Gaining approval for LULCF projects and project methodologies under the CDM: Lessons learned

Friday December 2nd 2005, 19.30 – 21.00

United Nations Climate Change Conference

UNFCCC – COP 11 / MOP 1 – Montreal 2005

Chair: Dr. Sandra Brown, Senior Scientist – Winrock International

Co-Chair: John Kadyszewski – Winrock International

Presenters:

Martin Enderlin – Chair AR Working Group / Member CDM EB

Bernhard Schlamadinger – Expert Reviewer, Joanneum Research

Benoît Bosquet –Manager World Bank's BioCarbon Fund

Dumitru Galupa – Moldova Soil Conservation Project

Shawn Shuang Zhang – Conservation International China CDM Project

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Gaining approval for CDM LULUCF methodologies and projects: lessons learnt

Side Event WI – 2. 12.05 Montréal

Martin Enderlin
member EB - Chair WG AR

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Stock taking after EB22

- **Only 17 NM so far:**
  1 AM, 7 under consideration, 9 rejected
  (re-submissions, + trend, consolidation)
- **AR additionality tool (EB21) => not mandatory**
- **AR eligibility tool for land (EB22) => mandatory, in PDD**
- **CDM-AR-PDD and Forms: NMB&NMM new in 1 NM**
- **CDM-SSC-AR-PDD under development**
- **Guidance to PP on: leakage, pre-project emissions, baseline selection, calculation of t-CERs & l-CERs etc.**
- **AR SSC methodologies (part of add. EB report to COP/MOP):**
  - previous land use - grass-&croplands only, no settlements or croplands
  - appl. Conditions: no ploughing
- **ARNM0010 approved & available as ARAM0001: degraded land**

Review Procedure for Assessment of New AR Methodologies

General

- **Assessment of a AR NM involves an expert judgement based on objective issues and requires tacit knowledge to arrive at a conclusion, which is difficult to translate into simplistic rules.**
- **A NM has to be user oriented, written in a concise, practical, clear manner, with appropriate use of terminology, and correct language.**
- **NM has to provide tools to "how to" do things in a certain way, according to pre-established Modalities and Procedures, type of project and conditions for application.**
- **A NM shall be assessed in its intrinsic capacity to address correctly the relevant issues of the Decisions by CoP, M&P, and rules given by the EB.**

A ARNM is Assessed for its Intrinsic Capacity

- **To address correctly the relevant issues of the Decisions by CoP, M&P, & rules given by the EB, such as**
  - **Scope of applicability, assumptions & restrictions of NM.**
  - **Establishment of the project boundary.**
  - **(Eligibility of the land => EB22 => in PDD).**
  - **Determination of Baseline taking into account national circumstances (EB23?).**
  - **Estimation of ex-ante actual net GHG removals.**
  - **Proving additionality of the the project scenario.**
  - **Leakage.**
  - **Uncertainties.**
  - **Monitoring methods for ex-post determination of actual net GHG removals by sinks.**

Shortcomings of ARNM

- List issues / shortcomings noted in previous C-cases (of the submitted AR NM) have been identified.
- The issues are grouped under three categories i.e. basic issue, primary issues and secondary issues, depending on the importance of different issues and their interdependence / inter-relatedness while developing a AR methodology

Basic Issue

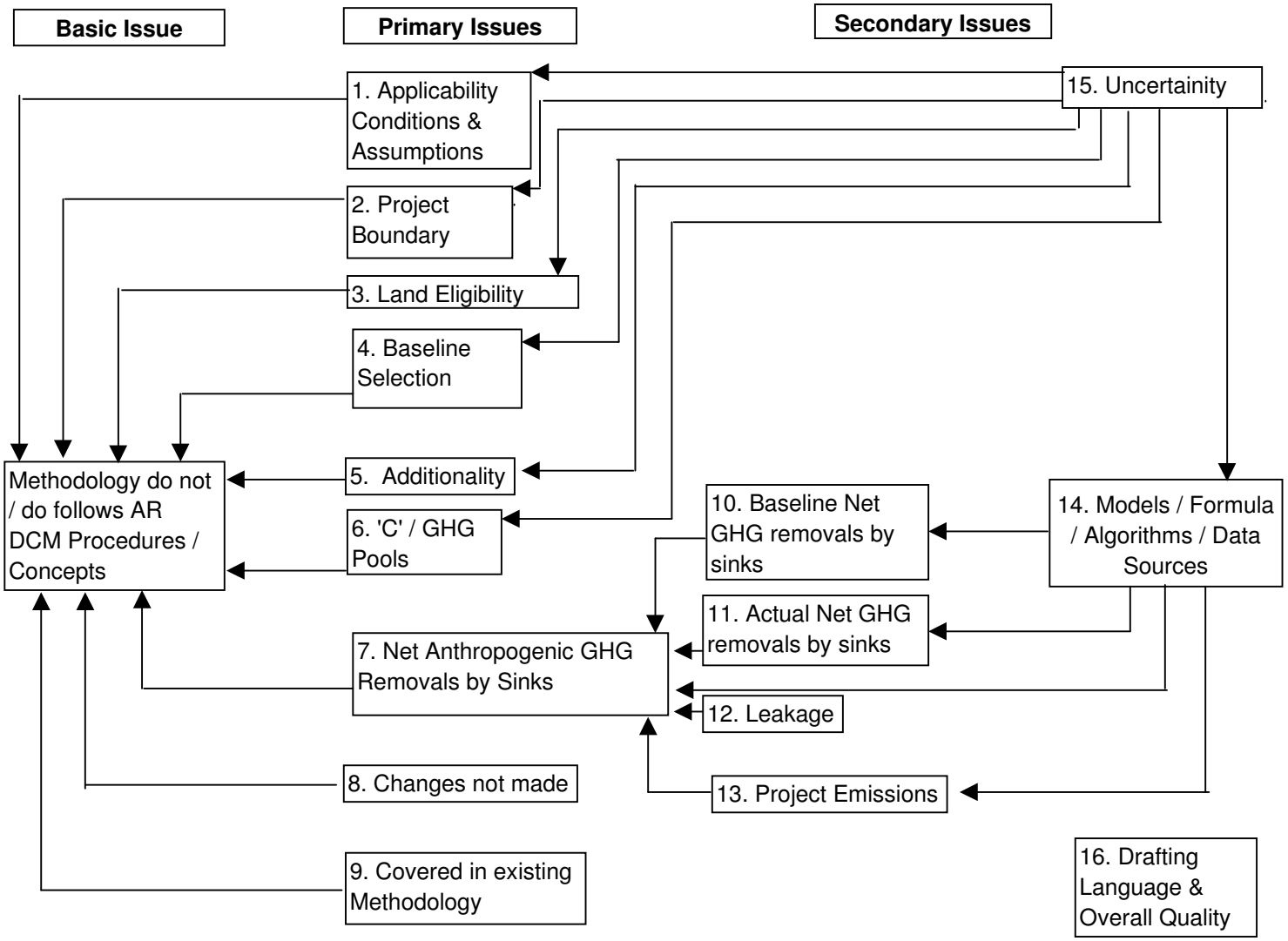
- **Integration of CDM AR procedures / concepts and terminology**
  - Methodology shows poor integration of knowledge of AR CDM modalities and procedures of decision 19/CP9.
  - Definition and consideration of baseline net GHG removal by sinks, actual net GHG removal by sinks and net anthropogenic GHG removal by sinks is not as per modalities and procedures for CDM AR (decision 19CP.9)

Primary Issues

- **Conditions for applicability and assumptions**
- **Project boundary**
- **Land Eligibility**
- **Baseline approach, justification & baseline land use scenario determination**
- **Additionality assessment**
- **Selection and consideration of carbon / non-CO2 GHG pools**
- **Net Anthropogenic GHG removal by sinks**
- **Changes not made (in second round cases)**
- **Already covered by an existing methodology**

Secondary Issues

- **Baseline net GHG removals by sinks**
- **Actual net GHG removals by sinks**
- **Leakage**
- **Project emissions**
- **Models / Formulas / algorithms and data sources used**
- **Uncertainties**
- **Drafting, language & overall quality**



Note: The primary issue components (1 to 7) are all inter-related and interdepependent but not shown. Secondary issue component no. 16 can impact / interact with all the components from 1 to 15, hence not shown.

Figure 1: Different steps involved in developing AR methodology and their inter-relationships

Guidance to assign score to different issues of a new AR methodology

Assigned Score	Remarks
0	No changes required
1	Minor changes required which are relatively easy to cure & maintains the basic original structure
2	Major changes required which are relatively easy to cure and maintains the basic original structure and another round of expert review is not required.
3	Major changes required which are not easy to cure and would significantly change the methodology and another round of expert review would be required.

