



# Sourcing Eligible Lands for A&R CDM in Peninsular Malaysia; Challenges and Opportunities.

COP 13 Side Event

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**INSTITUT  
PENYELIDIKAN  
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**MS ISO 9001: 2000**



# Outline

- State of CDM in Malaysia
- Malaysia's National CDM Criteria
- CDM Forest Definition
- Land eligibility rules
- Land eligibility for A&R CDM
  - Canopy cover estimation by Zomer et. al
  - Current (2006) and 1990 land use maps
  - Implications of land use assumptions
- Results
- Other considerations
- Conclusions

# State of CDM in Malaysia

- DNA in place
- Project cycle developed
- Secretariat and developed and functional
- Currently hosting 21 registered projects (ranked 6<sup>th</sup>)
- To date, 463,736 CERs issued (ranked 8<sup>th</sup>)
- No A&R Projects registered
- Threshold definition for forest determined\*

\*As yet not submitted to the EB

# National CDM Criteria

- Criterion 1 - The project must support the sustainable development policies of Malaysia and bring direct benefits towards achieving sustainable development
- Criterion 2 - Implementation of CDM projects must involve participation of Annex I Party/Parties
- Criterion 3 - Project must provide technology transfer benefits and/or improvement in technology
- Criterion 4 - Project must fulfill all conditions underlined by the CDM Executive Board
- Criterion 5 - Project proponent should justify the ability to implement the proposed CDM project activity



## Defining forests for CDM

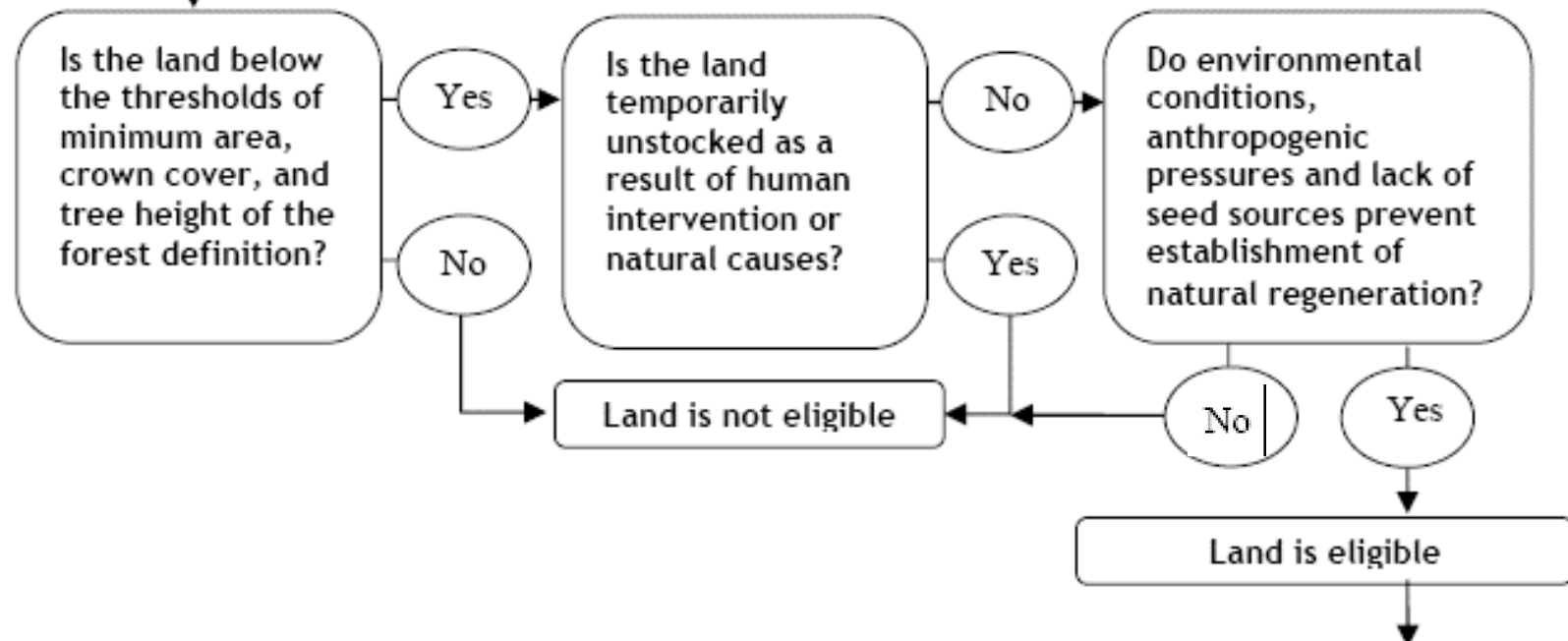
- Developing (Non-Annex I) countries must provide a country-specific forest definition before they can host CDM-AR projects.
- Country-specific values for crown cover, minimum area, and tree height, must be decided upon from a range provided in the forest definition given in the Marrakech Accords (UNFCCC 2002a,b) of the Kyoto Protocol.
- Forest in Peninsular Malaysia has been defined as :
  - Having the potential to reach a height of least 5 m at maturity in situ;
  - Possessing a tree crown cover (or equivalent stocking level) of 30% or more, and,
  - Occupying an area of land 0.5 hectares in size or more.

