

# AR-CDM Case in Vietnam

*Rung Vang project – work in progress*

For Japan Forestry Forum

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## Outline of the presentation

### Rung Vang Reforestation and Carbon project

- Proposed Project Activity
- Current stage
- Baseline methodology and scenario
- Carbon scenario
- Leakage
- Difference between tCER and ICER
- Expected benefits to farmers
- Other benefits (Sustainable Development)
- Activities and budget



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### Propose Project Activity

- North-Central Vietnam / Thua Thien Hue province
- Forest land is allocated to local households (LUPLA)
- Total project area: 4000 ha
- 80% People belong to ethnic peoples
- 35% People live under the poverty line
- Average land area 2,5 ha per farmer
- Mixed native species and fast-growing exotic species (Acacia)
- Farmer decides on tree species
- Start with proto-project 100 ha



## Project Activities

Activity	Result
Land Use Planning and Land Allocation	Red-book certificate, Land entitlement household
Forestry extension	Household knowledge on plantations
Plantation establishment	Each farmer a forest
Use of the Clean Development Mechanism	Extra income household Positive environmental impact

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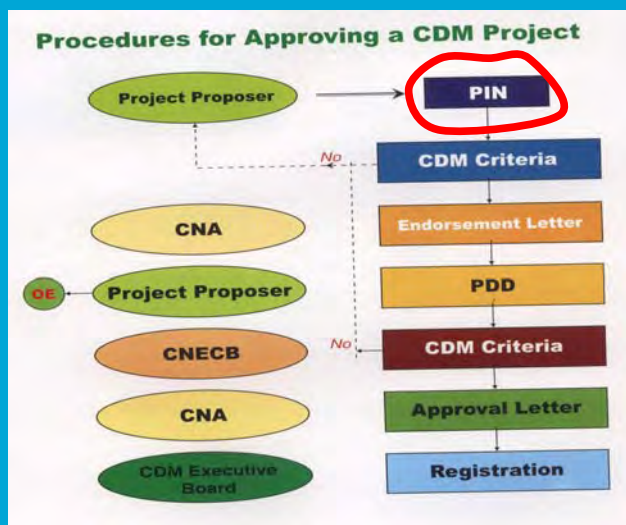
## Rung Vang: Issuance land certificates



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## Project Idea Note (PIN)



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## Baseline Methodology

Only approved methodology in AR-CDM to date:

### ARNM0010 Reforestation of Degraded Land

9 Criteria for application:

- (1) The land under the proposed AR-CDM project activity can continue to provide at least the same amount of goods and services as in the absence of the project activity
- (2) Lands to be reforested are severely degraded and the lands are still degrading
- (3) Environmental conditions and human-caused degradation do not permit the encroachment of natural forest vegetation
- (4) Lands will be reforested by direct planting and/or seeding

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## Criteria for application ARNM0010 (cont.)

- (5) Site preparation does not cause significant longer term net emissions from soil carbon
- (6) Plantation may be harvested with either short or long rotation and will be regenerated either by direct planting or natural sprouting
- (7) Carbon stocks in soil organic matter, litter and deadwood can be expected to decrease more due to soil erosion and human intervention or increase less in the absence of the project activity, relative to the project scenario
- (8) Grazing will not occur within the project boundary
- (9) Baseline approach 22 (a) (existing or historical changes in carbon stocks in the carbon pools within the project boundary) is the most appropriate choice

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## Baseline Scenario

1. Prove land is eligible
  - with satellite data from internet and FIPI of before 1990 to now with interposes
2. Define project boundary
  - with GPS coordinates in a Geographical Information System
3. Stratify the area
  - Based on the criteria: slope, vegetation status, soil depth, soil texture, elevation and rainfall
4. Establish the most plausible baseline scenario
  - Continued rotational clearing and burning for extensive agriculture, after which they are abandoned to leave vegetation to regenerate

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## Rung Vang: measuring plots with the GPS



## Baseline Scenario (cont.)

5. Estimation of baseline net GHG removals by sinks either by using the carbon gain-loss method or carbon stock change method

- choice for carbon gain-loss method; calculate for each stratum for each tree species :

$\Delta C_{G,ij,t} = [\text{merchantable volume (m}^3/\text{ha/yr)} \times \text{basic wood density (d.m./m}^3) \times \text{biomass expansion factor} \times 1 + \text{root/shoot ratio}] \times \text{acreage (ha)} \times \text{Carbon Fraction} \times 44/12$

-  $\Delta C_{\text{baseline},t} = \sum_{\text{stratum}} \sum_{\text{species}} \Delta C_{G,ij,t}$

## Baseline Scenario (cont.)

### 6. Prove additionality

- Investment barrier, there is no matching credit available (Loans have to be paid back in two years and are geared to agricultural activities). Without clear land entitlement small-holders also have no collateral to take a loan. Investment comparison analysis shows a IRR operating cashflow without CDM = 12% and IRR operation cashflow with CDM = 22%.

