

## Low-carbon Development in Asia - Challenges and JICA's Assistance -



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## 1. JICA's Approach: Development Cooperation for Low-carbon and Climate Resilient Development

Comprehensive Assistance



Climate Change, A Global Agenda



Climate Compatible Sustainable Development

Cooperation Technica

Assistance Financia

**Policy Dialogue** 

**Public-Private** Partnership

Research / Studies

< Mitigation: Low-carbon Society >

- Strategic Mitigation Actions (NAMA、MRV、REDD+, etc.)\*
- > Low-carbon Technologies (Renewables, Energy Efficiency, etc.)
- > Efficient Use of Resources, etc. (Mass Transit, Smart-grid, etc.)

**Policy & Institutional Reform,** Finance Mechanism, **Human Resource Development** 

- Modeling / Vulnerability Assessment (Climate Prediction, GIS\*\*, etc.)
- > Enhancing Adaptive Capacity (Awareness, Early Warning System, etc.)
- > Resilient Infrastructure (Irrigation, Flood Control, etc.)

Adaptation: Climate Resilient Society>

 NAMA (Nationally Appropriate Mitigation Actions) MRV (measurable, reportable, verifiable) REDD+ (Reduction of Emission from Deforestation and Degradation)

\*\*GIS (Geographic Information System)

**Energy, Transport, Forestry,** Waste Management, etc.

Reduction of GHG **Emission** 

Responding to Climate Change

> **Enhancing Adaptive** Capacity

**Equitable** Growth

**Sustainable Development** 

> Human Security

Disaster Risk Management, Water, Agriculture. Sanitation, etc.

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## 2. Strategy to Realize Low Carbon Society in Asia

## 1.Extending Low Carbon Development

- Comprehensive support from research, policy and institutional improvement down to transformational impact at the project level
- Promoting low-carbon development utilizing cuttingedge technologies of Japan

## 2. Regional Networking for Low-carbon Society

In the are of research, policy planning and the implementation, promoting dialogue and exchange lessons learned through mutual training among Asian countries



## 3. Assistance for Low-carbon Development

Figuring out current social, economic, natural and meteorological circumstances

Designing possible

Designing possible development scenarios

Sorting out tangible policies and measures to achieve a low-carbon development

- Adjusting appropriate national policies and measures
- Introducing innovative lowcarbon technologies
- Utilizing other measures including market mechanisms

### **Challenges for Asia**

- Vision & Analysis of Lowcarbon Development Path
- Strategy and Financing Plans for Investment
- Promoting Private Sector Participation

Analyzing each policy and measure in terms of costeffectiveness, technology availability, etc.

Developing Nationally Appropriate 'ww-carbon Development Strategy

Capacity Development
Correcting Data and Developing Database



# 4. Malaysia-Japan Joint Research Project for Development of LCS Scenarios for Asian Regions (TA)

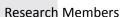
Science and Technology Research Partnership for Sustainable Development (SATREPS)

### Science & Technology Research

•To Address global issues through science & technology innovation by Japan's world-leading technology & soft power

### International Cooperation

 Boosting self-reliant research & development capacity in developing countries through joint research by Official Development Assistance(ODA)









Modeling Workshop

- **Develop methodology** of LCS Scenarios **suitable for Asian countries** in Malaysia as a showcase of rapid development regions in Asia
- Incorporate research outputs into real planning of regional/national development to establish low carbon society in Malaysia
- Diffuse project outcomes to other Asian countries through training in Malaysia to enhance low carbon development in whole Asia

### 8. Outline of "Project of Capacity Development for Climate Change Strategies in Indonesia"

### 1. CURRENT STATUS

- Substantial GHG emissions, if including deforestation and peat land conversion
- •Increase in GHG emissions due to economic development and population growth
- · High vulnerability to climate change impacts, particularly among poor communities

#### 2. THE EFFORTS BY THE GOVERNMENT OF INDONESIA

- · National Action Plan on Climate Change; COP13 in Bali (2007)
- · National Development Planning: Indonesia Responses to Climate Change; Establishment of National Council on Climate Change (2008)
- •Indonesia Climate Change Sectoral Roadmap; Announcement of the commitment to 26% GHG emission reduction (2009)
- Association with the Copenhagen Accord (2010)

#### 3. INDONESIA'S 26% GHG EMISSION REDUCTION

<7 Areas of Mitigation Actions>

- ①Sustainable Peat Land Management, ②Reduction in Rate of Deforestation and Land Degradation, ③Development of Carbon Sequestration,
- Promotion of Energy Efficiency, SDevelopment of Alternative and Renewable Energy Sources, Reduction in Solid and Liquid Waste,
- (7) Shifting to Low-Emission Transportation Mode

#### PROJECT OUTLINE

- (1) Counterpart: National Development Planning Agency (BAPPENAS), The Agency for Meteorology Climatology and Geophysics (BMKG), Ministry of Environment (KLH), etc.
- (2) Area: Indonesia at the national level and pilot areas
- (3) Duration: 5years from 2010
- (4) Project Budget: about 1.1billion yen
- (5) Inputs: ①experts (chief advisor, vulnerability assessment, national GHG inventory, project coordinator) & consulting teams,
- 2)training (long/short term), (3)local project cost, etc.