## Canopy cover, minimum land area and minimum tree height at maturity as selected by 23 parties

Albania	30	0.1	3
Honduras	30	1	5
Antigua and Barbuda Argentina Brazil	30	1	5
India	30	0.05	5
Cambodia China	20	0.067	2
Madagascar	30	1	5
Colombia	30	1	5
Mali	30	1	2
Costa Rica	30	1	5
Nicaragua	20	1	4
Democratic Republic of the Congo	30	1	5
Niger	30	1	4
Dominican Republic	20	0.0629	5
Republic of Moldova	30	0.25	5
El Salvador	30	0.5	5
Uganda	30	1.0	5
Germany Ghana	30	1.0	5.0
Viet Nam	30	0.5	3
Ghana	30	1.0	5.0
Yemen	30	0.5	3

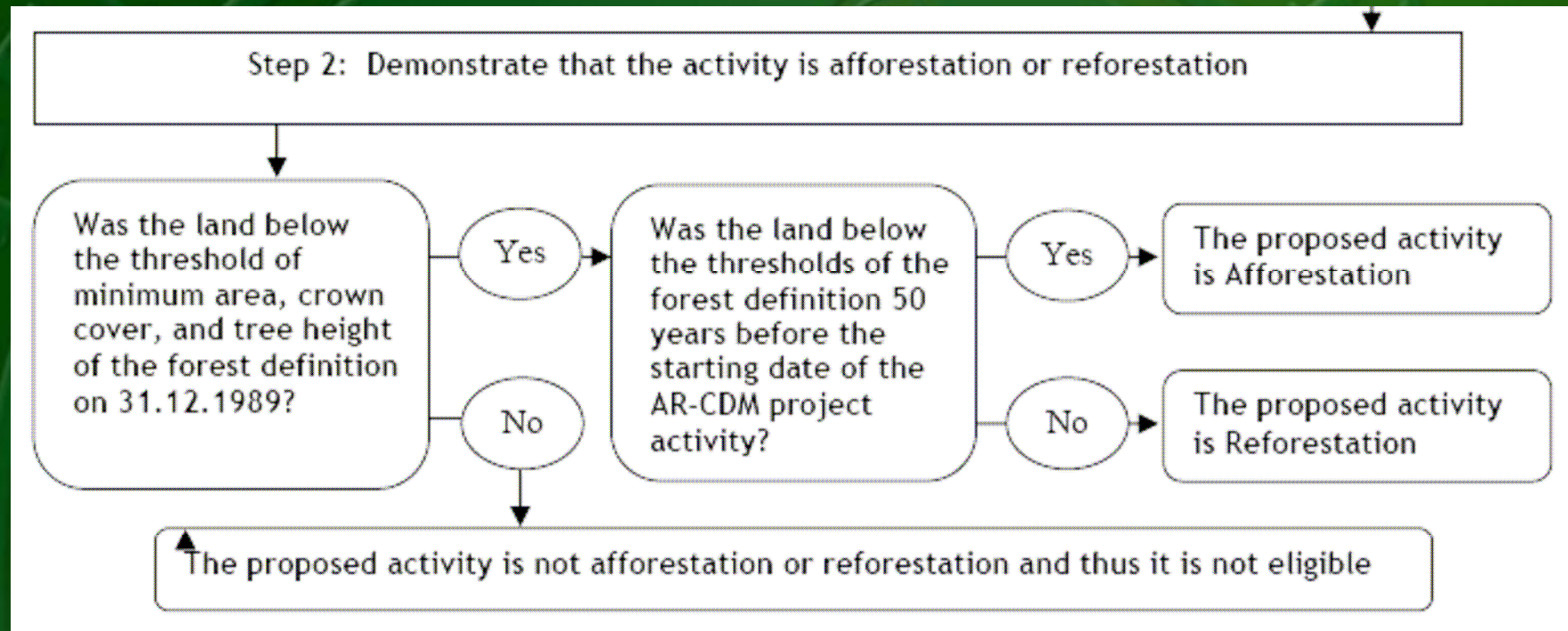
# Land eligibility for A&R CDM

Step 1: Demonstrate that the land is not a forest at the start of the CDM-AR project activity



