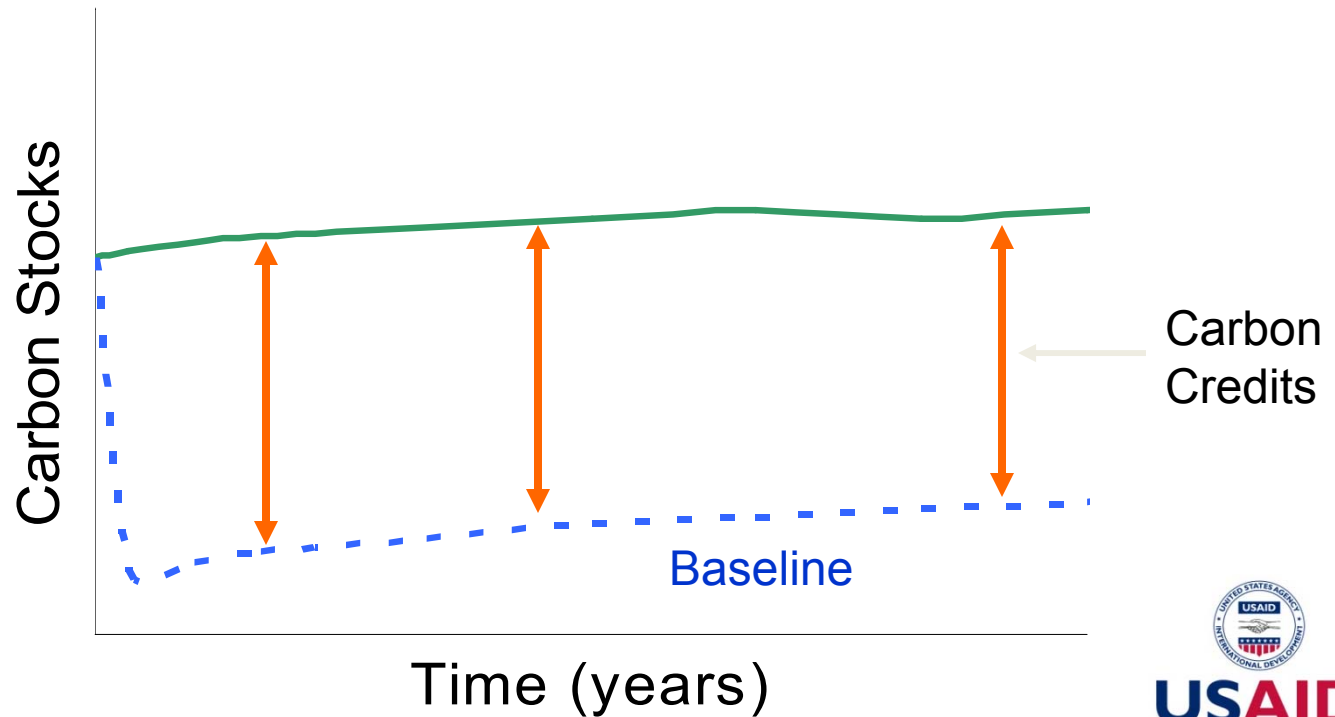
Baselines

- What would have happened in the absence of the CDM project activity
- Must be *project specific* and prepared in a *transparent* and *conservative* manner



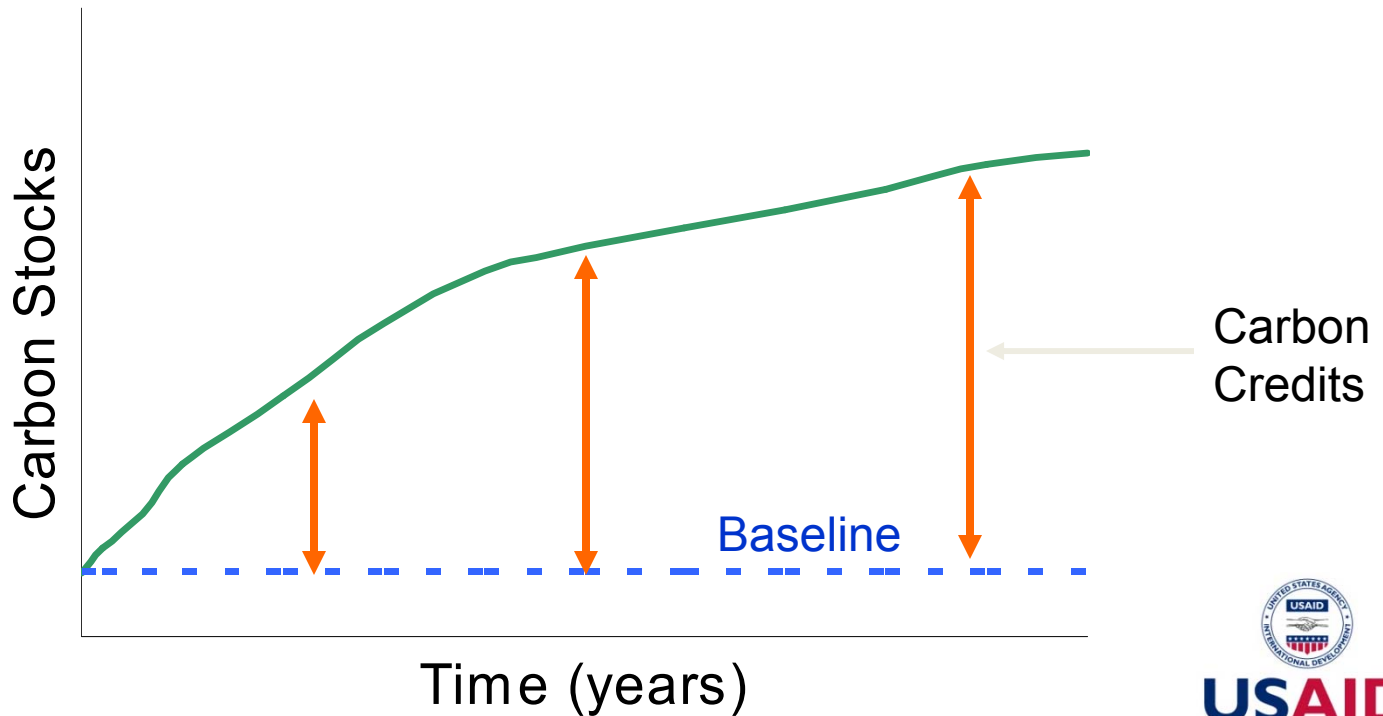
Baselines – avoided emissions example:

- Credits from a project is:
Difference between C stocks with
project and baseline C stocks



Baselines – A/R example:

- Credits from a project is:
Difference between C stocks with project
and baseline C stocks



Baselines - three approaches

1. Existing or historical changes in stocks in the carbon pools within the project boundary
2. Changes in stocks in the carbon pools within the project boundary from a land use that represents an economically attractive course of action
3. Changes in stocks in the pools within the project boundary from the most likely land use at the time the project starts.