Summary Table for Assessment of AR NM

SN	Issues / Criteria	Assigned Score* (AS)	Error Enhancement Factor (EEF)	Total Score = AS X EF
	Primary Issues			
1	Applicability Conditions & Assumptions		3	
2	Project Boundary		3	
3	Land Eligibility		3	
4	Baseline Selection		3	
5	Additionality		3	
6	'C' / GHG Pools		3	
7	Net Anthropogenic GHG Removals by Sinks		3	
8	Changes not made		3	
9	Covered in existing Methodology		3	
	Secondary Issues			
10	Baseline Net GHG removals by sinks		2	
11	Actual Net GHG removals by sinks		2	
12	Leakage		2	
13	Project Emissions		2	
14	Models / Formula / Algorithms / Data Sources		2	
15.	Uncertainty		2	
16.	Drafting Language & Overall Quality		2	
	Methodology do not follows AR DCM Procedures / Concepts : Total Score	-	-	

If total score > 9 then "C" case; If total score < 9 then B / A case

Conclusions & recommendations

- Quality of NM ↑, room for consolidation
- Thorough use of M&P AR (Dec. 19/CP9) is crucial
- Take primary issues seriously
- Consult www.unfccc.int/CDM page regularly
- Use latest guidance: tools for eligibility and additionality, leakage, baseline determination etc.
- Look out WG07: uncertainities, national policies
- Use AMs and SSC simpl. Meth. as starting point
- Submit good quality

Experiences from review of AR methodologies

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JOANNEUM RESEARCH

Baseline methodologies are not only about baselines

- Land eligibility (not forest in 1990)
- Baseline scenario, and GHG emissions / removals
- Project scenario, and GHG emissions / removals
- Additionality of the project scenario
- Leakage
- Estimation of the net GHG benefits resulting from project, taking into account the above

Reasons for rejection of NMs to date

- Incomplete
- Not following 19 / CP9
- IPCC Guidance not used
- Scope and applicability (too broad/narrow)
- Data, equations
  - Errors
  - Not possible to monitor

Reasons for rejection of baseline part (I)

- Mainly NMB - NMM had IPCC GPG to build on
- Land eligibility improperly assessed
- Process for selecting most plausible scenario not satisfactory
- Baseline assumed to have no tree planting, but not substantiated (background rate of AR)
- Baseline solely based on activities outside project area
- Baseline included non-CO2 gases
- Conflict of interest when PPs manage baseline plots

Reasons for rejection of baseline part (II)

- No additionality tool; self developed tool inadequate
- additionality as difference project / baseline.
  → project would not have occurred w/o CDM
- Carbon pools not estimated separately
- Project emissions incomplete (N_2O from fertilizers)
- No prediction of baseline / project C stock changes
- Uncertainties not assessed AND no conservative assumptions (at least one of the two is necessary)
- Leakage from activity displacement not assessed
- Positive leakage: must not be included

Some recommendations

- Avoid any of the above, learn from these mistakes
- More standardization now than 6 months ago
- Conservativeness easier than uncertainty analysis
- Use additionality tool
- Land eligibility tool (mandatory)
- Consider EB clarifications on national / sectoral policies
  cdm.unfccc.int/EB/Meetings/016/eb16repan3.pdf
- Keep NM short and concise, avoid repetition

Steps for project proposers

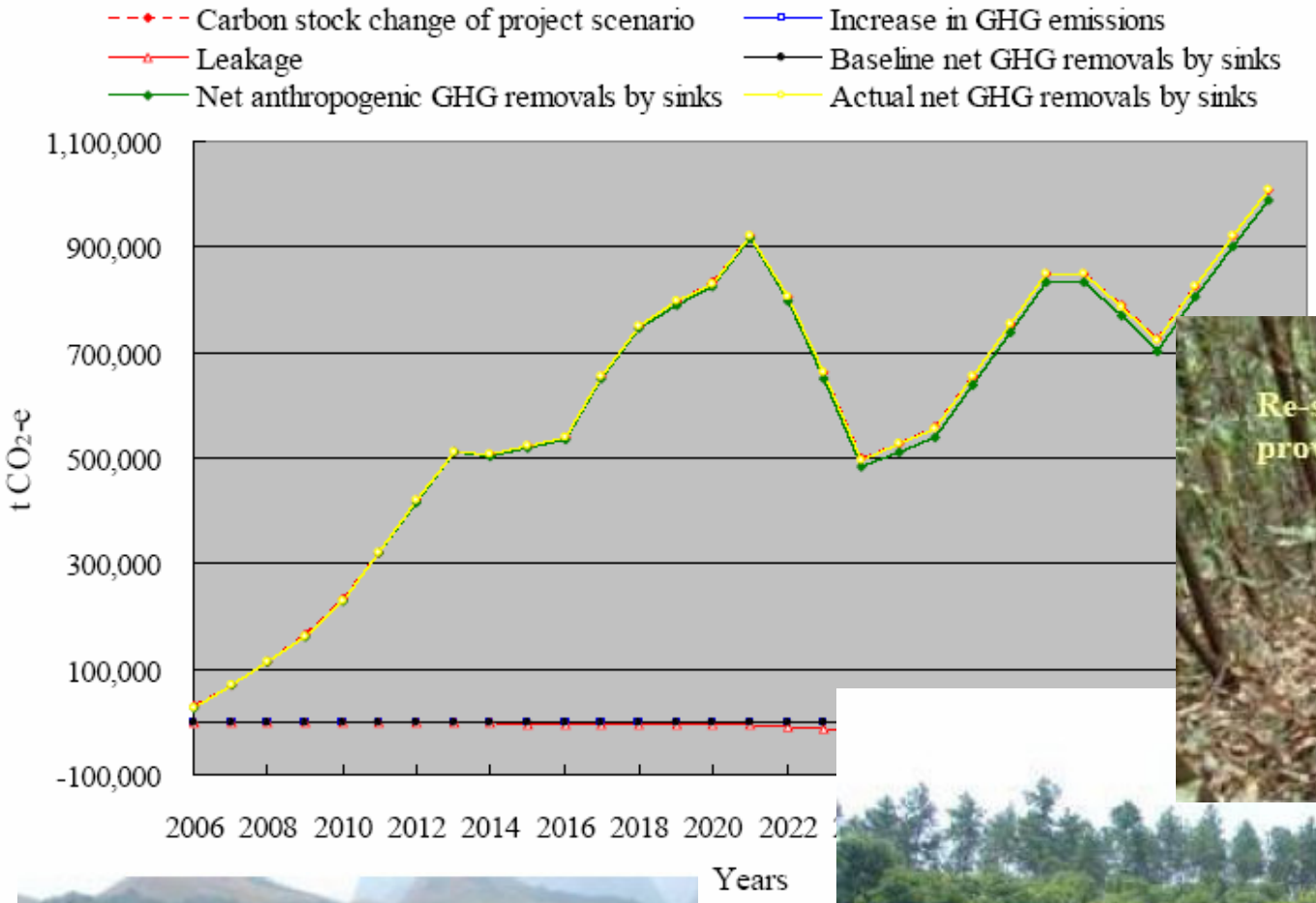
- Screen the existing NMs
  1. Use published NM (may require project changes: omit soil carbon, no nitrogen fixing trees, etc.)
     - AR-AM0001 (reforestation of degraded land)
     - Simplified baseline and monitoring methodologies (to be approved by COP/MOP1)
  2. **If NM fits but small deviations:** Add modules as appropriate (more carbon pools, activity displacement, "background reforestation rate" for baseline
  3. **If submitted NM fits:** contact proponent and ask for permission to use it
  4. **If none is similar:** screen other upcoming projects and consider collaboration
- If none of the above: new methodology

Projects should work together in drafting methodologies

- Helps avoid future bottlenecks in CDM AR WG
- Avoids future need of consolidation of methods
- Increases the quality of methodologies

AR-AM0001

X. Zhang and B. Schlamadinger



AR-AM0001: Reforestation of degraded land

- Direct planting or seeding
- C pools: AGB, BGB
- Baseline approach a (existing or historical changes in C stocks)
- No activity shifting
- No natural succession
- No significant soil C loss from site prep
- No grazing in project

Other features

- Conservative assumptions in several places
- Allows for individual trees on the site at start of project
- Stratification
- Standard additionality tool is used

Baseline / project GHG estimation

- Standard IPCC GPG methodologies
- Local data for biomass, GPG or national default data for GHG emissions
- Carbon in biomass (baseline and project):
  - Method 1: Gains – losses
  - Method 2: Stock-change method
- GHG emissions (project):
  - Fossil fuel use
  - Pre-existing vegetati
  - GHGs from fertilizer
- Leakage:
  - Fossil fuels outside project boundary

Small-scale methodology

- < 8000 tons CO_2 / year
- AGB and BGB
- On grasslands or croplands
- No ploughing
- No more than 50% activity displacement
- Land eligibility test (simplified)
- Additionality test (barriers only)

The World Bank and A/R Methodologies

Benoît Bosquet
CoP11, Montreal
December 2, 2005

Harnessing the carbon market to sustain ecosystems and alleviate poverty

Moldova Soil Conservation

- Afforestation/reforestation of 14,500 ha of degraded public and communal land throughout Moldova (1,900 plots)
- No natural regeneration potential
- No capacity to fund reforestation, as evidenced by statistics
- Sequestration estimates based on CO2Fix model
- Methodology rated “B” and to be approved in February 2006
- Contract was signed in January 2004!
- Pre-validation by SGS; Initial Verification by TÜV; Validation expected April 2006

The BioCF in a Nutshell

- Goals:
  - Climate change mitigation
  - Livelihood improvements
  - Environmental amelioration
  - Contribution to adaptation
- 2 Windows:
  - Window 1 = Kyoto-compliant
  - Window 2 = beyond A/R in developing countries
- Tranche 1 = US$53.8 million (14 Participants)
- Largest buyer of LULUCF assets for compliant market
- Buys VERs up to 2017 at prices of up to ~ US$4/t CO_2e
- 150 proposals reviewed; 22 projects under preparation
- Most contracts to be signed by June 2006