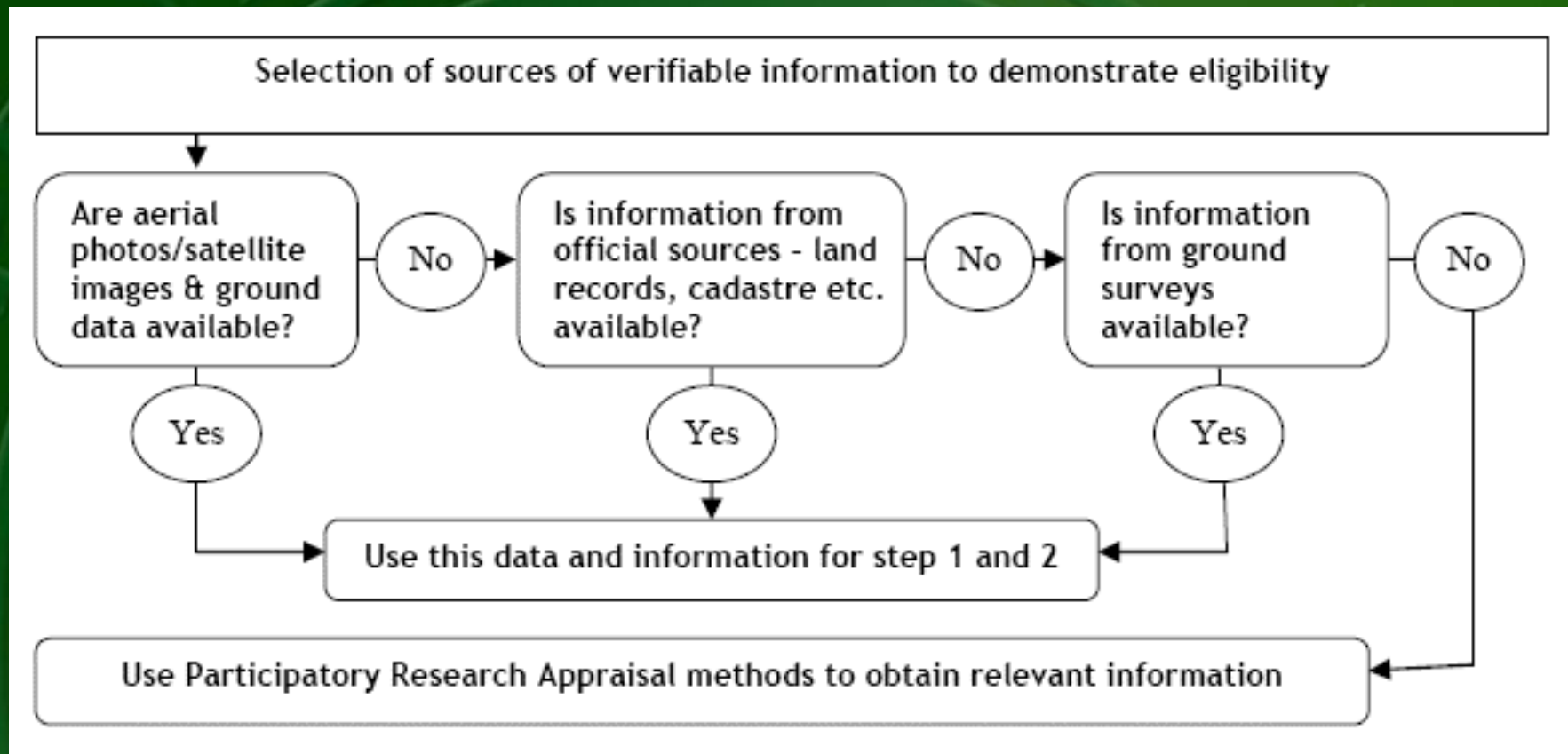
Step 2: Demonstrate that the activity is afforestation or reforestation