Leakage



Leakage

- Leakage is the unanticipated loss in carbon benefits outside of the project's boundary as a result of the project activities
 - Carbon emissions from leakage could offset gains from a carbon project, resulting in a reduction of the carbon “credits”



Leakage: activity shifting

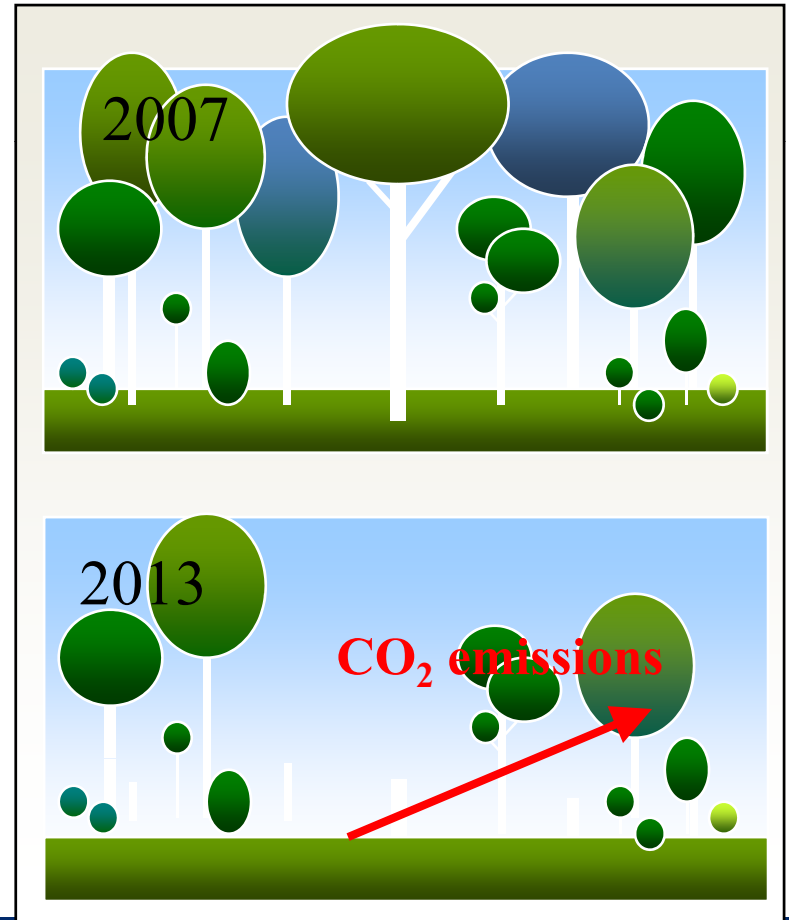
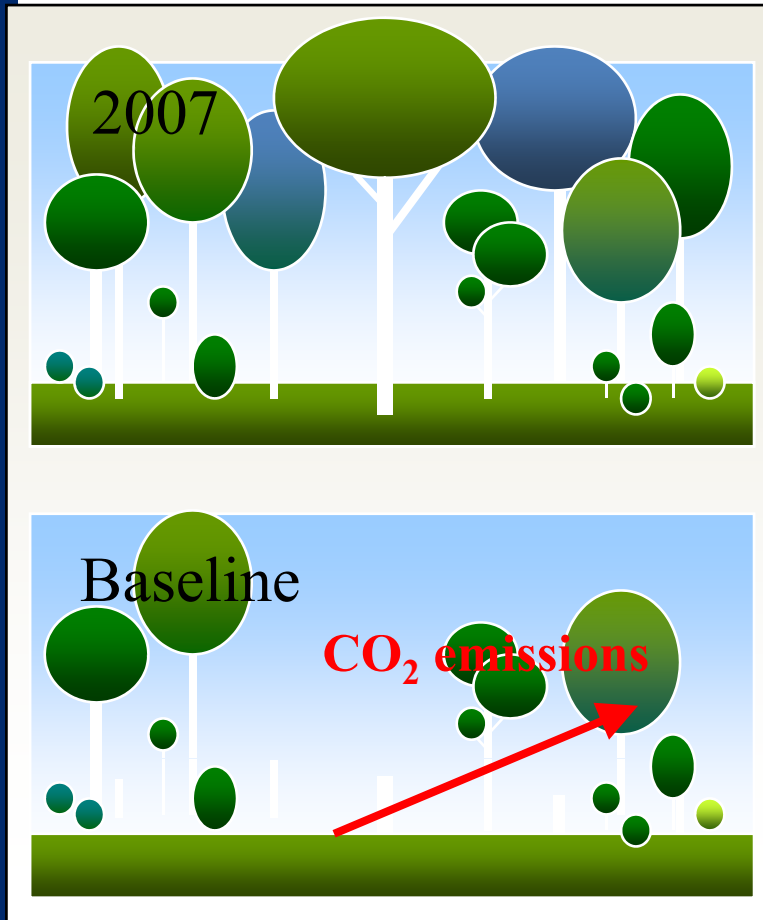
- Activity shifting: activities that would have occurred inside project area occur in another location outside of project area
- Can be minimized by engaging communities in project and providing alternative lifestyles
 - E.g.—reforest with multi-purpose tree species, employ people to plant and maintain