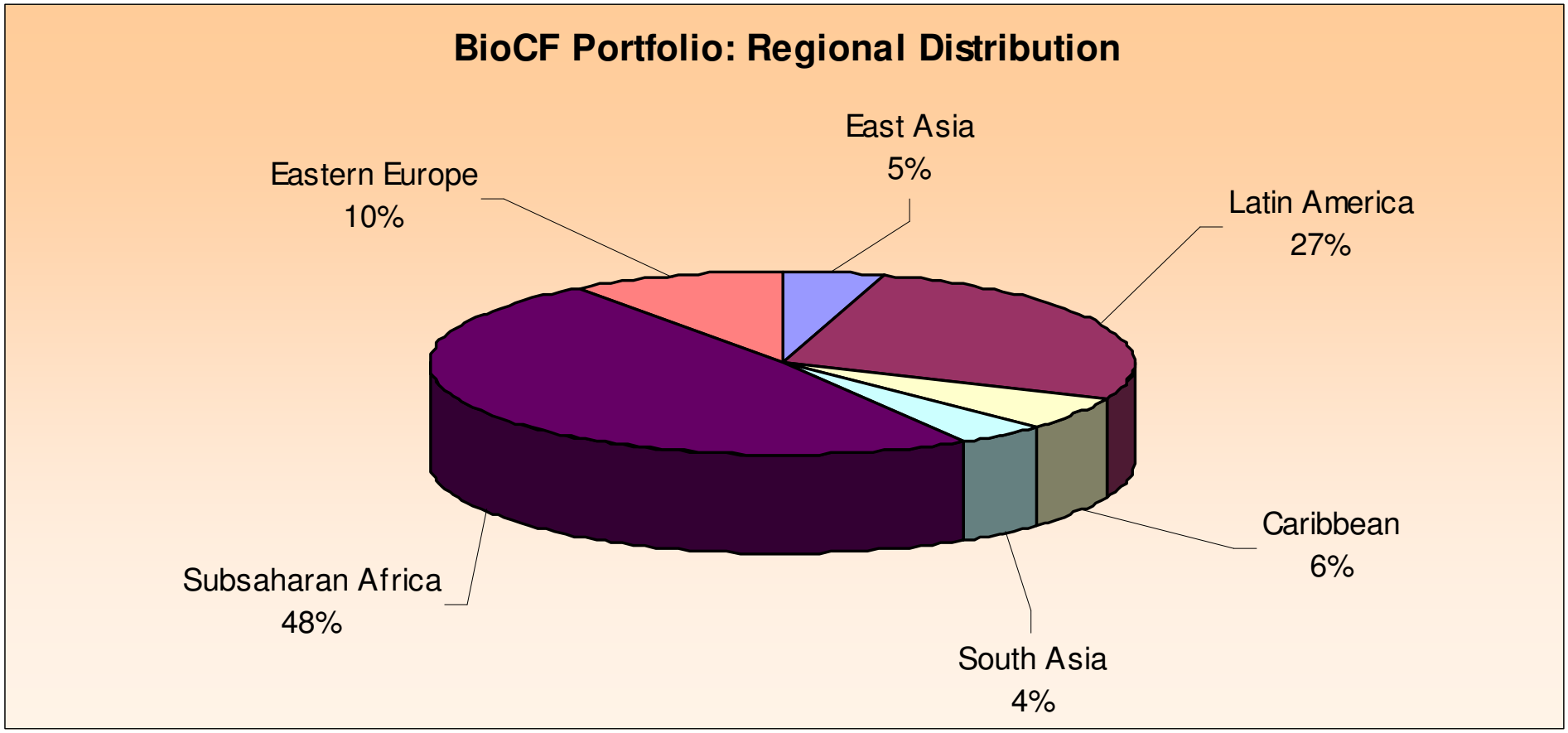
Project Selection

- **Important criteria to select proposals:**
  - **Likelihood of financial closure**
  - **Price requested**
  - **Payment schedule requested**
  - **Additionality**
  - **Sponsor quality**
  - **Environmental benefits**
  - **Social benefits**
  - **Regional balance**
  - **Technological balance**
  - **Avoidance of major controversies**
- **Review and approval by**
  - **Fund Management Unit**
  - **World Bank managers**
  - **Participants' Committee**

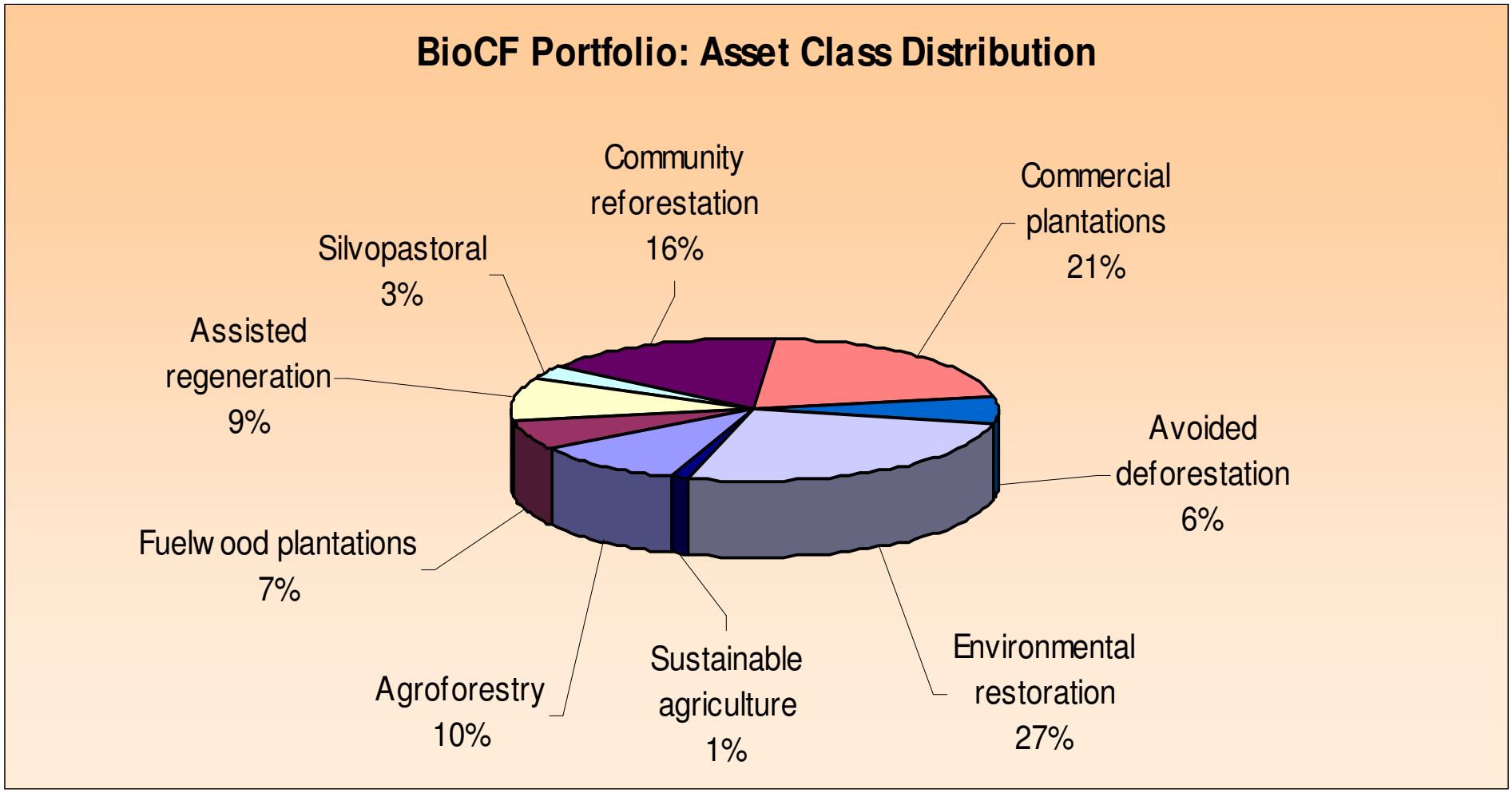
Leading Projects

- Albania Assisted Natural Regeneration
- Brazil Reforestation around Hydro Reservoirs
- China Pearl River Watershed Management
- Colombia San Nicolas Agroforestry
- Colombia Silvopastoral Rehabilitation
- Congo Bateke Fuelwood and timber Plantation
- Costa Rica Coopeagri
- Dominican Republic Rio Blanco Reforestation
- East Africa Small Group and Tree Planting
- Ethiopia Humbo Assisted Regeneration
- Honduras Pico Bonito
- India Improving Rural Livelihoods
- Kenya Green Belt Movement
- Madagascar Biodiversity Corridor
- Mali Acacia Plantations
- Mexico Seawater Agroforestry
- Nicaragua Precious Woods
- Niger Acacia Community Plantations
- Philippines Watershed Rehabilitation
- Trinidad and Tobago Nariva Wetland Restoration
- Uganda Nile Basin Reforestation
- Ukraine Chernobyl Reforestation

Regional Distribution



Project Classes



Methodological Development

- 1 methodology approved
  - China Pearl River Watershed
- 1 methodology rated “B”
  - Brazil AES Reforestation around Hydro Reservoirs
- 2 methodologies submitted
  - Albania Assisted Natural Regeneration
  - Mexico Seawater Agroforestry
- Several methodologies under development
  - Colombia San Nicolas Agroforestry
  - Costa Rica Coopeagri
  - East Africa TIST
  - Honduras Pico Bonito
  - Kenya Green Belt Movement
  - Madagascar Biodiversity Corridor
- Candidates for small-scale A/R methodology
  - East Africa TIST
  - Uganda Nile Basin Reforestation

Typology of Methodologies

- 1 Baseline Approaches “A” or “C”
  - 1.1 Area-based
    - 1.1.1 Active planting or seeding
      - 1.1.1.1 Forestry only
      - 1.1.1.2 Agroforestry
    - 1.1.2 Assisted regeneration
  - 1.2 Tree-based
- 2 Baseline Approach “B” (when at least 2 possible baseline scenarios)
- 3 Small-scale

- *Variants: Activity displacement*

Typology of Methodologies

- Need to consolidate methodologies: effort within BioCF and beyond
  - Congregation around China/Moldova methodology
  - Variation: addition of leakage dimension to reflect activity displacement
  - Agroforestry?
  - Assisted natural regeneration?
  - Tree-based approach?
- "Modules" to complement existing methodologies
  - Pools (in addition to Biomass): Litter, Dead wood, Soil carbon
  - Nitrogen fixation
  - Baseline reforestation