# Land eligibility for A&R CDM





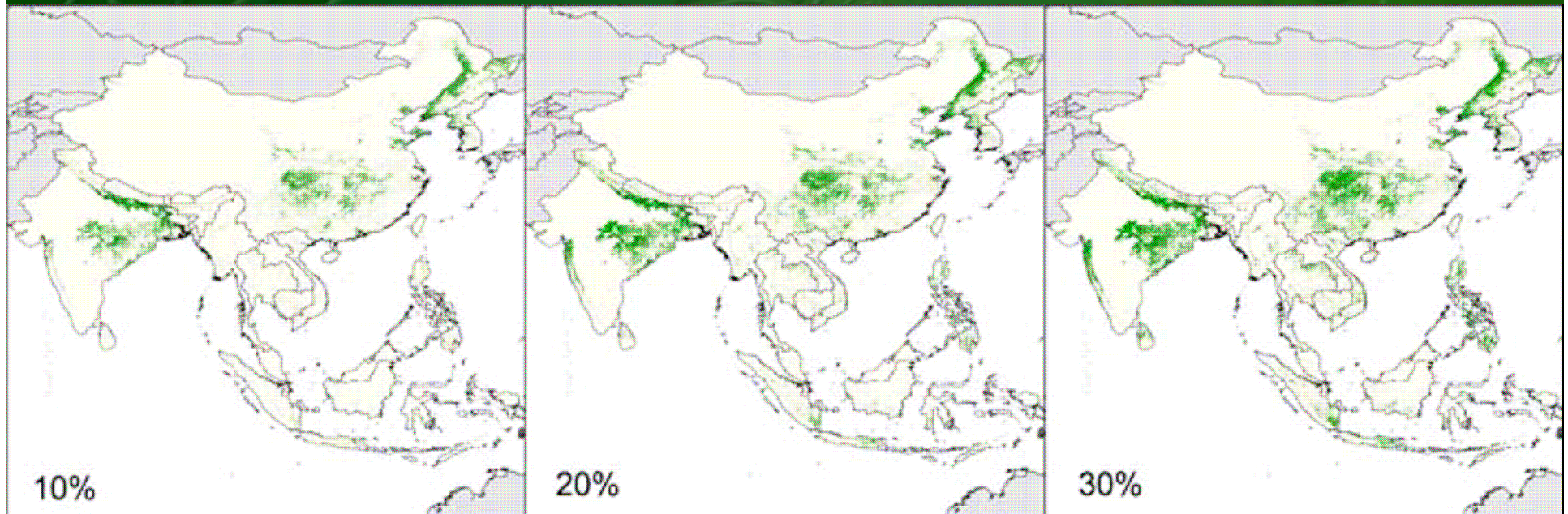
# Land eligibility for A&R CDM



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## A&R CDM Eligibility for Asia as a function of Canopy Cover



## Total area for CDM-AR at specified crown cover density threshold (sq. km.)

Country	Crown cover density threshold				
	10%	15%	20%	25%	30%
Burma	8122	13110	18555	23621	27605
Cambodia	4429	5680	7294	9147	11759
Indonesia	38649	63746	94896	27811	155272
Laos	990	2420	4768	7177	10027
Malaysia	2453	3692	5282	7231	8961
Philippines	17370	29041	46649	67285	84656
Thailand	9531	18488	29258	39478	48171
Vietnam	12852	20265	29632	38264	45696

Malaysia stands to increase eligible land areas by 265% or 6,509 square km in moving from 10% to 30% crown cover.



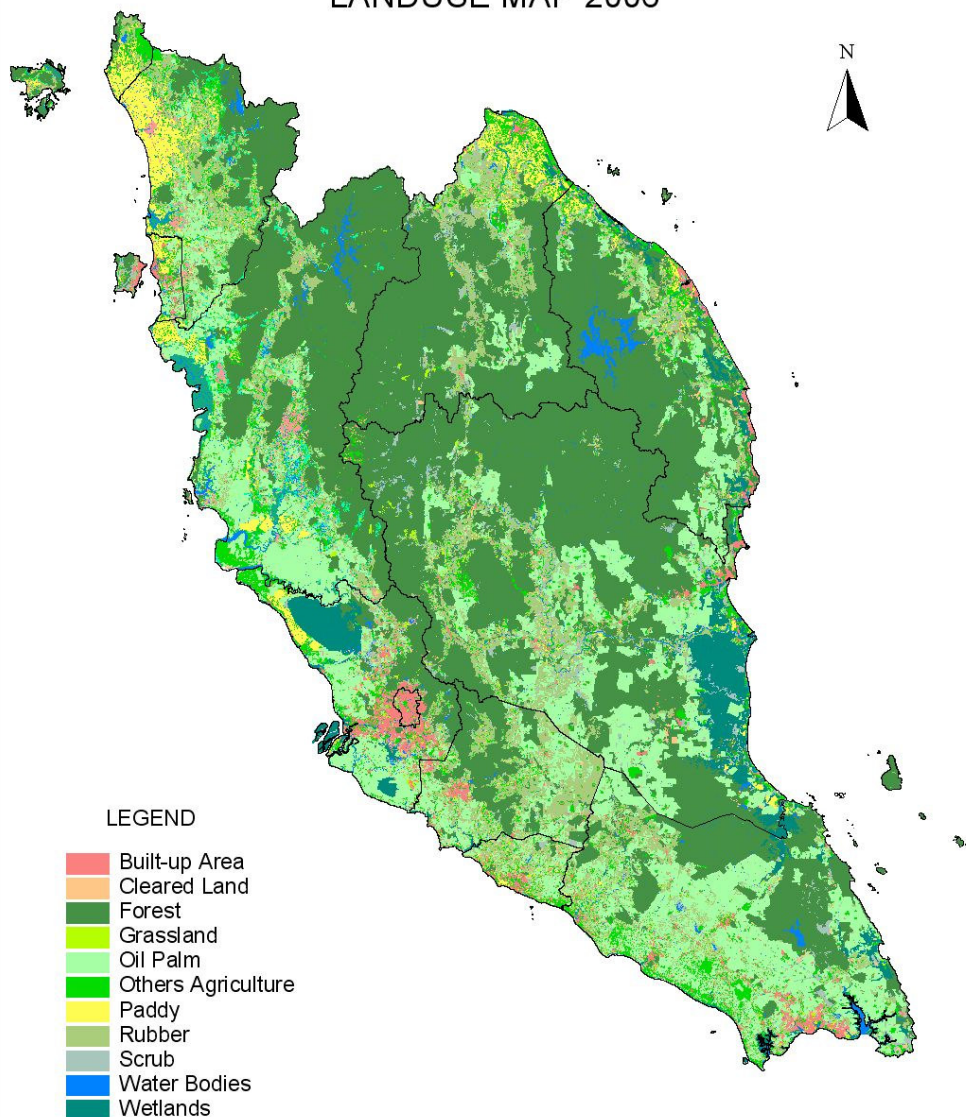
## National Forest Statistics and Implications for CDM Eligibility