Leakage – avoided emissions example

Project Area

Nearby the Project Area

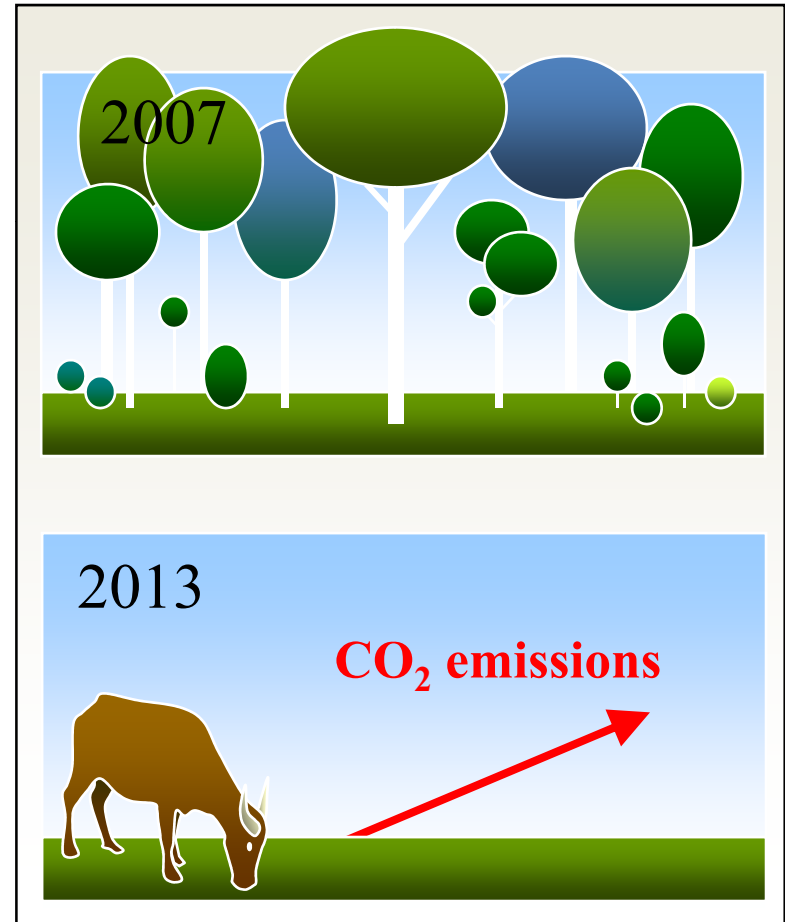


Leakage – A/R example

Project Area

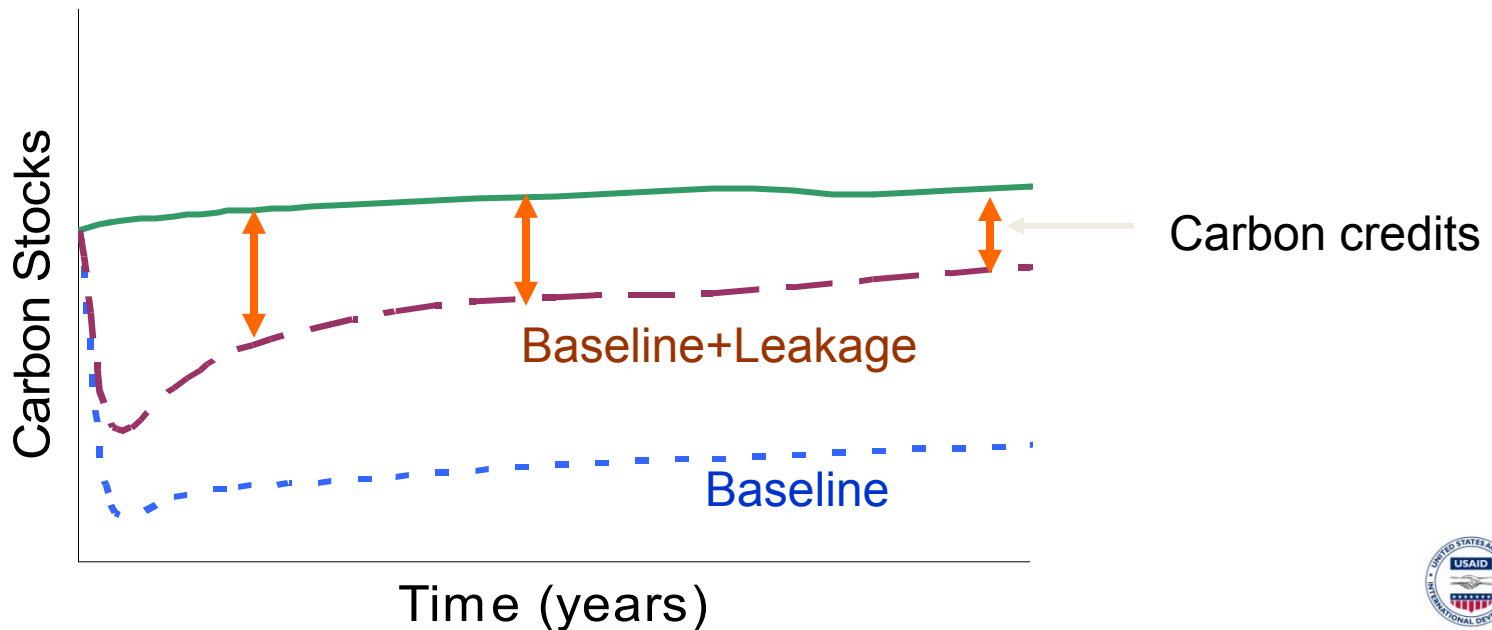


Nearby the Project Area



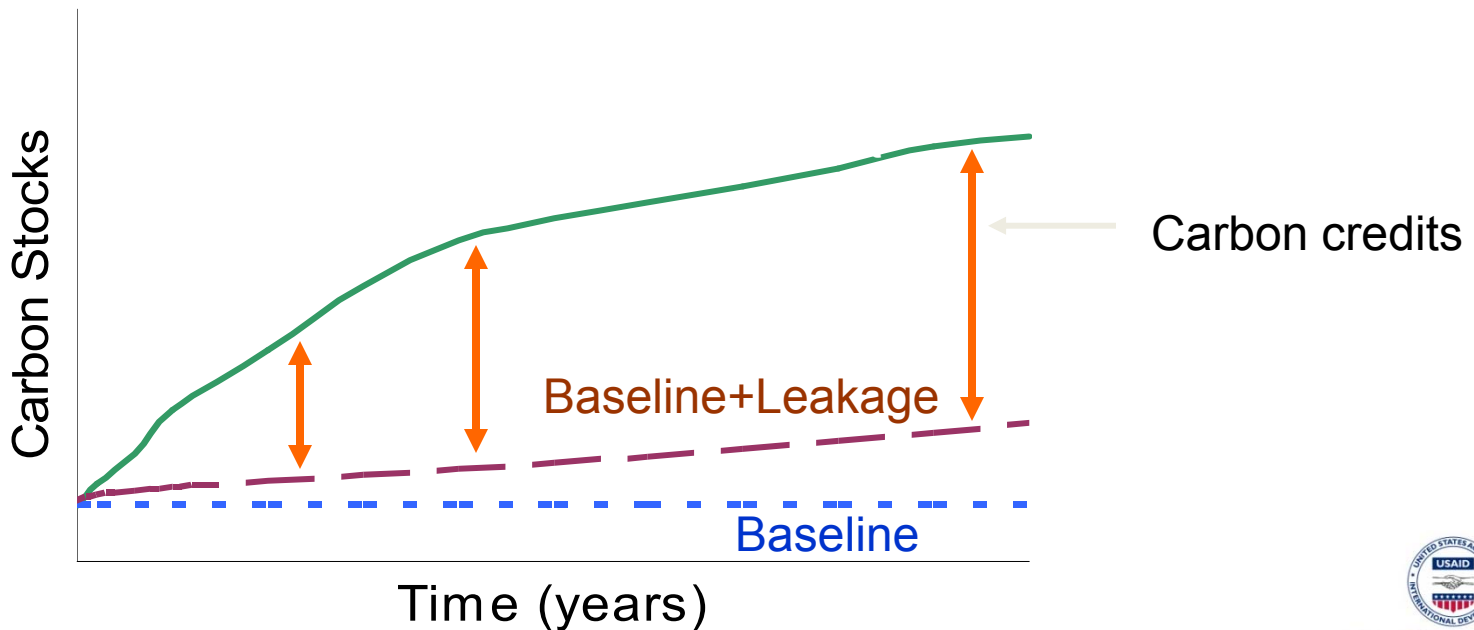
Leakage – avoided emissions example

- Carbon credits
= Project – Baseline – Leakage
- Put in place measures to reduce leakage



Leakage – A/R example

- Carbon credits
= Project – Baseline – Leakage
- Put in place measures to reduce leakage



Leakage

- Vehicle and machinery use
- Displacement of fuel wood collection
- Market effects
- Investment crowding-in
- Investment crowding-out



Permanence



Non-permanence

- Land-based systems subject to reversal by human and natural disturbances
- Addressed by concept of “rental” of the service
- For CDM project two options exist:
 - temporary certified emission reduction units (tCER)
 - long-term certified emission reduction units (ICER)



Non-Permanence

- VCS
 - VCS has a buffer, a proportion of the credits are held in the buffer as an insurance against non-permanence
 - More “risky” the project the larger the buffer
 - As the project proves itself through time the buffer can be decreased
- Legal guarantees in US-based standards

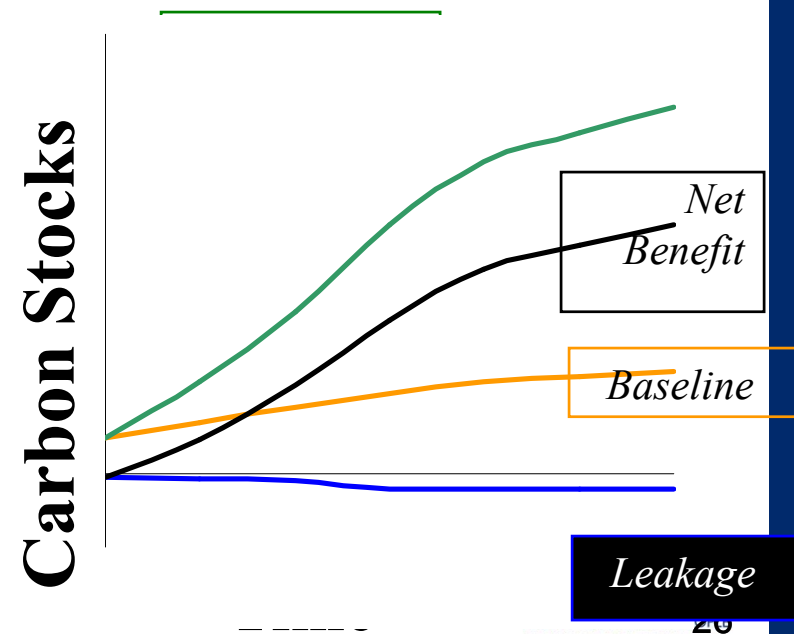
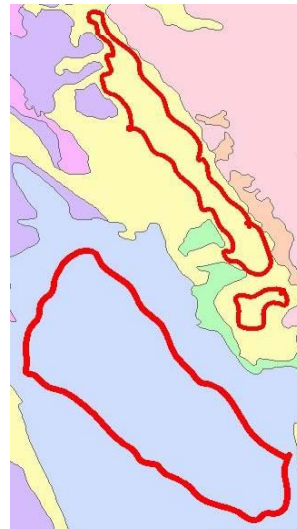
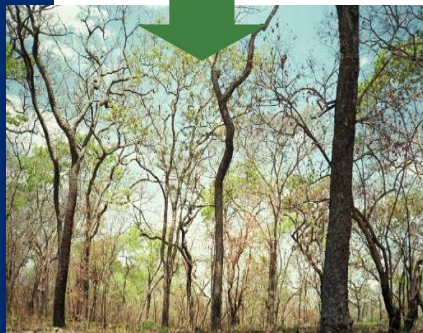