- Technological barrier, knowledge on indigenous species and the needed capacity of local Forestry Extension not available, which is proven during the proto-project

Prevailing practice barrier, supporting individual poor ethnic farmers in mountainous areas to start an economically viable plantation in forestry is the “first of its kind” in Hue province. Indigenous species are hardly planted; the whole sector focuses on fast-growing species for the pulp and paper industry.

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## Project Carbon Scenario

### 7. Actual net GHG removal by sinks

$$\Delta C_{\text{actual},t} =$$

$$\sum_{\text{stratum}} \sum_{\text{species}} \Delta C_{\text{reforestation},ij,t} - \text{GHG}_{\text{Emission (harvesting/ fertilizer/ other)}}$$

$$C_{\text{AR-CDM}} = C_{\text{reforestation},ij,t} - C_{\text{Baseline}} - \text{GHG}_{\text{Emission leakage (fuel consumption)}}$$

- Calculations for the project still are very variable because of:

- No final decision on models
- No final decision on areas to include (baseline vegetation)

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### Rung Vang: discussing forestry models



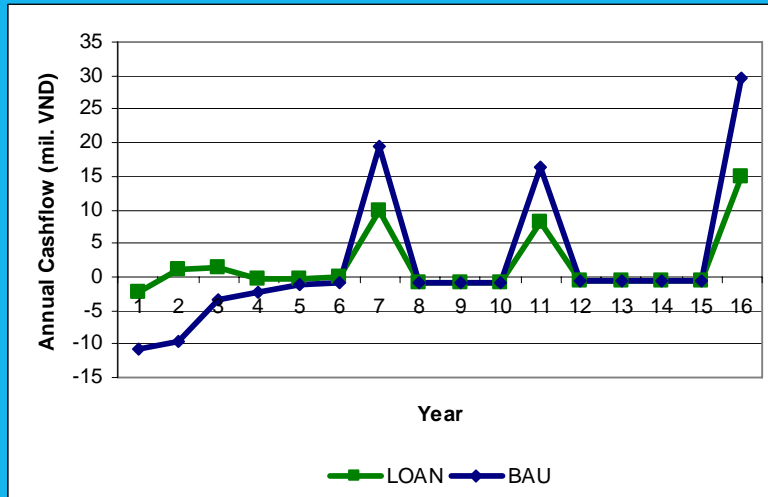
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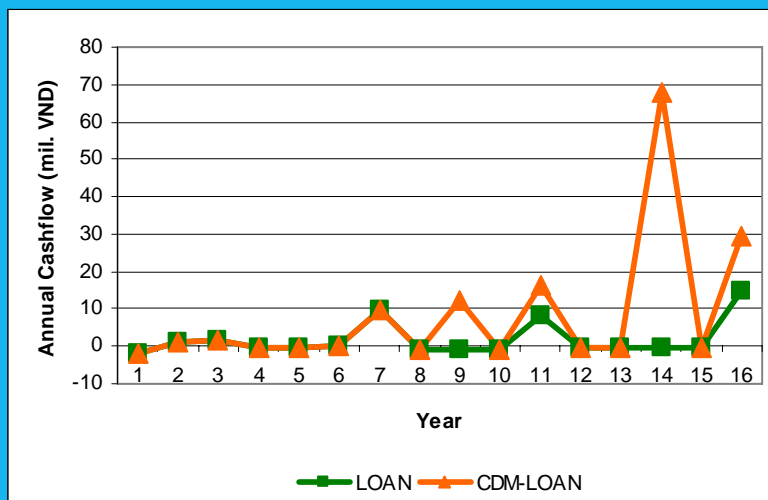
## Farmer cashflow business as usual (BAU) and with loan

-*Acacia Auriculaformis* mixed with *Hopea Odorata* -



## Benefit of CDM to farmers: revenue in between harvests

-*Acacia Auriculaformis* mixed with *Hopea Odorata* -



## Rung Vang: start of the proto-project



### Matrix of Benefits

	Micro
Formal	Household income increase Increase wood provision Increase fuelwood and agricultural produce Increase land ownership
Informal	Less vulnerability ethnical poor Knowledge level raised Grass-root democracy Women empowerment

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## Matrix of Benefits

	Meso	Macro
Formal	Wood production/ Employment/ Environmental awareness/ Water retention	Forest coverage/ Carbon Credits/ Contribution MDG 7
Informal	Less Land-slides/ Reduced pressure forest/ Less illegal logging/ Scenic beauty	Reduced risk Global warming/ Biodiversity/ Prestige CDM show case Vietnam

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Questions?