- Total land area – 32,973,300 ha      59% forested
- Peninsular – 13,157,300ha (40%)      44% forested
- Sabah – 7,371,100 (23%)      56% forested
- Sarawak – 12,444,900 (37%)      75% forested
- A further 13% is planted to oil palm and rubber plantations

### FINDINGS

- Eligible at 10% threshold canopy cover 245,300 (0.74%)
- Eligible at 30% threshold canopy cover 896,100 (2.72%)

LANDUSE MAP 2006

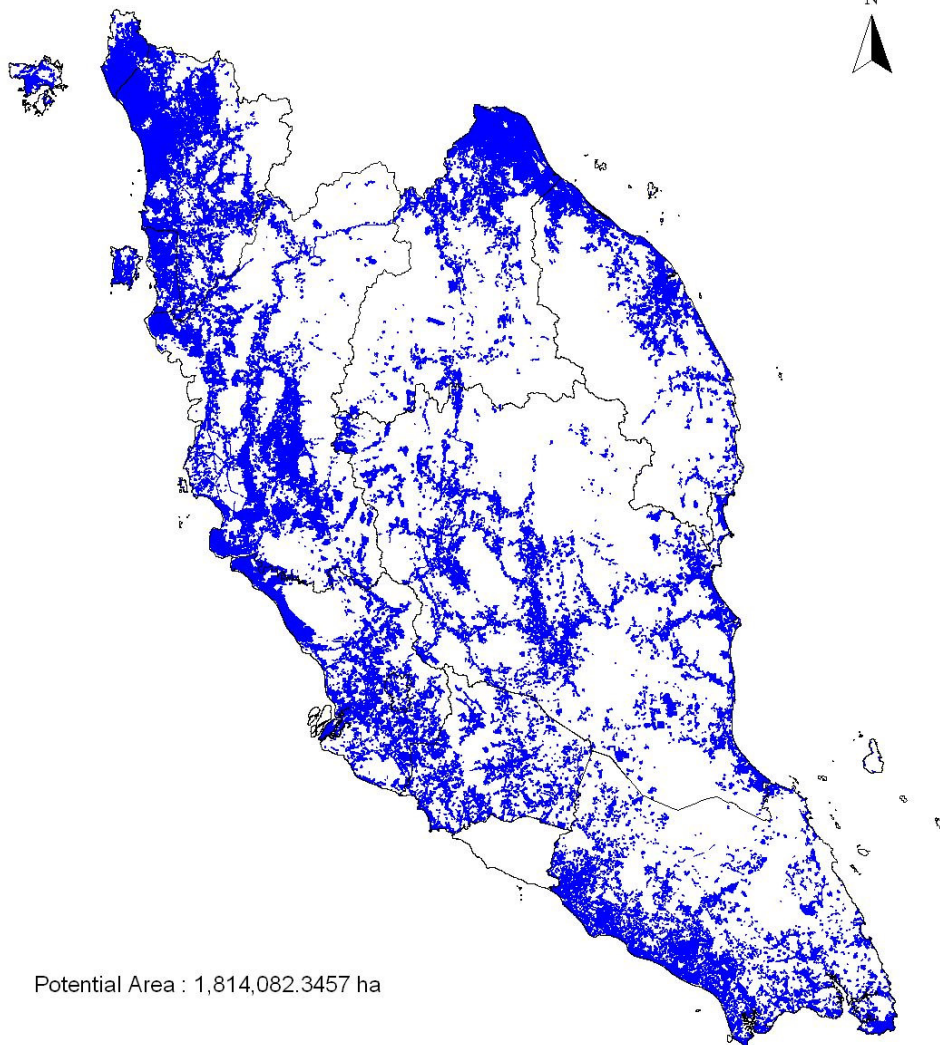


## Peninsular Malaysia Land Use Map 2006

01:2000



**POTENTIAL AREA FOR CDM IN YEAR 2006**



Potential Area : 1,814,082.3457 ha

## Potential CDM area 2006 Criteria

### Ineligible

Forest  