### CHIEF ADVISOR (JICA Senior Advisor)

#### SUB-PROJECT1

Formulate NAMA in a MRV manner and Integrate adaption into development planning

- Counterpart: BAPPENAS
- ■Sub-Project Outputs:
- ①Capacity for formulating NAMA in a MRV manner ② Capacity for integrating adaptation into development planning
- ③ Background study for RPJMN 2015-2019 on low carbon development policy
- Pilot sectors for NAMA: sector/sub-sectors relating to Energy Efficiency and Waste
- · Pilot Sites: to be determined

### SUB-PROJECT2 Vulnerability Assessment

- Counterpart: BMKG
- ■Sub-project Outputs:
- ① Capacity for climate change projection and verification (assessment of exposure)
- **②**Capacity for assessment of adaptive capacity
- · Pilot Site: Bali
- Produce vulnerability assessment report, including vulnerability maps

### SUB-PROJECT3 Prepare national GHG Inventories

- Counterpart: KLH
- Sub-project Outputs:
- ① Capacity to periodically and systematically collect and compile data necessary for national GHG inventories
- ② Accuracy and reliability of GHG inventories for each sector
- ③institutional arrangement for preparing national GHG inventories
- Produce draft national GHG Inventory reports (2008 and 2010)

### Stakeholders in Indonesia

Other donors

Inputs

from Japan

- •BAPPENAS
- •KLH •local governments, eic
- GTZ (NAMA/MRV)
- •EU (MRV), etc.
- ·long-term expert (JICA Senior Advisor) & consultant team
- ·long- & short-term training, etc.

### •BMKG •KLH •relevant line ministries •local governments, etc.

- •GTZ (vulnerability assessment). etc.
- long-term expert
   (Stockholm Environmental Institute)
- •long-term training(Ibaraki Univ.), etc.

- •KLH •relevant line ministries
- ·local governments, etc.
- ·UNDP (national communication), etc.
- ·long-term expert (National Institute of Environmental Studies GHG Inventory Office) & consultant team, etc.

#### PROJECT FRAMEWORK

Overall Goal: Promote mitigation and adaptation actions for climate change in Indonesia

Project Purpose: Capacity Development of the Government of Indonesia to formulate climate change policies

#### SUB-PROJECT1

1)NAMA in a MRV manner

②Integration of adaption into development planning ③Background study for RPJMN 2015-2019



SUB-PROJECT2 Vulnerability Assessment SUB-PROJECT3
National GHG Inventory

### 1. Integral Approach

Linkage with the Climate Change Program Loan

### 2. Flexible Approach

Set flexible TOR for 5-year project duration to be able to respond to the changing landscape of negotiation process on post-2012 framework.

3. Actively Share the outputs and lessons learned with International community

e.g.) UNFCCC/COP, academic societies

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# 5. Extending Low Carbon Development in Asia Utilizing Cutting-Edge Technologies of Japan (A Case of Indonesia)



- Public funds not enough to develop the estimated 27,000 MW potential in Indonesia's geothermal power
- Private sector finance is crucial to develop geothermal, a lowcarbon solution to Indonesia's power supply

### **Upstream Policy Support**

- Low Carbon and Resilient Development Program (ODA concessional loan)
- > Supporting MRV, NAMA (technical assistance)

## Preparation of Master Plans (Technical Assistance)

- Geothermal Power Development
- Mid-long Term Thermal Power Development

## Supporting Infrastructure Development

(ODA concessional loan + introduction of Japanese technology)

➤ Promoting construction of highly efficient coal fired power plants and geothermal power plants



- JICA listens to the private sector to identify barriers for participation
- JICA discusses with the Government of Indonesia on private sector engagement policy in geothermal
- Regulatory environment is improved

- Promoting economic development & low-carbon society
- Introducing monitoring system toward the goal of 26% GHG reduction by 2020 set by the Government of Indonesia

# Extending Low Carbon Development in Asia Utilizing Cutting-Edge Technologies of Japan (A Case of Vietnam)



Photo: from recent training course for Vietnam power engineers

### **Upstream Policy Support**

- Support Program to Respond to Climate Change (SP-RCC, ODA concessional loan)
- Supporting GHG Inventory (technical assistance)