Concepts Summary



Carbon in Land Use and Forestry

- ‘Carbon project’ = altering the land management in specific area → results in quantifiable greenhouse gas emission reduction or sequestration

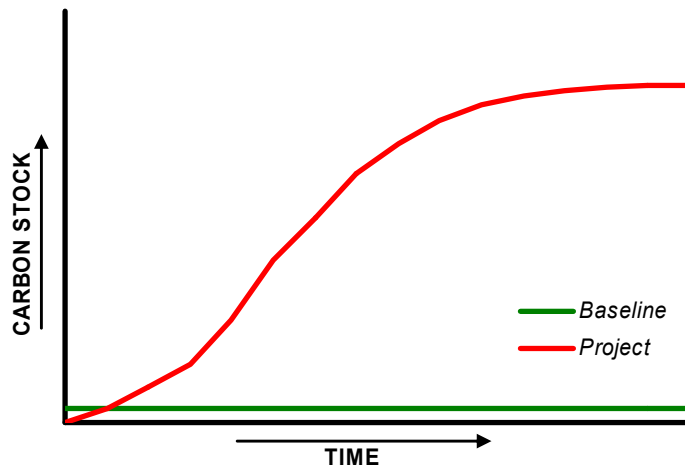


Potential Project Types



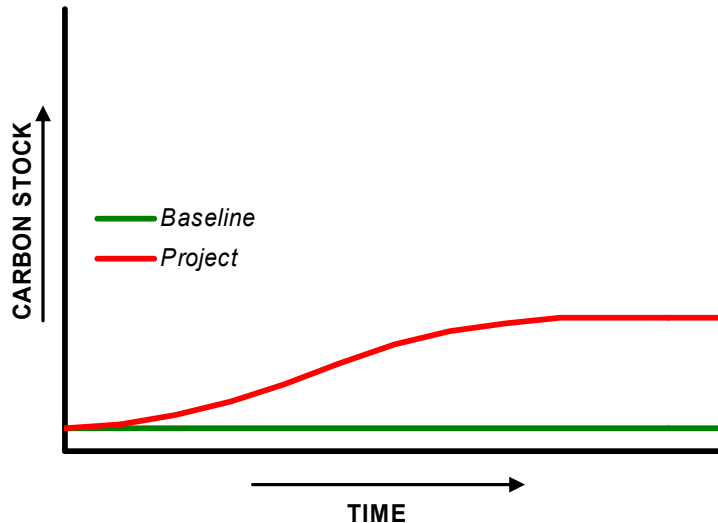
Carbon Project Types

- Afforestation/reforestation
 - Native vegetation restoration
 - Agroforestry
 - Industrial plantation
 - Community woodlot

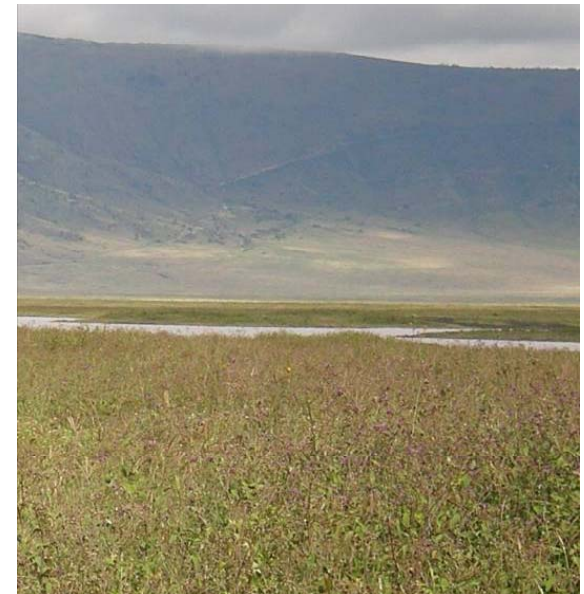
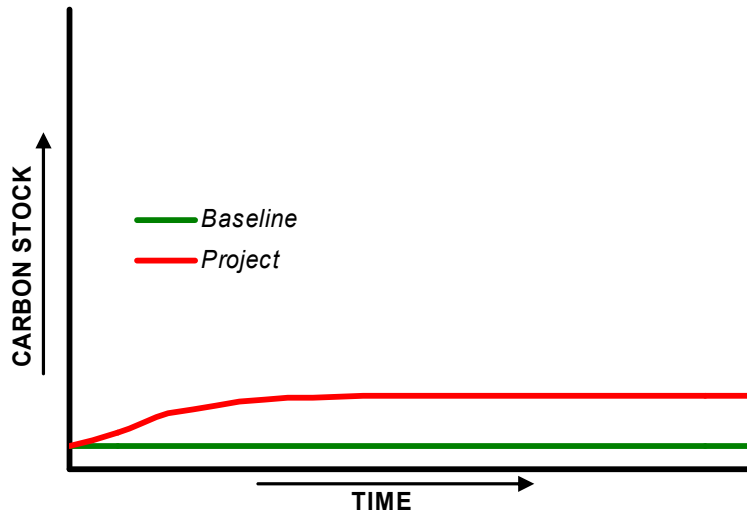


Carbon Project Types

- Non-forest woody tree planting
 - Planting that does not result in a ‘forest’
 - Windbreaks, living fences, around houses
 - Scrubland restoration

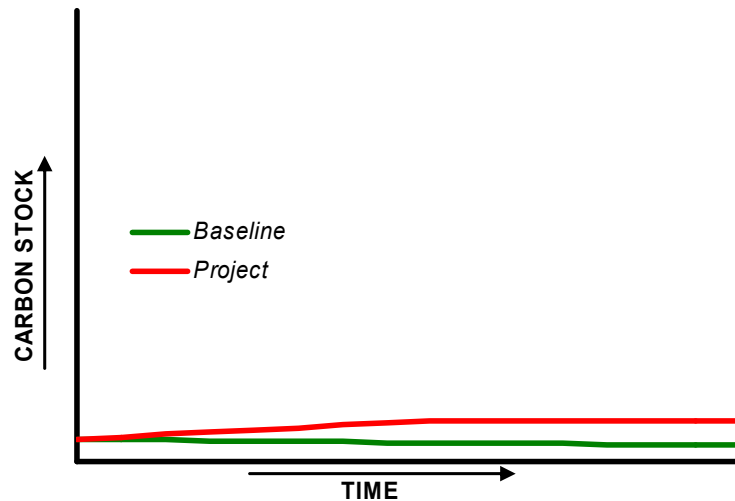


- ## Carbon Project Types
- Grassland and grazing lands
 - Native species restoration
 - Improved grazing management