Rubber  
Oil Palm

### Unsuitable

Urban  
Water Bodies  
Wetlands  
Rice Fields

### Potential

Grasslands  
Cleared lands  
Scrub lands  
Other Agriculture

01:2000





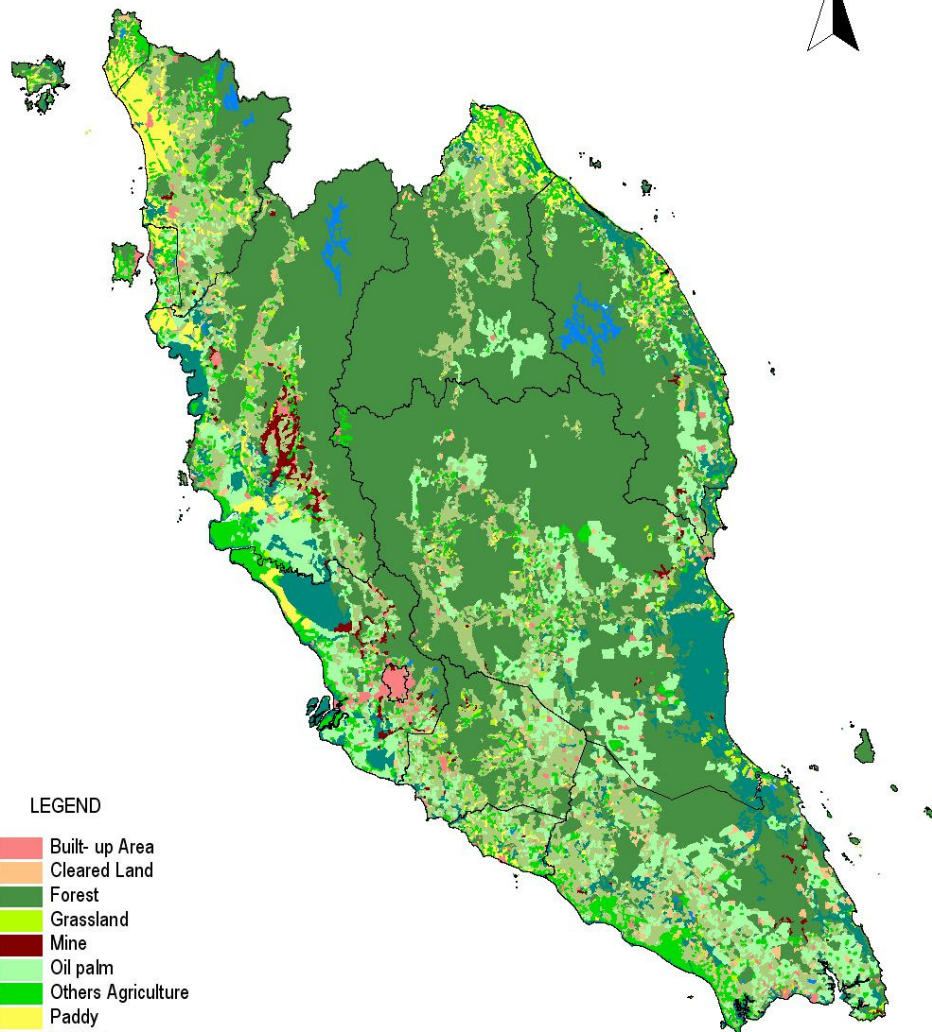
## Land classified as non-forest in 2006

State	Eligible land (ha)	Percentage
Johor	971473.546	25
Pahang	936593.377	23
Perak	613432.775	15
Selangor	336253.639	8
Terengganu	281185.566	7
Kelantan	244701.375	6
N. Sembilan	233817.864	6
Kedah	227827.743	6
Melaka	87580.986	2
Penang	48043.772	1
Perlis	23962.665	1

Classification	Hectarage	Percentage
ineligible	7542965.0840	57
unsuitable	1601523.9710	12
potential	4031777.5510	31