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Thank you for your attention!

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### Timeline DNA Project Idea Note (PIN) Endorsement

10 February 2006  
Resubmitted to MARD-  
ICD- previous submission  
got lost

13/14 December 2005  
AR-CDM workshop at  
MARD organized by JICA

2 November 2005  
AR-CDM training at MARD  
organized by JIPPRO

28 September 2005  
Submission to MARD-ICD

1 March 2005  
Pin submitted to DNA  
(MONRE) and to MARD-  
DOF (on advise of DNA)

18 March 2005  
Confirmation of receipt by  
MARD-DOF no answer on  
appraisal

May 2005  
CDM Workshop at MARD  
organized by Mitsubishi  
Securities and SNV- advise  
to resubmit to ICD



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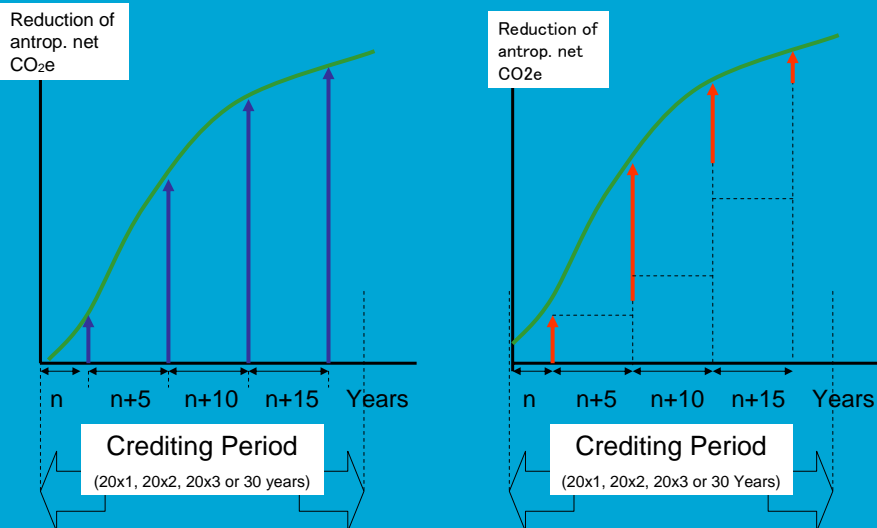
## Rung Vang: budget

#	Activity	Amount	%	Source
1	LUPLA	37,473	1%	ODA
2	Extension & training	514,935	19%	ODA
3	Direct plantation costs	1,217,226	46%	International bank (VN bank)
4	Advisory services	659,250	25%	SNV
5	Transaction costs CDM	142,000	5%	Mitsubishi Securities
6	Project management by District Authority	91,500	3%	ODA

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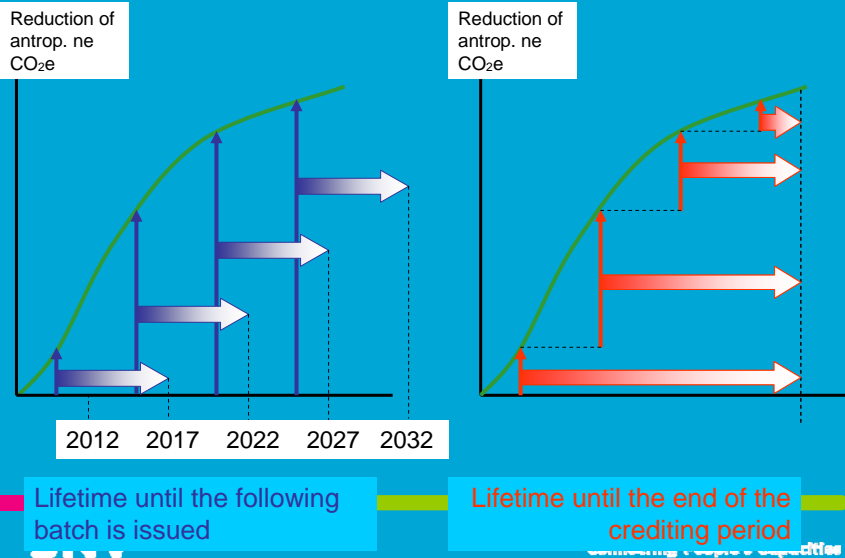
## AR-CDM tCERs and ICERs: Quantification



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## AR-CDM tCERs and ICERs: lifetime



## AR-CDM tCERs and ICERs: What happens if you loose carbon?