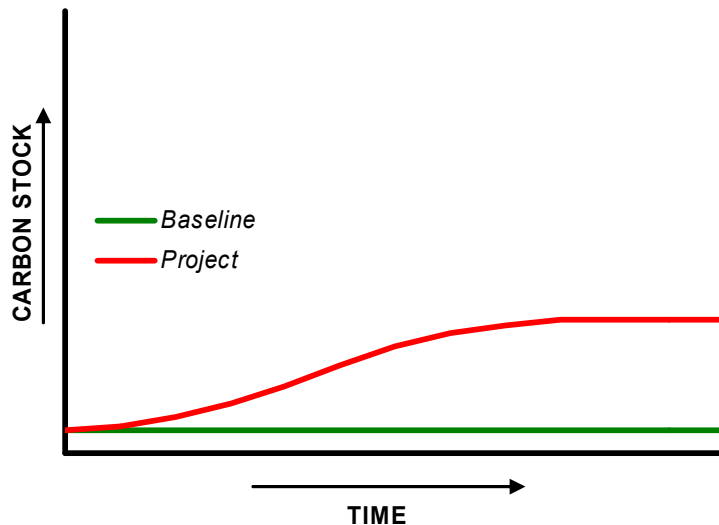
Carbon Project Types

- Reduced tillage
 - Minimal cultivation
 - Levels off after about 20 years
 - Must be continuous



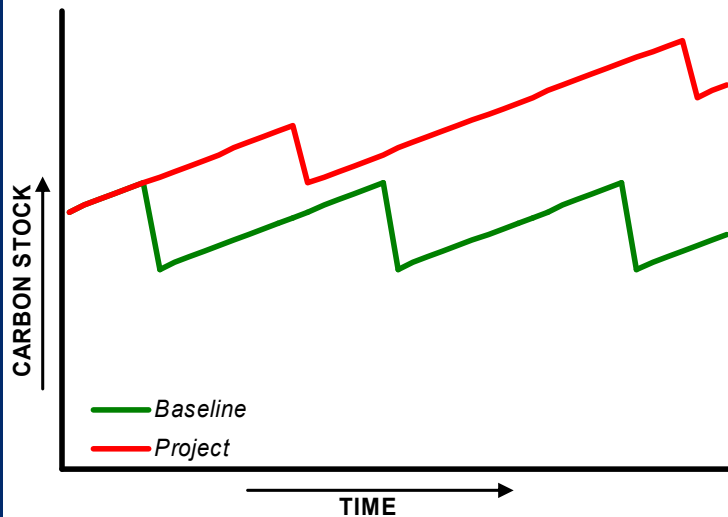
Carbon Project Types

- High Carbon crop
 - Fruit or nut orchard
 - Vines
 - Tea, coffee



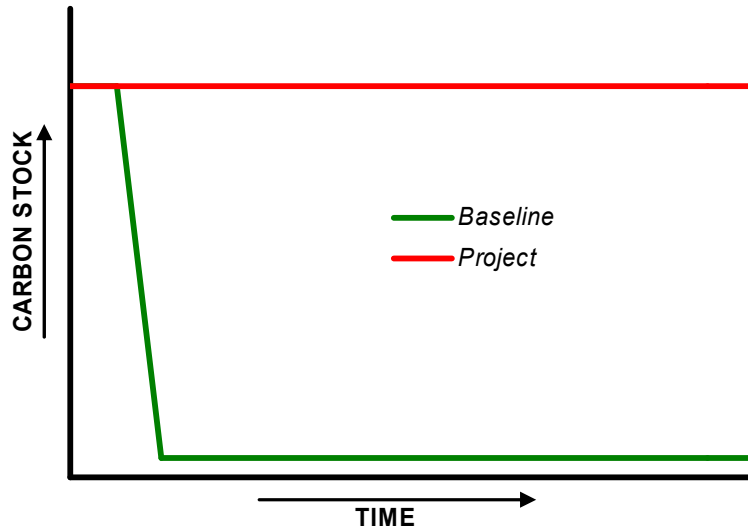
Carbon Project Types

- Reduce fire frequency, extent, or intensity



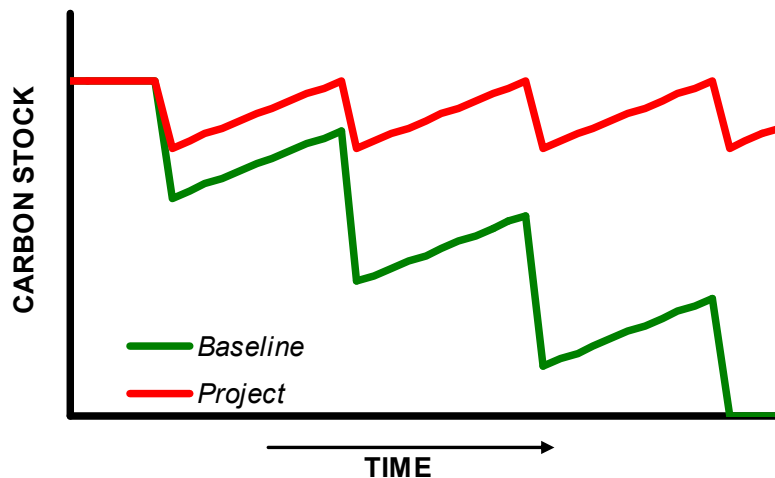
Carbon Project Types

- Reduce deforestation from land use change



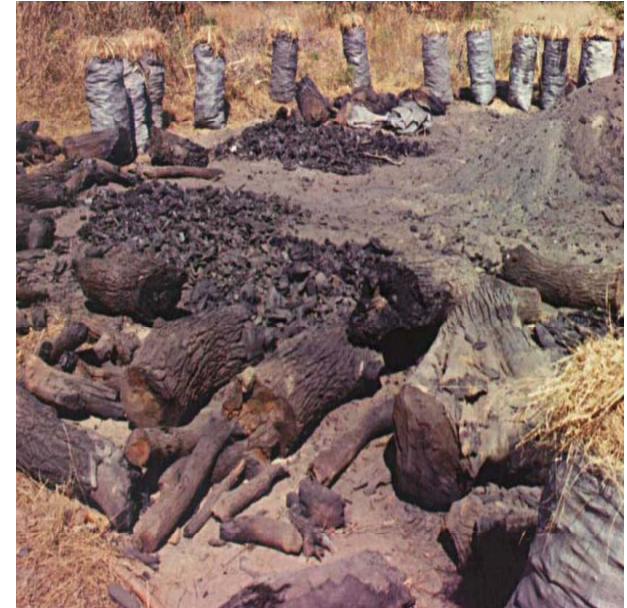
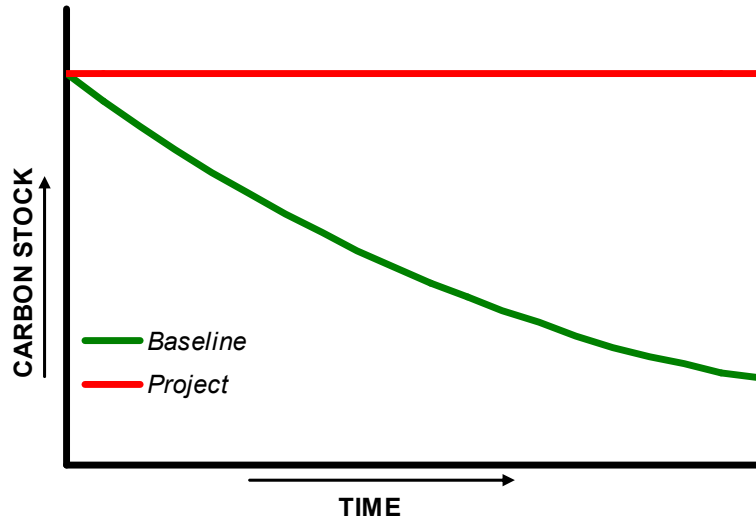
Carbon Project Types