## LANDUSE MAP 1990



### LEGEND

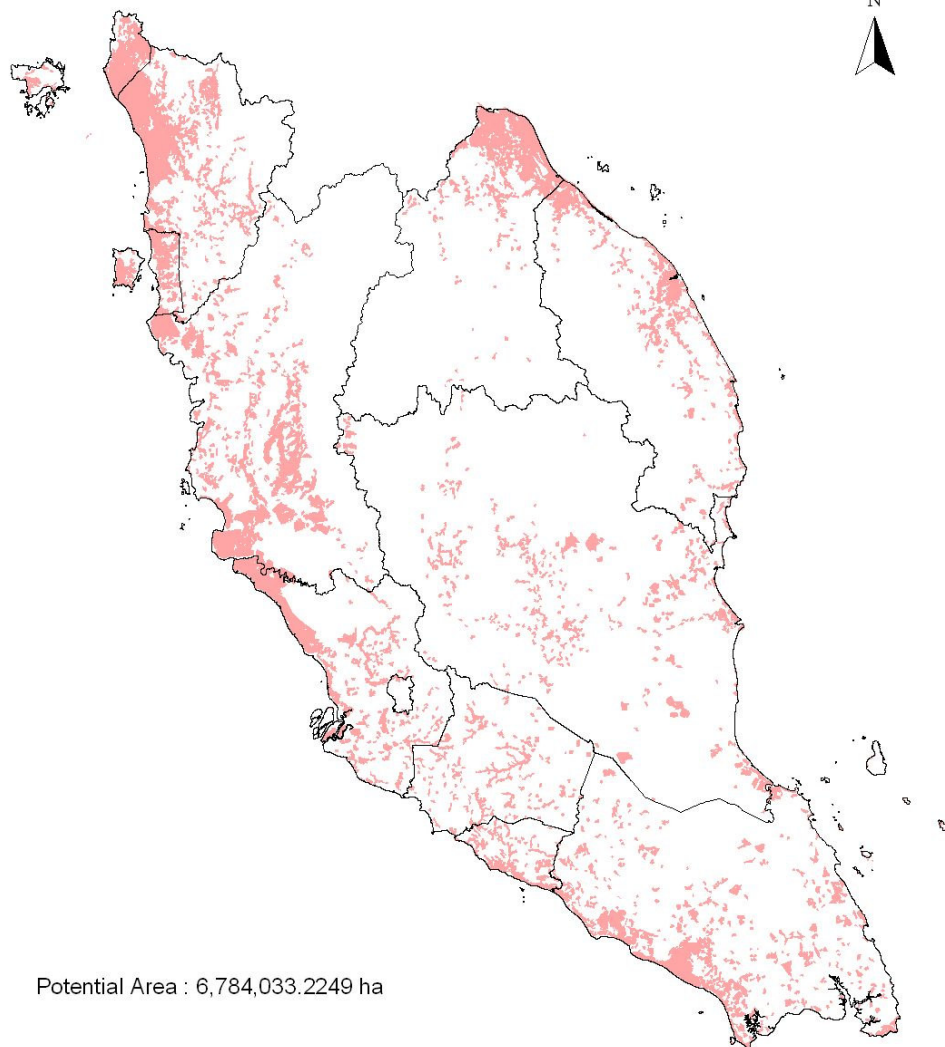
- Built-up Area
- Cleared Land
- Forest
- Grassland
- Mine
- Oil palm
- Others Agriculture
- Paddy
- Rubber
- Water Bodies
- Wetlands