Some Lessons Learned

- LULUCF projects are neither easy nor cheap to prepare
  - People and land are impacted
  - Sustainability conditions must be built in, which takes times
  - LULUCF credits may be cheaper given buyers' market
- Biological carbon sequestration takes time
  - Growth rates are not linear
  - A small delay at the beginning of the project translates in higher ER loss before 2012 or even 2017
  - No more than 50-60% of BioCF needs before 2012
  - Need to buy beyond 2012
- Financing is a big constraint
  - Carbon paid on delivery
- Suggestions to A/R Working Group
  - Turn-around times are too short
  - Periods of inactivity on the side of the A/R WG
  - Staff up for the future
  - More interaction with developers would clear up problems and save time
  - Submission of new methodologies consisting of variations of approved methodologies or additional "modules": faster processing

www.carbonfinance.org

www.prototypecarbonfund.org

www.biocarbonfund.org

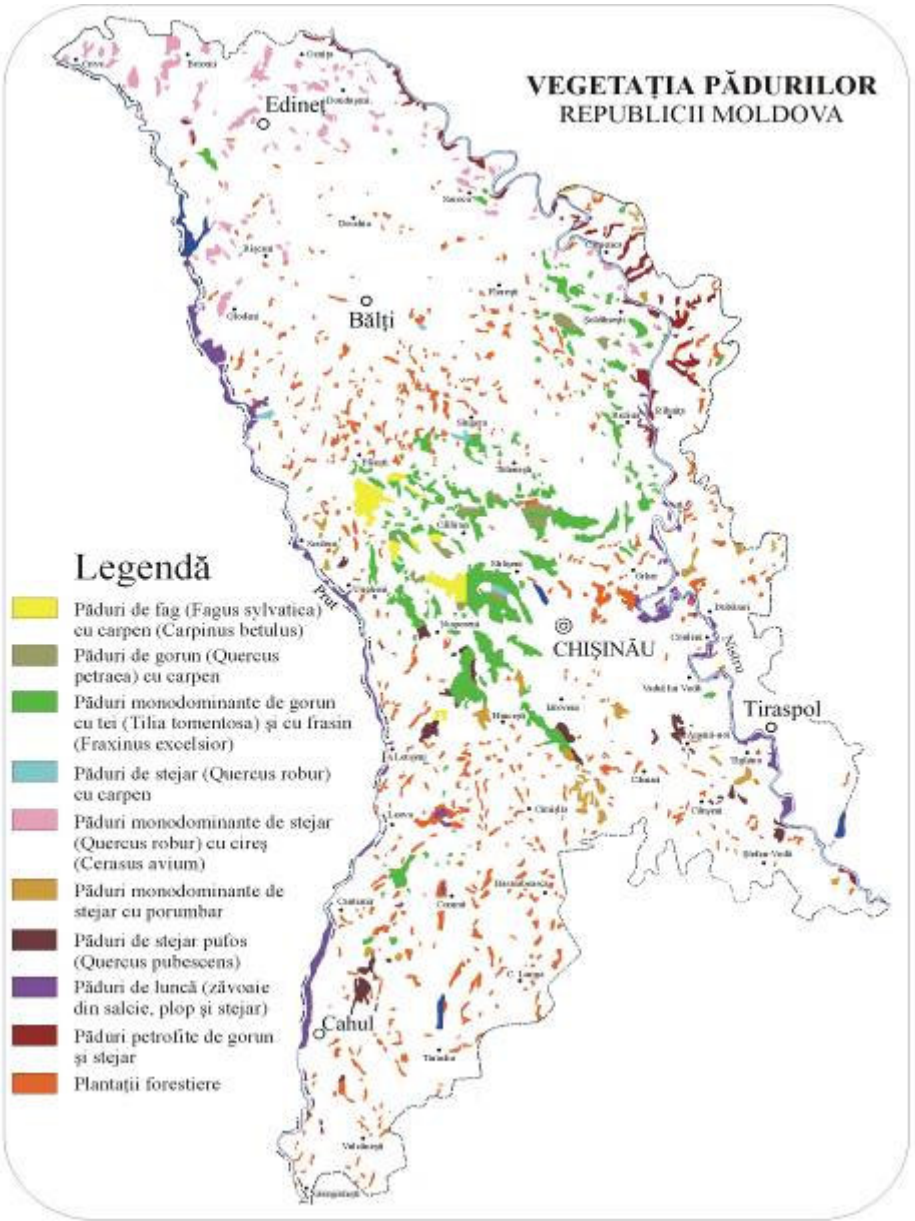
FORESTRY AGENCY „MOLDSILVA”

PROTOTYPE CARBON FUND

THE WORLD BANK

MOLDOVA SOIL CONSERVATION PROJECT

Forest resources of the Republic of Moldova



1. Forest Fund:

Total area – 403.4 thousand ha (11.9% of the country's territory), including area covered with forests – 362.7 thousand ha (10.7% -afforestation level); About 5000 forest sectors

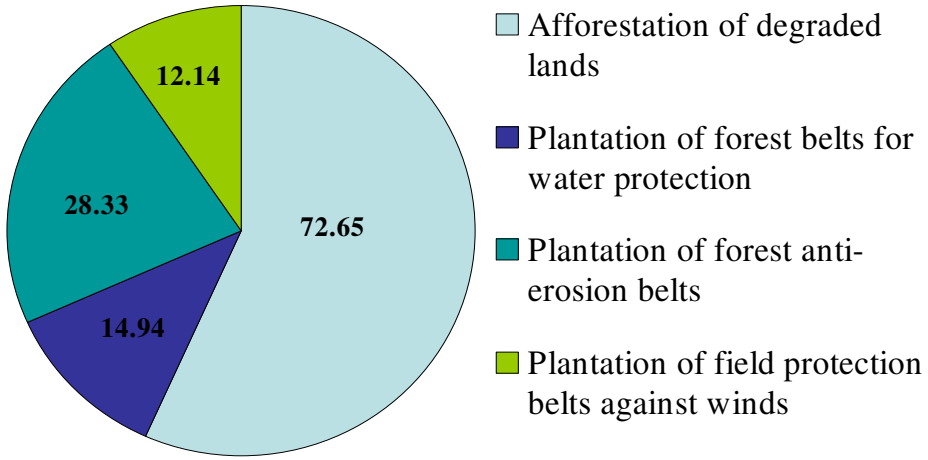
From that:

44.1 thousand ha or 10.9% are possessed by mayoralties and others, including 0.4 thousand ha of private forests.

2. Forest vegetation outside the Forest Fund:

49.0 thousand ha (30.5 thousand ha of forest protection belts and 18.5 thousand ha of shrubs and arboreal vegetation).

The potential area of land available for afforestation in the Republic of Moldova (total 128,1 thousand ha for 2003-2020):



MOLDOVA SOIL CONSERVATION PROJECT

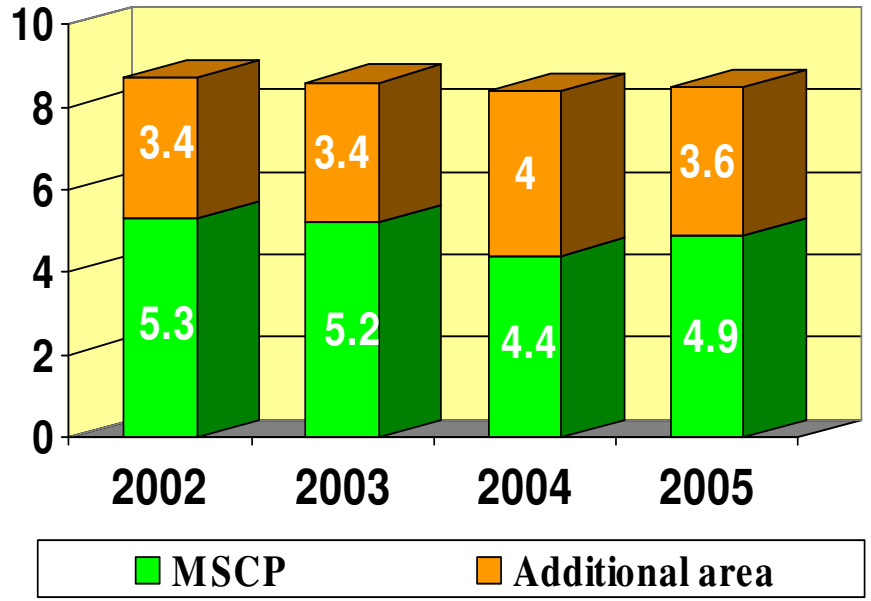
1. **The main project activity is carbon sequestration through afforestation of 19.8 thousand ha of degraded agricultural land.**
2. **The project is in support of the policy of the Republic of Moldova concerning the afforestation and extension of lands with forest vegetation.**
3. **Carbon sequestration and reduction of GHG - during first 20 years = 4.3 million tons;**
4. **Decrease land degradation processes and improve environmental factors with direct impact on population health and ecological security**
5. **Provide local population with wood and non-wood forest products (hunting, medicinal plants, beekeeping etc.) and create additional employment**

MOLDOVA SOIL CONSERVATION PROJECT

Additionality Test

Afforestation area in Moldova, 1994-2001 (thousand ha)	
1994	0.8
1995	0.9
1996	0.6
1997	0.5
1998	0.6
1999	0.5
2000	0.4
2001	1.0
Total for the period	5,3
Average for the period	***0,7***

Afforestation area in Moldova, 2002-2005 (thousand ha)



MOLDOVA SOIL CONSERVATION PROJECT

According to the national legislation (Forest Code, № 887-XIII as of 21.06.96):

- **A *forest* presents an element of the geographical landscape, a functional unit of the biosphere, composed of the forest vegetation community (with dominance of trees and bushes), living litter, animals and microorganisms, which are interdependent in their biological development and influence their forest habitat;**
- **Minimum area: 0.25 ha;**
- **Minimum tree cover: 10%;**
- **Minimum tree height: 5 m;**
- **Due to the degraded nature of the project areas, this qualification was easy to demonstrate.**