- Forest management
 - Reduced impact logging
 - Lengthening rotations
 - Improve efficiencies in timber production
 - Form market for non-timber wood



Carbon Project Types

- Reduce forest degradation
 - Forest biomass gradually cut and deforested

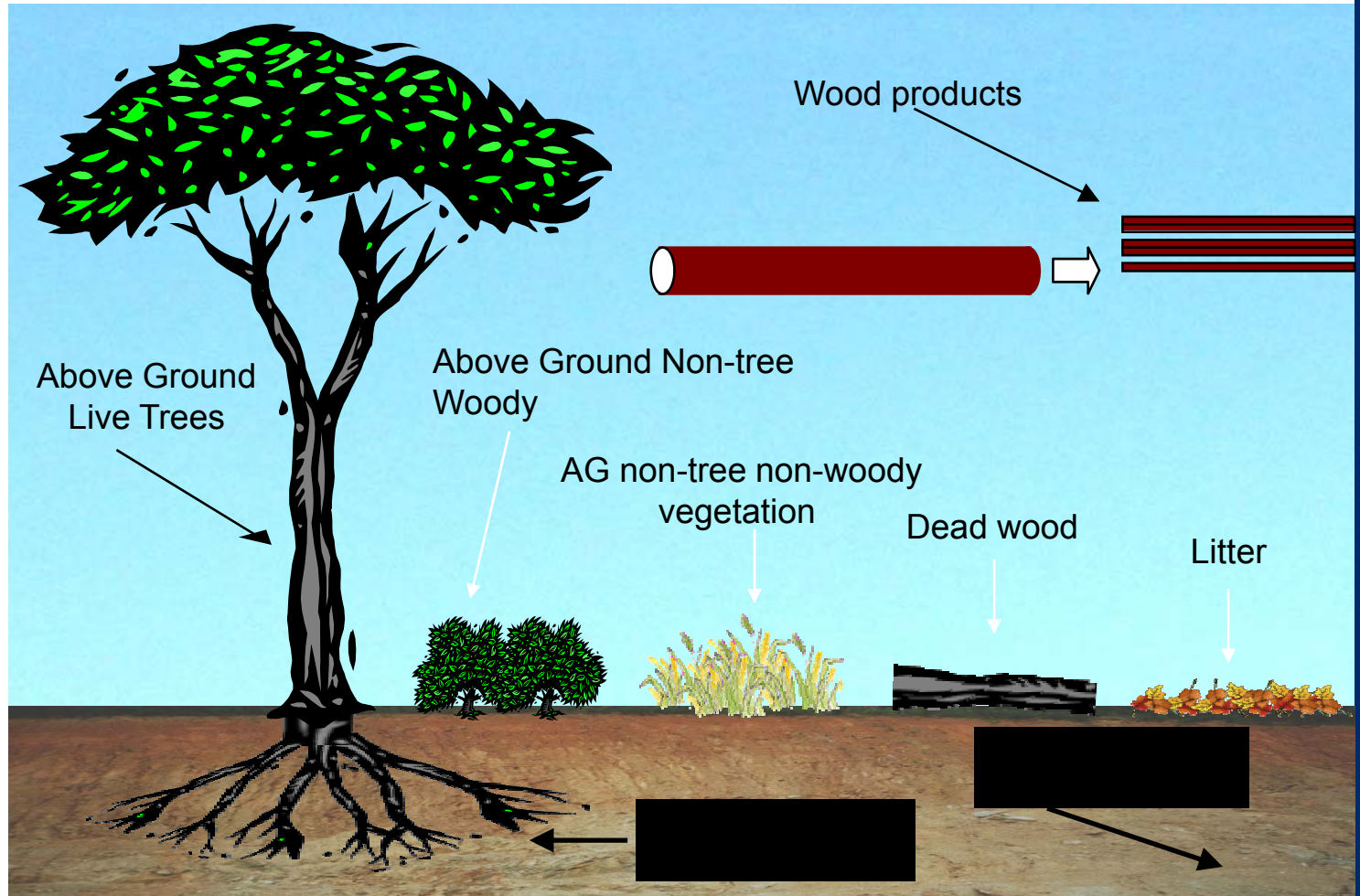


Eligible types

- CDM
 - Only afforestation / reforestation
- VCS
 - Afforestation, Reforestation and Revegetation
 - Agricultural Land Management
 - Improved Forest Management
 - Reduced Emissions from Deforestation and Degradation



Carbon pools



Carbon pools

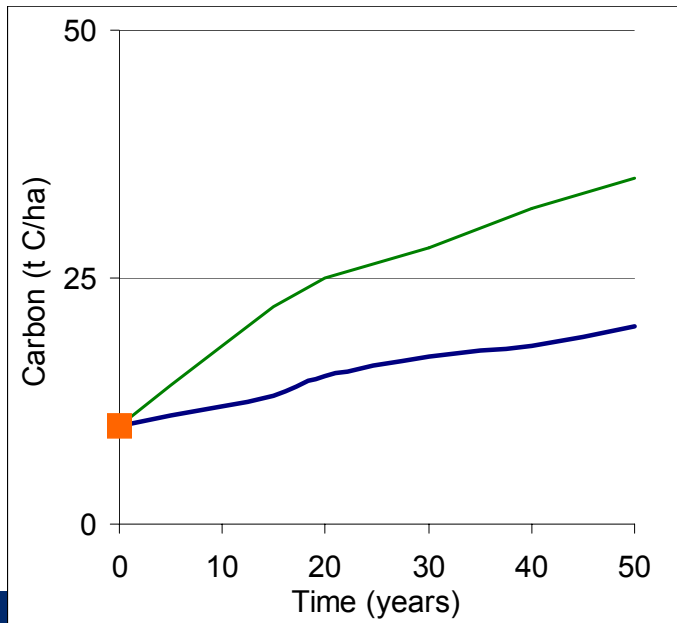
- Selection of pools depends on:
 - Expected rate of change
 - Expected magnitude and direction of change
 - Availability of methods, accuracy and cost of methods to measure and monitor
- For afforestation and reforestation over < 60 years it is always most economic and efficient to measure live tree biomass (above and belowground)



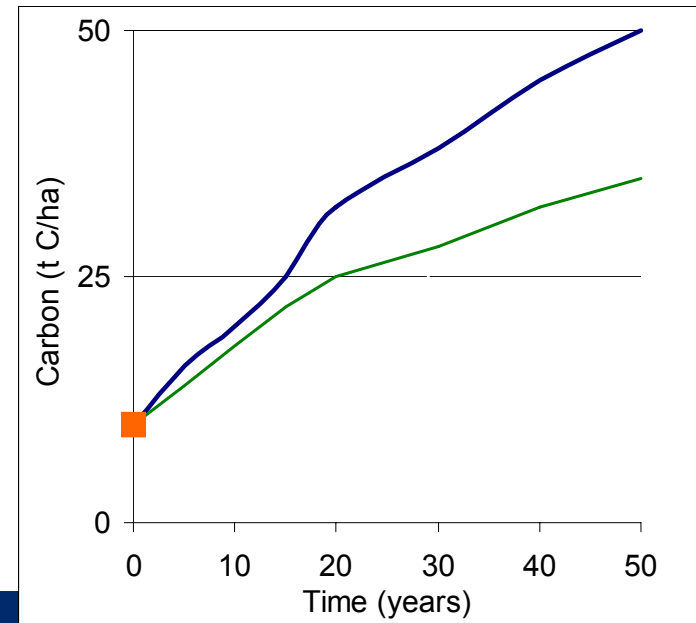
Carbon pools

- MUST measure ALL pools that predicted to be smaller in project than in baseline