## Peninsular Malaysia Land Use Map 1990

01:2000



# POTENTIAL AREA FOR CDM IN YEAR1990



Potential Area : 6,784,033.2249 ha

## Potential CDM area 1090 Criteria

### Ineligible

Forest  
Rubber  
Oil Palm

### Unsuitable

Urban  
Water Bodies  
Wetlands  
Rice Fields

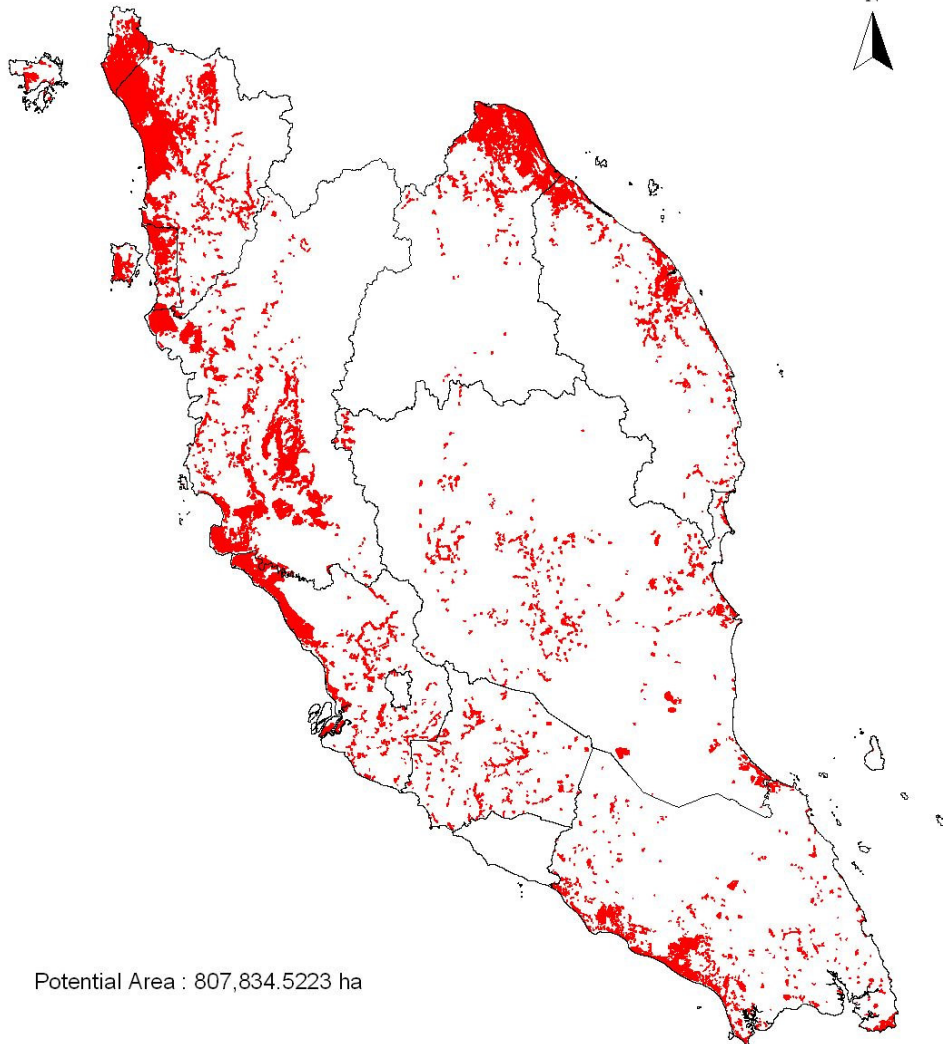
### Potential

Grasslands  
Cleared lands  
Scrub lands  
Other Agriculture

01:2000



**POTENTIAL AREA IN 1990 OVERLAY WITH POTENTIAL AREA IN 2006**



Potential Area : 807,834.5223 ha

## Overlay of 2006 and 1990 Potential CDM Areas

01:2000





# Land Use Change between 1990 and 2006

LAND USE	1990	2006
Built-up Area	164,270.8460	409,582.3140
Cleared Land	103,754.6835	121,349.1850
Forest	6,808,739.0476	6,007,838.4040
Grassland	73,898.8694	73,935.7880
Oil Palm	1,496,780.7571	2,545,893.0550
Others Agriculture	648,259.6250	866,223.3230
Paddy	426,720.0477	374,657.8670
Rubber	2,294,983.0153	1,535,126.6800
Scrub/mines	109,482.5744	424,376.2000
Water Bodies	73,663.4061	255,155.8830
Wetlands	928,992.6837	562,127.9070



# Good News, Bad News

## Challenges

- On the surface, limited land area for large-scale A&R CDM Projects
- Fragmented areas complicate implementation and management
- Land tenure arrangements
  - Government/State land
  - Alienated land

## Opportunities

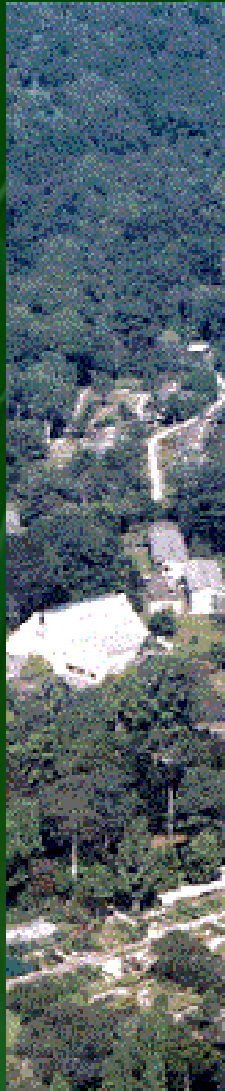
- Special case 'niche' projects
- Small scale A&R Projects
  - Simplified eligibility criteria
  - CERs limited by 8Ktonne per year project ceiling

## Other Considerations

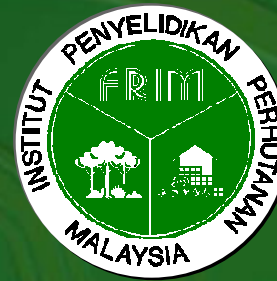
- Harvested or otherwise degraded peat swamp forest would be eligible if harvested prior to the cut-off date.
- Urban parks and green spaces larger than 0.5 ha would qualify, including mandatory urban green spaces required of developers.
- Tax incentives by the government can be helpful in attracting and maintaining projects.

# Conclusions

- A&R eligible land can be sourced in Peninsular Malaysia
- Attention should be given to special case or niche projects
- Land availability differs by state with Johor, Pahang and Perak accounting for approximately 60% of the eligible land



**Terima kasih.**



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