MOLDOVA SOIL CONSERVATION PROJECT

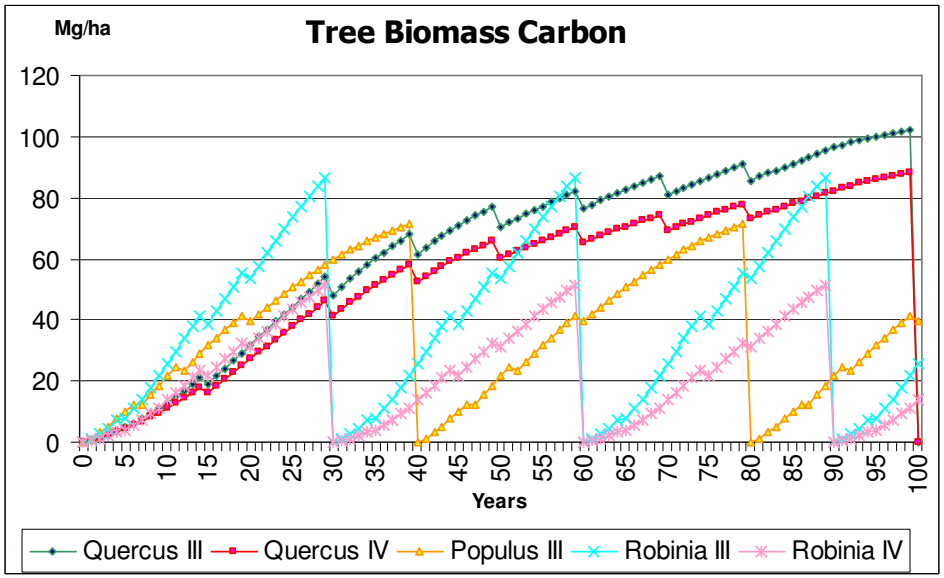
Confirmation of the correspondence of plots included in the project to the requirements of Marrakesh Accords

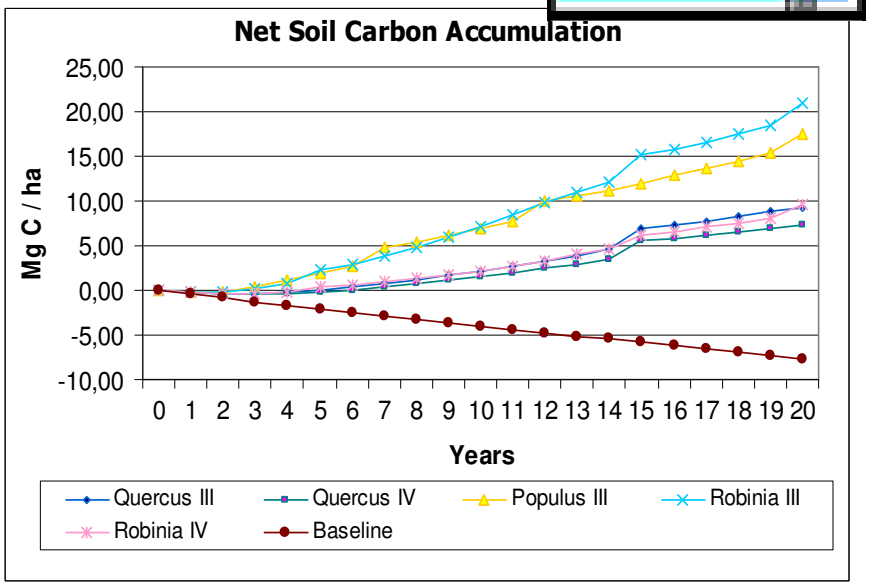
- Confirmation of land use categories of plots included in the project as of 31.12.1989 and of data of plantation by cadastral offices;
- Copies from cadastral maps/schemes of plots;
- Digital photo at the initial phase of implementation;
- Documentation of forest management planning;
- Validation and initial verification by third parties.

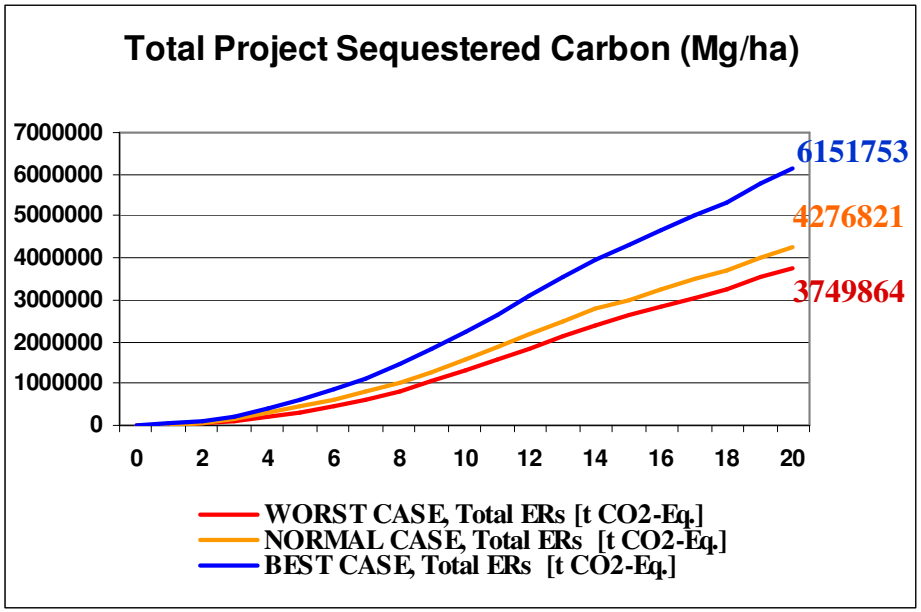
Project methodology

- Based on CO2FIX V.2 simulations model, - prepared with the EU support by Wageningen University (Netherlands) in 2002;
- The main parameters (wood density; correlation between carbon accumulation in trees, in crowning, in roots and in soil) were taken from several Moldovan, Romanian and Ukrainian special publications;

MOLDOVA SOIL CONSERVATION PROJECT







MOLDOVA SOIL CONSERVATION PROJECT

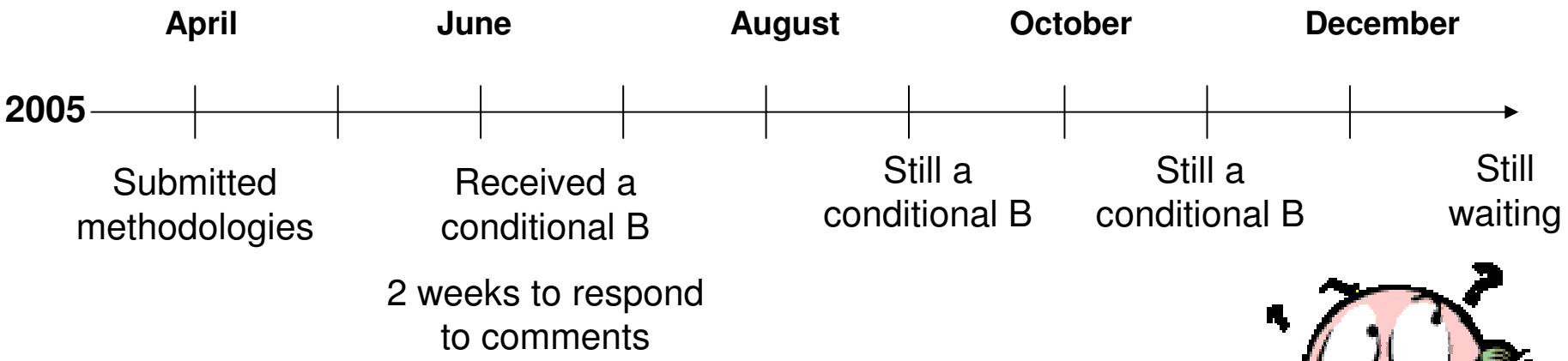
Chronology of events concerning the development and implementation of Moldova Soil Conservation Project

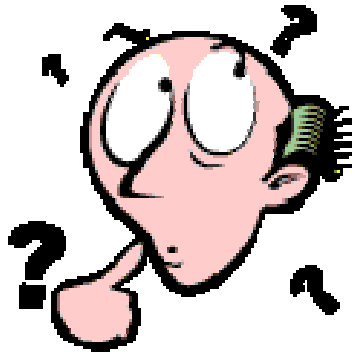
Project Concept Note Developed	April 2002
Planting Started	November 2002
Pre-Validation by SGS	September 2003
Winrock prepares monitoring plan	November 2003
Initial Verification by TUV Sud-Deutschland	July 2004
Methodology submission process begins	April 2005

Currently 90% of area is already planted

The CDM Process: Dealing with AR Working Group

Before 2005 not possible to submit documents

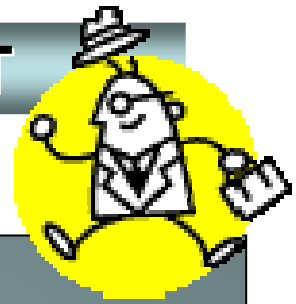




Issues experienced:

- Resource drain caused by long delays
- Rapid response required by working group but followed by large periods of inactivity.
- Pressure to achieve December 2005 deadline as an early start project

MOLDOVA SOIL CONSERVATION PROJECT



LESSONS

- **To facilitate the process, it was necessary to involve of all forestry actors in implementation of large-scale projects ("Moldsilva", ICAS, forestry enterprises, mayoralties).**
- **The process enhanced capacity in "Moldsilva" through the necessity to learn new methods and technologies including:**
  - Use of simulations and forecasting for forest plantations (unusual activities in forestry);
  - Use of models for estimation of GHG removals by forest vegetation (CO2 Fix v.2.0);
  - Use of GPS and GIS;
  - Creation and operation of complex data base for forestry resources.
- **Additional financial resources can result from the implementation of traditional activities.**
- **It was necessary to develop communication plans between stakeholders for the implementation of national forestry strategies and programs.**
- **The process was simplified by hiring experts to solve issues such as socio-economic problems of rural communities, promotion of agro-forestry and silvo-pastoral practices.**

SUGGESTIONS

- Quicker review and feedback for proposed methodologies and tools.
- CDM mechanisms should more strongly support afforestation/reforestation projects due to the high potential benefits to the environment and development.
- The CDM EB and working groups should take more responsibility for the development of methodologies and tools for all types of vegetation.
- Financial mechanisms should be more available to fund the establishment of LULUCF projects under CDM.
- LULUCF should have a greater share of the carbon market (more than the current 4%)