# Preparation of Master Plans (Technical Assistance)

- Promoting Energy Efficiency and Conservation
- Promoting economic development & GHG emission reduction
- Financing and consulting to firms for introducing energy efficient equipment

Energy Efficiency and Renewable Energy Promotion (ODA concessional loan + introduction of Japanese technology)



## 7. Low-carbon and Climate-resilient Development Framework - Pioneering Examples from Indonesia and Vietnam -

Towards a Low-carbon and Climate-resilient Society

National Development Strategy, Budget Allocation & Finance
Plans and Policy Coordination

### Mitigation Actions

- > NAMA\* and MRV of Mitigation Effects
- > Energy, Forestry, Transportation, etc.

### **Adaptation Actions**

- ➤ Climate prediction & vulnerability assessment
- > Disaster prevention, agriculture, fisheries, etc.

Platform for Policy Coordination

### **Development Policy Loan for Climate Change**





## Physical Infrastructure <u>Development</u>

- •Renewable energy
- Energy efficiency
- Urban transport
- •Flood management, etc.

### Policy & Institutional Improvement

- Geothermal IPP investment regulations
- Energy efficiency labeling system, etc

### <u>Capacity</u> <u>Building</u>

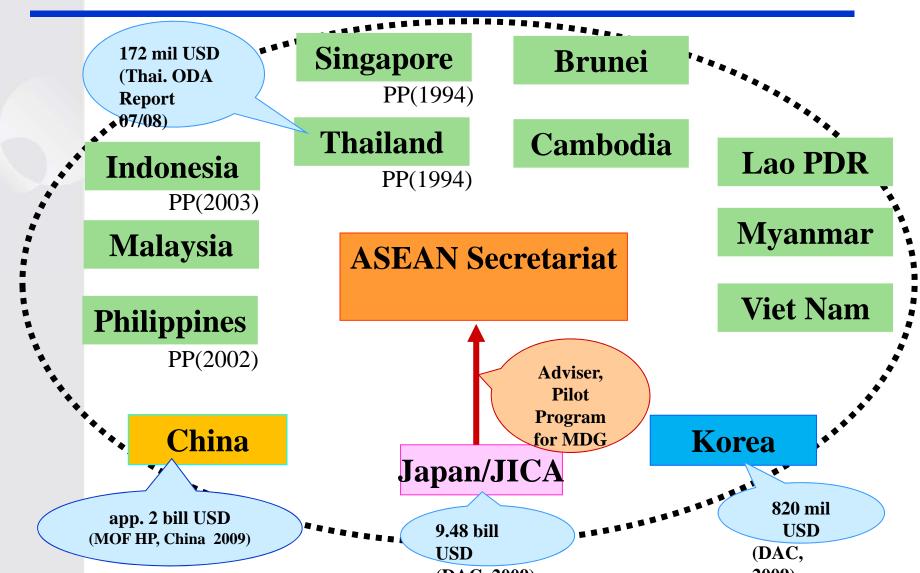
- Climate change projection model analysis
- Formulation of NAMA\* in a MRV manner, etc.

Individual
Policy,
Program
and Projects

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### 8. Regional Partnership to achieve Low Carbon Society



**PP:** Partnership Program is a strategic and comprehensive framework where JICA and Partner country jointly implement technical cooperation.



# 9. Supporting IAI (Initiative for ASEAN Integration) for Networking toward Low-carbon Society

### **CLMV**

Cambodia, Laos, Myanmar, Vietnam

Needs



IAI Unit of ASEAN

Resources

### **ASEAN 6**

Brunei, Indonesia, Malaysia,
Philippines, Singapore,
Thailand

### **J-SEAM**

(Japan-Southeast Asian Meeting for South-South Cooperation)
Supporting Partnership for Training in Third Countries (Environmental Management, Irrigation Management, etc.)

Intra-regional Partnership including JICA

(Matching Needs & Resources)

Example: Pilot Program in Laos:

Promoting "Environmental Sustainable City" in Laos (including preparation of guideline)



## 10. Future Policy Development

(Networking and Extending Low Carbon Development in Asia, the Year of Sharing and Promoting Ideas (2012))

- 1. East Asia Low-carbon Growth Partnership (Tokyo)
  Initiative for constructing low-carbon growth model
  in East Asia, the global growth center and the
  largest emitter of GHG
- 2. Asian Development Forum (Bangkok)
  Deepening the understanding on policy and actions for environmental protection by emerging countries in Asia, focus on Green Growth
- 3. IMF World Bank Annual Meeting (Tokyo)
- 4. COP18 (Qatar)



Thank you for your attention.

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