Required:



Optional:



Carbon pools

Project Type	Carbon Pools						
	Trees	Live Biomass Understory	Roots	Dead Biomass Fine Coarse		Soil	Wood Products
-Restore native forests	Y	M	Y	M	M	M	N
-Plantations for timber	Y	N	Y	M	M	M	Y
-Agroforestry	Y	Y	Y	N	N	M	M
-Soil carbon management	N	M	M	M	N	Y	N
-Short-rotation plantations	Y	N	M	N	N	M	*
-Forest management	Y	M	N	M	Y	N	Y
-Reduce deforestation	Y	M	Y	M	M	M	Y

Y=recommended, M=maybe, N=not recommended, * Stores carbon in unburned fossil fuels

- **Selection of pools varies by project type**
- **Different measuring and monitoring designs are needed for different types of projects**



A WCS example

Karukinka in Chile



Example - Karukinka

- Five potential activities
 - Avoiding deforestation
 - Avoiding logging
 - Stopping beaver expansion
 - Improving regeneration
 - Preventing peat harvests



Karukinka

- Strongest opportunity:
 - Improved regeneration
 - Eligible for CDM or VCS (provided that the existing cover does not qualify as forest)
 - Additional
 - No leakage



Stopping deforestation

- Not CDM eligible
- Problem:
 - No risk to area being deforested.
 - Illegal deforestation very low in region – none has occurred within boundaries since WCS management began
- = Baseline problem
- Could go with CCX regional baseline – PR issue?



Preventing Peat Harvesting

- Not eligible for CDM and not currently for VCS either
- Similar problem to avoided deforestation
- Must show a baseline of peat harvesting
- Also a project issue as it could be expensive for WCS to purchase contracts to prevent harvesting



Prevent Beaver Expansion

- Preventing degradation – VCS eligible
- Additionality?
 - Is this something WCS and regional government would do anyway?
- Project?
 - Would it be possible to stop expansion?



Stop Logging

- VCS eligible
- Baseline?
 - Hard for WCS to argue that it would realistically practice typical unsustainable harvesting practices
 - So baseline would be limited sustainable harvesting
 - many fewer credits
 - Can't choose baseline of previous owners as WCS did not gain control of area for the express purpose of reducing GHG emissions



Eligibility



What is a forest?

- Host country must define a forest within the following guidelines:
 - Minimum tree crown cover between 10 and 30%
 - Minimum land area between 0.05 and 1.0 hectare
 - Minimum tree height between 2 and 5 m
- Values once chosen must remain fixed



1990 Rule for Afforestation

- No land meeting national definition of forest be present within project boundaries between 31 December 1989 and start of project
- Different dates for other standards eg VCS