LESSON LEARNT FROM TECHNICAL ASSISTANT ADB CARBON SEQUESTRATION PROJECT

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Three Key Lesson Learnt

- Proving Land Eligibility for AR-CDM Project
- Land-Access and Land Tenure
- Additionality Tool

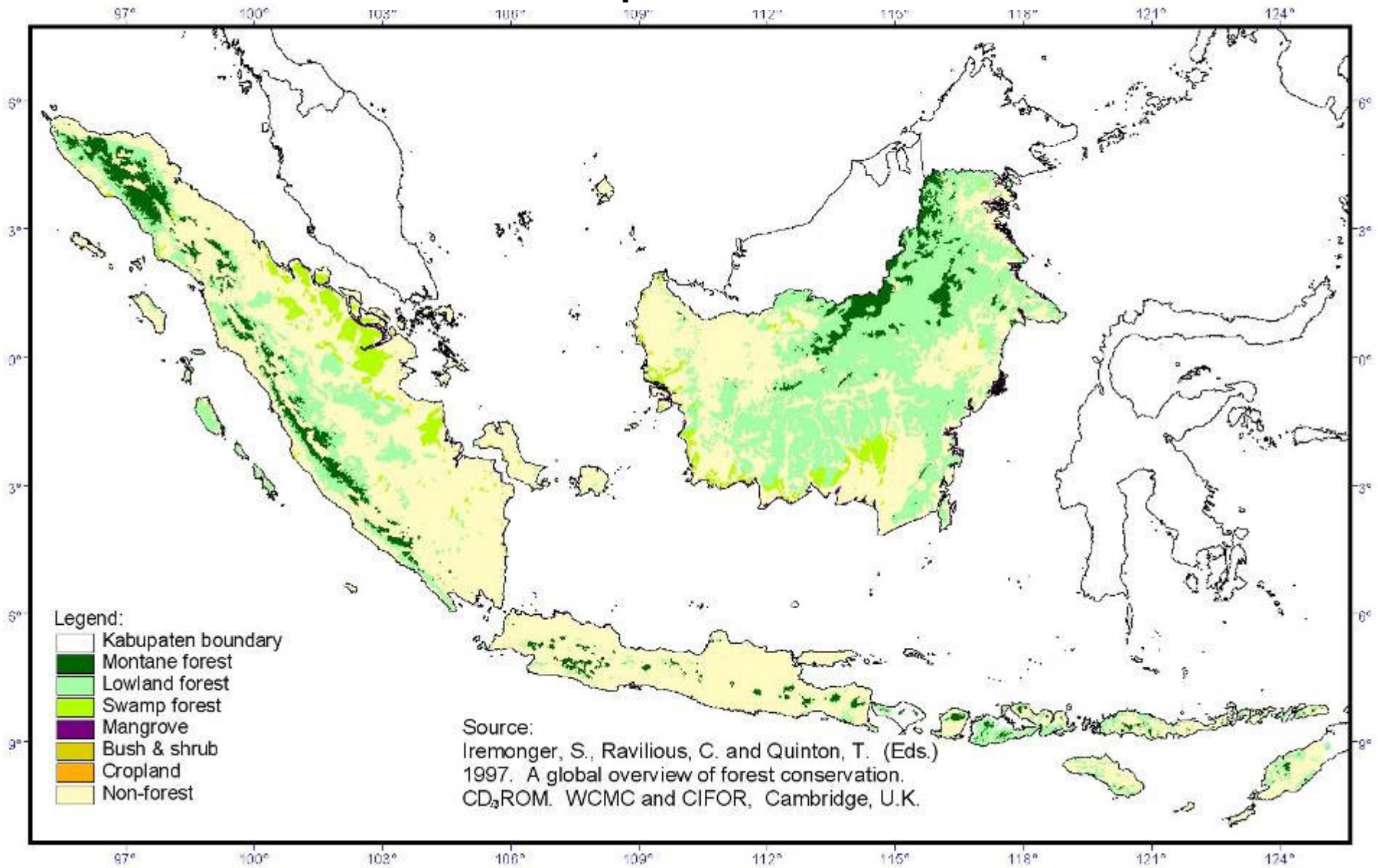
Proving Land Eligibility and defining project boundaries

- Demonstration of land eligibility:
  - Aerial photographs or satellite imagery complemented by ground reference data; or
  - Ground based surveys (land use permits, land use plans or information from local registers such as cadastre, owners register, land use or land management register);
  - If options 1 and 2 are not available/applicable, project participants shall submit a written testimony which was produced by following a participatory rural appraisal methodology.

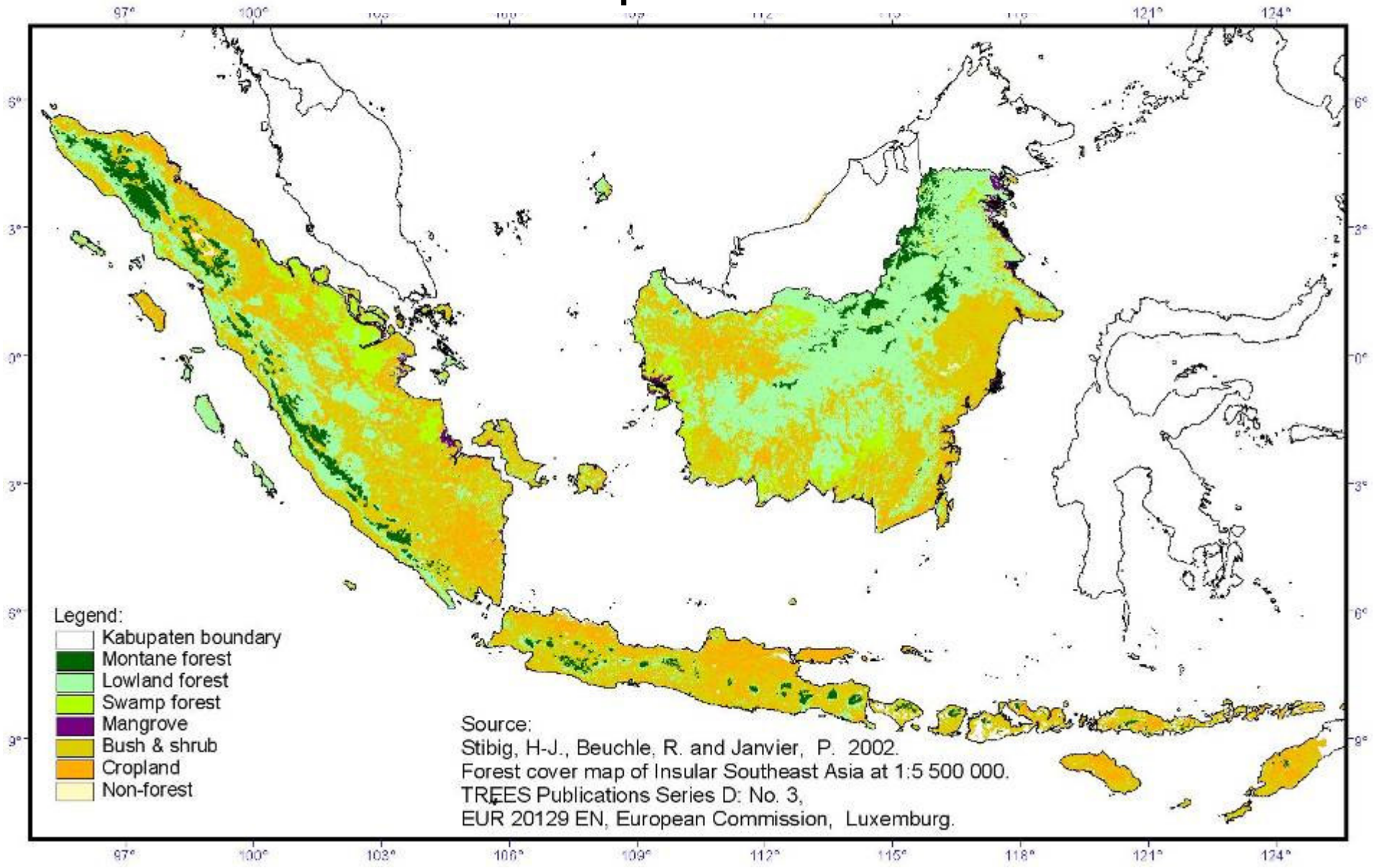
Problems

- Using first approach is impossible in all sites as high resolution satellite data/aerial photo before 1990 is unavailable. However, indicative CDM eligible land can be provided for whole country based on low resolution satellite data (e.g using World Conservation Monitoring Centre (WCMC, 1996) and Tropical Ecosystem Environment observation by Satellite (Stibig *et al.,* 2002)

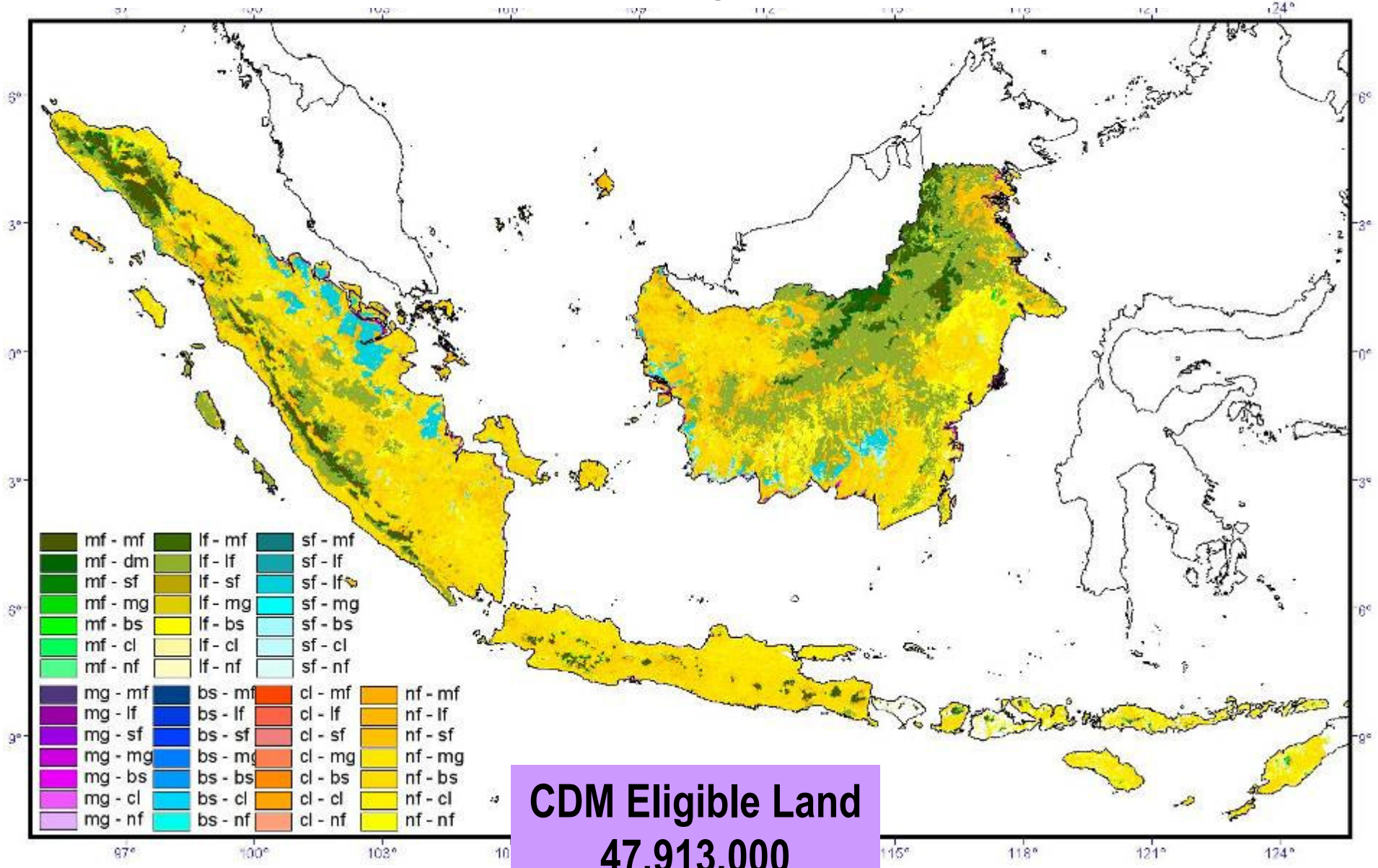
Forest Map before 1990



Forest Map after 2000



Land Use Change 1990-2000



Land Eligibility

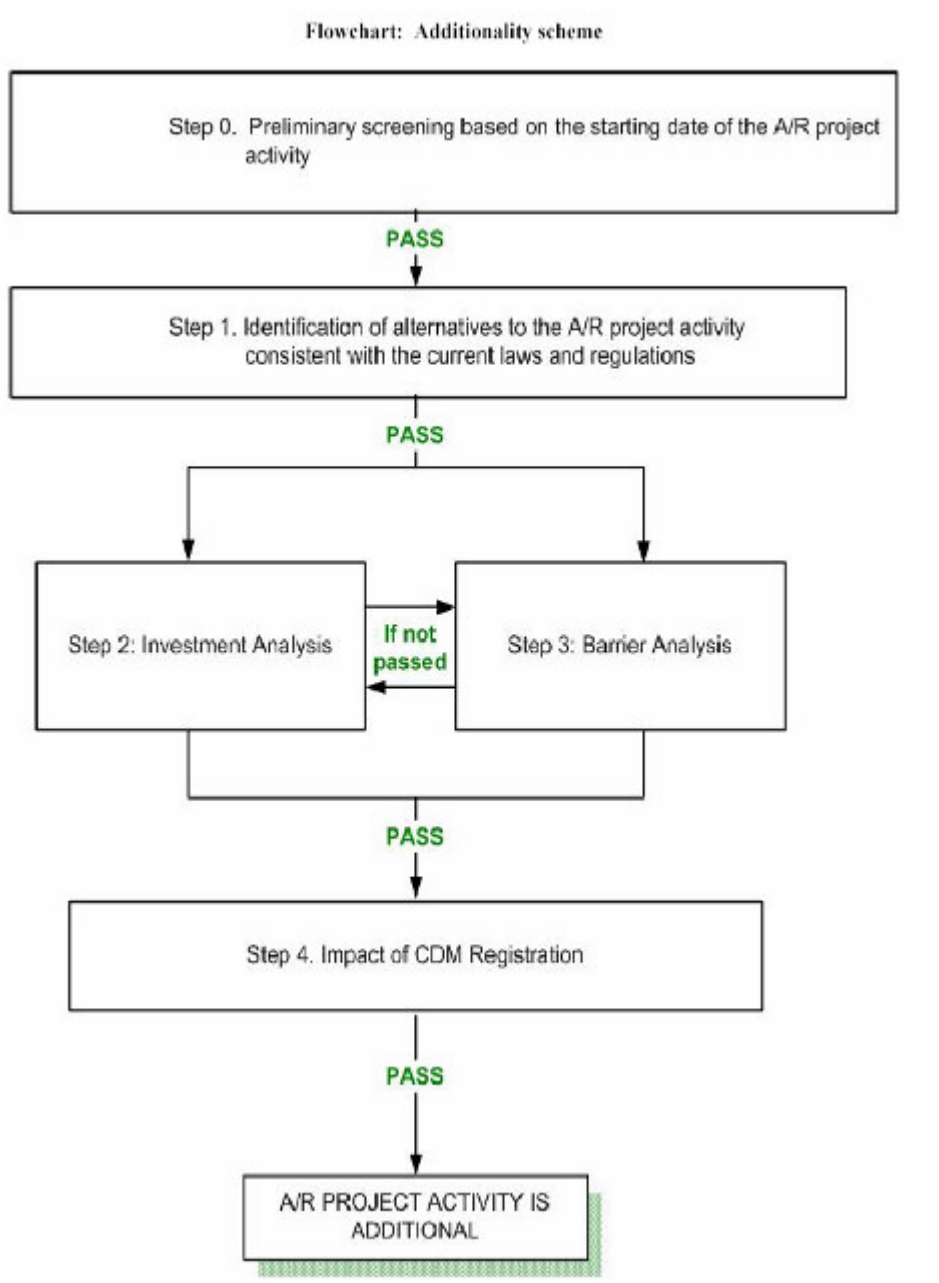
- Written testimony is the most feasible, but it does not give precise boundaries of lands that meet the CDM criteria ~ need to check for every parcel of land used for the project
- The written or verbal legal document (*Berita Acara*) can be prepared that clearly state the proposed site was not forested according to GOI criteria as of 1 January 1990 and is not currently forested. The document must be signed by long-term local residents.

Land Access/Land Tenure

- **Problem**:
  - Most of degraded lands allocated for the ADB projects are protected forest land and have been occupied by community for many years or claimed by custom as their lands.
  - Reforesting this land must follow regulation that 70% of species should be 'forest species' with the remaining as Multi-Purpose Tree Species, and the forest species can not be harvested
  - Farmers prefer to use more MPTS, thus there is antagonism between community needs and regulated land management practices
- **Potential Solution**:
  - The MOF or district/provincial governments can grant communities land access/tenure rights in return for establishing and maintaining tree-based systems on these lands
  - The MOF or district/provincial government can allow the uses of species or landuse systems that meet farmers' livelihood needs, as long as the systems meet the relevant definition of forests and its function as protected forest.
  - Working with the lawyer and local governments to develop legal document to ensure that the land will be secure for the lifetime of the project

Additionality Tool

- In all cases step 1 and 2 can not be passed as communities want to implement project activities which meet their preference, and should be economically attractive
- In other words we have to pay attention to D in the CDM that we have to develop something that is economically attractive to the community.
- In the case of AR-CDM Project it makes sense just to do barrier analysis (step 3) and step 4



A/R Project and Conservation in China

Shawn Shuang Zhang

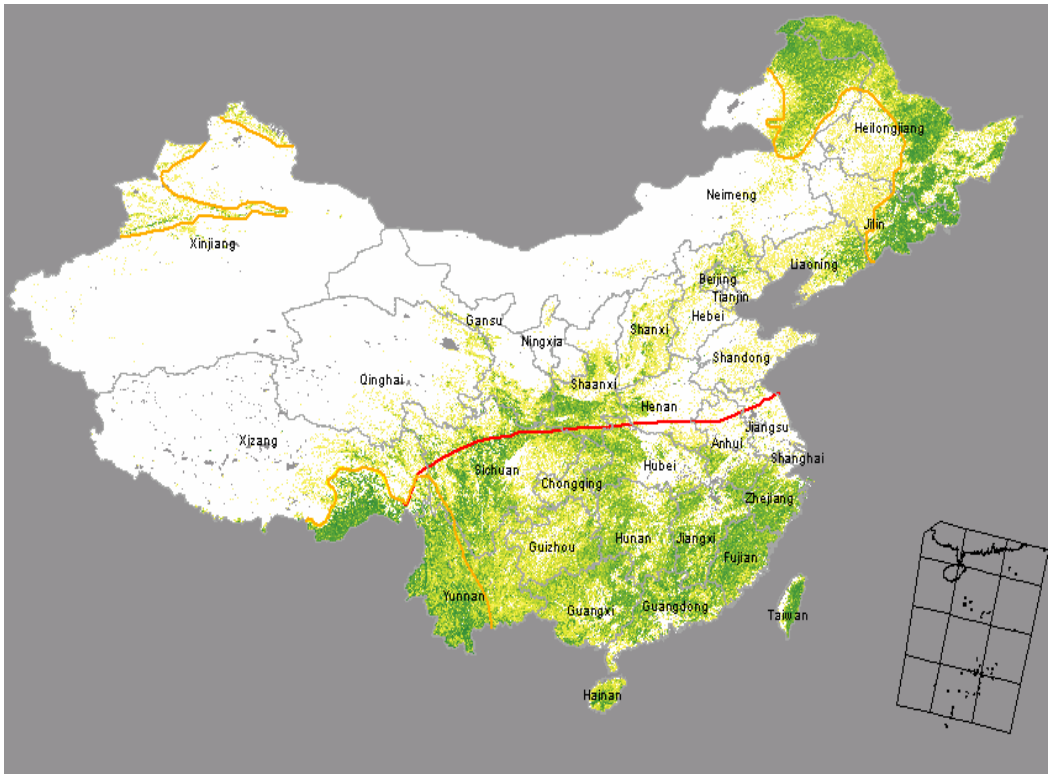
Project Manager
Forest Restoration for Climate, Community, and Biodiversity (FCCB)