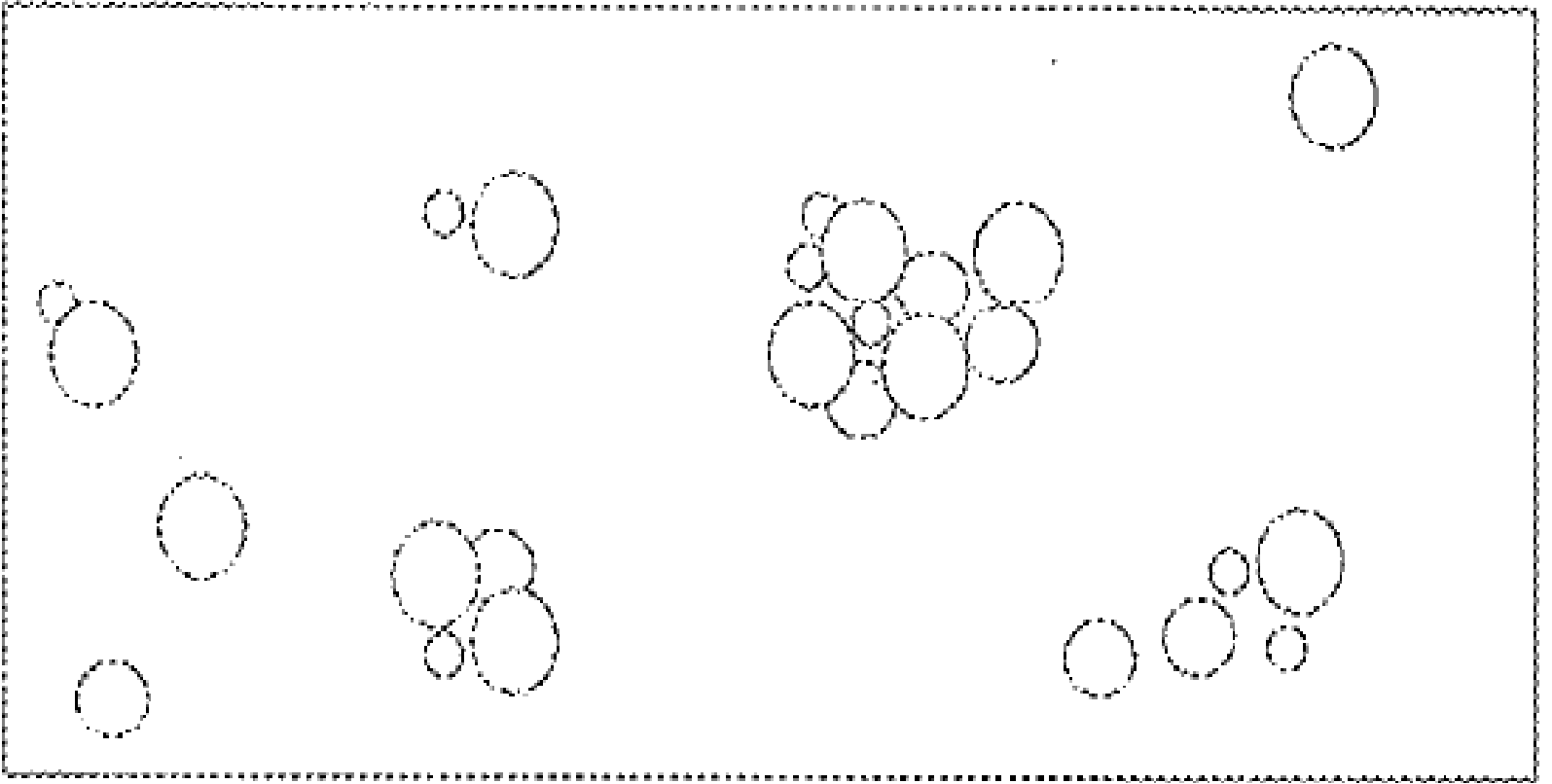
Eligibility Tool

Demonstrate the project area is not already forest

- a. Tree height
- b. Area
- c. Tree cover

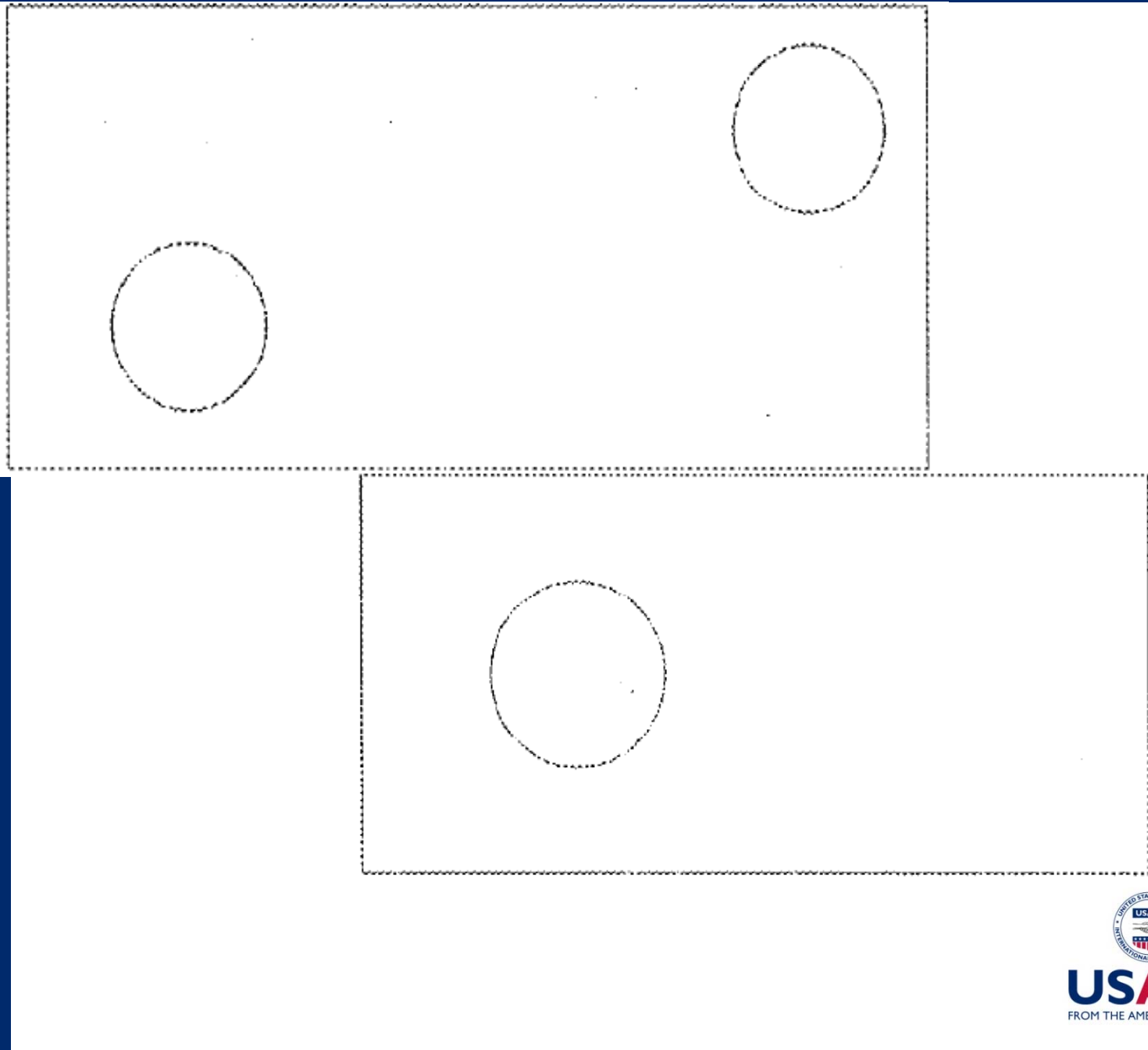


TRANS LINKS



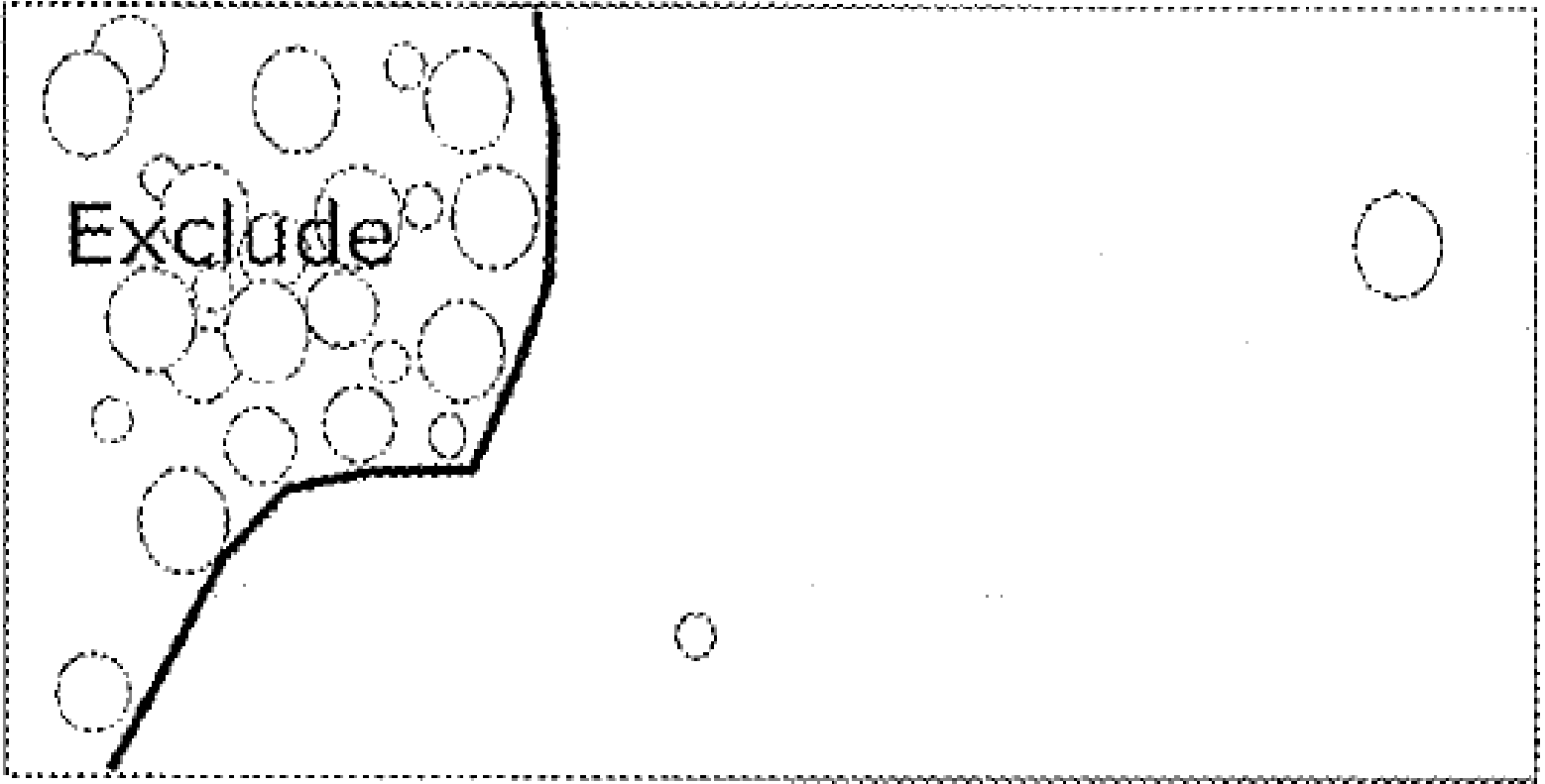
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TRANSLINKS



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Eligibility Tool

- Demonstrate that the activity is an afforestation/reforestation activity
 - Cadastral maps
 - Satellite / aerial photography
 - Local interviews





WINROCK
INTERNATIONAL
Putting Ideas to Work

-  Pico Bonito National Park
-  Designated Buffer Zone
-  CDM Parcels

San Marcos



Map Copyright Winrock International, 2005
Image from orthorectified Landsat 5, 18-3-1987