Conservation International, China
The Nature Conservancy, China

Presentation Outline

- Background about China's forestry and biodiversity conservation
- Project Progress of "Forest Restoration for Climate, Community and Biodiversity (FCCB)"
- Lessons Learned

China Forest Resources



- Forest Area : 1.586 Million KM²
- Forest Cover: 16.55%
- 88 Million Tons of Carbon sequestered in forest in 1990

2003 yearbook of China's Forestry

Grain For Green
-The Greatest A/R Project in China

- **13.3 Million Ha A/R in past 5 Years**
- **97 Million farmers benefit directly**

Carbon and Conservation

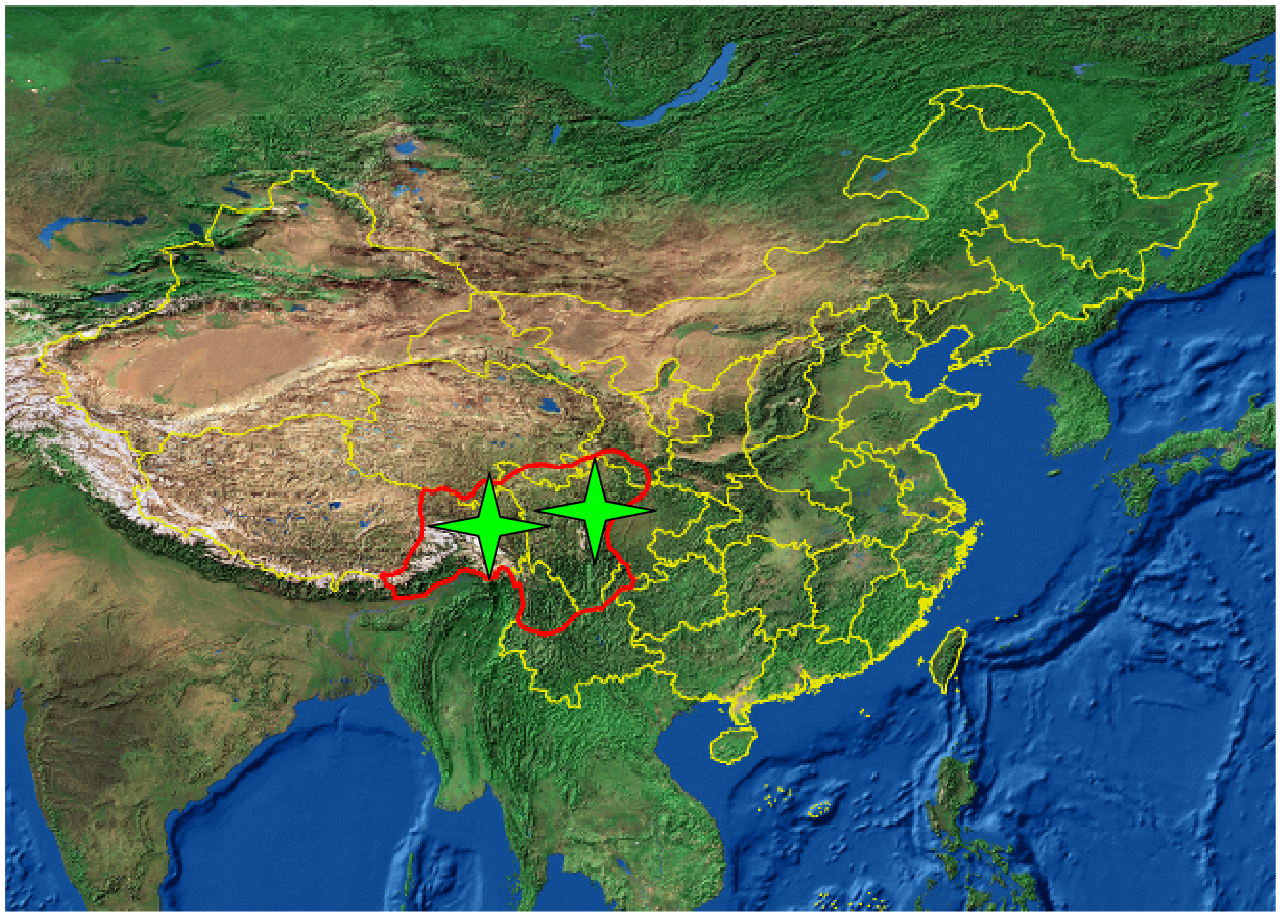
FCCB

"Forest Restoration, for Climate, Community, and Biodiversity"

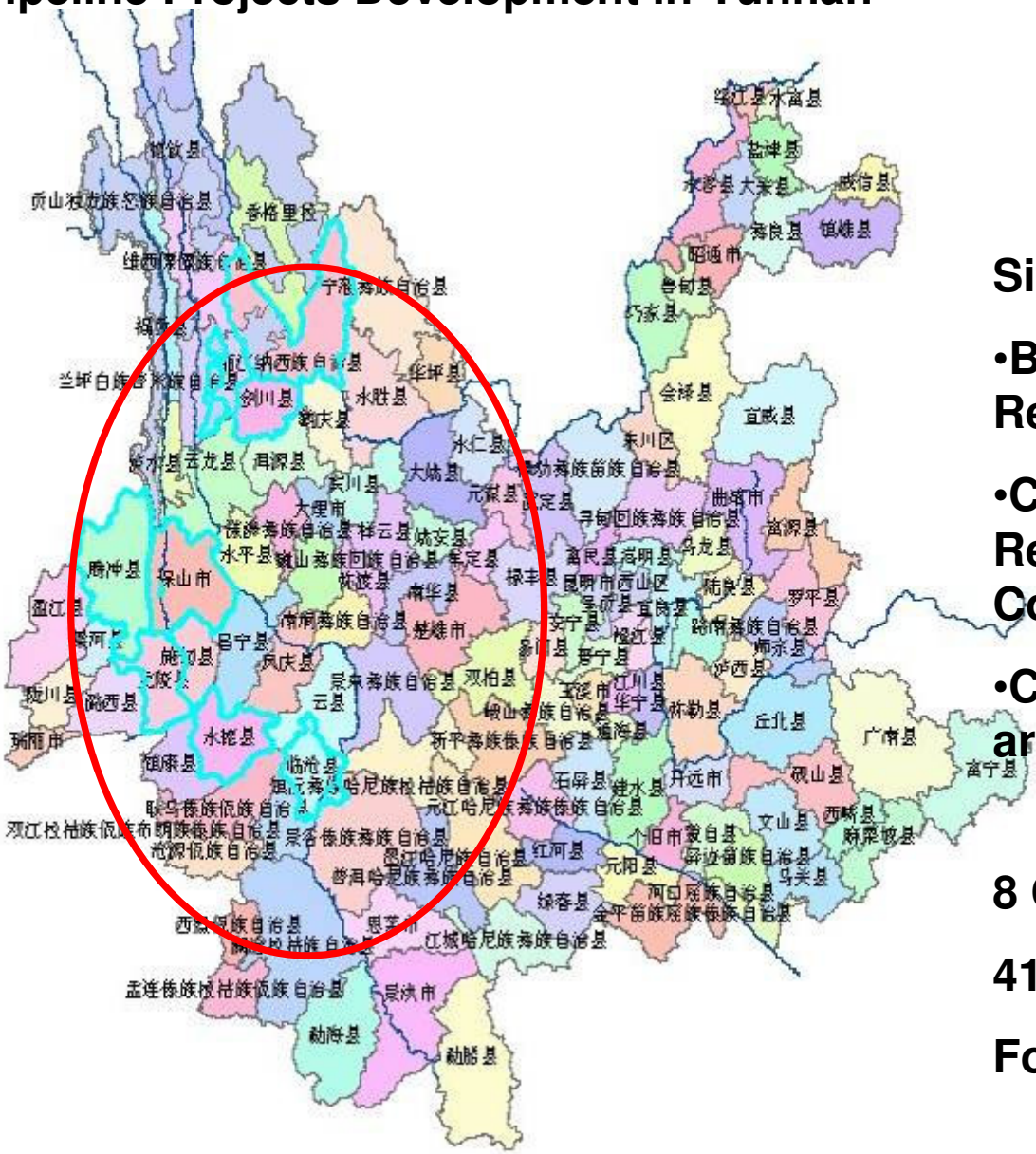
Project Goals:

- **Improve government A/R projects**
- **Payment for environmental services – state-own forestry company**
- **Habitat Restoration for key ecological area**

FCCB Demonstration in Southwest China



Pipeline Projects Development in Yunnan



Site Selection Criteria:

- **Biodiversity (Nature Reserve)**
- **Climate (Land For Reforestation& Climate Condition)**
- **Community (Low income area)**

8 Candidate Counties

41379 hectares of Land For Reforestation

Lessons Learned

- People and Partnership
  - Integrated government and community involvement
  - Utilizing experts to build in-country capacity
- Mechanism
  - Multiple Markets Approach
  - Pipeline projects development
  - Green Carbon Fund and aggregator


Thank You!