Mainstreaming Low Carbon and Climate Resilient Growth
- JICA’s approach -

June 21, 2011

Tomonori Sudo, Ph.D.,
Expert, Japan International Cooperation Agency (JICA)
Sudo.tomonori@jica.go.jp
What is JICA
The current JICA was inaugurated in October 2008 with a merger of
1) Technical Cooperation of the existing JICA,
2) Loan Aid operation (ODA loans and Private Sector Investment Finance (PSIF)) of the Japan Bank for International Cooperation (JBIC), and
3) a large portion of Grant Aid implementing operation of the Ministry of Foreign Affairs (MOFA).

JICA provides strategic and effective ODA through integrated, comprehensive and seamless implementation of Technical Cooperation, Loan Aid and Grant Aid as one of the largest ODA executing agency in the world.

※Non-project Assistance and Emergency Grant Assistance remain with MOFA
Various Schemes of JICA Assistance to Meet the Needs of Developing Countries

- **Technical Cooperation**: includes …
  1. dispatch of experts
  2. acceptance of training participants
  3. provision of equipment for efficient implementation of assistance by experts, etc.
  4. assistance for development planning and public projects

- **Loan Aid (ODA loans, PSIF)**: includes …
  1. project loans
  2. program loans (sector support / development policy support)
  3. financial intermediary loans (“two-step” loans)
  4. engineering services (E/S) loans

- **Grant Aid**: includes …
  1. grant aid for general projects
  2. program grant aid for environment and climate change

- **Others** (research, volunteers, disaster relief, etc.)
Development Agenda and Climate Change - Toward “Low Carbon Society”

- Economic Development
- Poverty
- Industrialization
- Forest Conservation
- Biodiversity
- Water Resource Management
- Energy
- Transport
- Urban Development
- Education
- Waste management
- Rural Development
- Agriculture
- Health & Sanitation
- Use of fossil = Increasing GHG Emission
- Secure Developmental benefit
- Adaptation
- Reducing GHG
- Toward Low Carbon Society

Economic Development

Poverty

Environmental SD

Economic SD

Social SD
Climate change benefit as co-benefits of development
Cooperation for Sustainable Development from various levels

Donor’s Assistance
- Financial Assistance
- Technical Assistance

Generating Developmental benefit

Toward Low carbon and climate resilient growth

Mainstreaming Climate Change Concerns into Development Actions

Long-term vision

Development Plan

Sector Policies

Programs

Projects
Development Cooperation for Climate Change
JICA’s Approach

Comprehensive Assistance → Climate Change, A Global Agenda → Climate Compatible Sustainable Development

<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>

Energy, Transport, Forestry, Waste Management, etc.

Equitable Growth

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

Human Security

Reduction of GHG Emission

Responding to Climate Change

Enhancing Adaptive Capacity

- Sustainable Development
- Responding to Climate Change
- Enhancing Adaptive Capacity
- Human Security
- Disaster Risk Management, Water, Agriculture, Sanitation, etc.

• NAMA (Nationally Appropriate Mitigation Actions), MRV (measurable, reportable, verifiable), REDD+ (Reduction of Emission from Deforestation and Degradation)
**GIS (Geographic Information System)
Synergy between Technical Cooperation and Loan Aid

[Technical Cooperation]
Project of Capacity Development for Climate Change Strategies in Indonesia

Sub-Project 1
1) NAMA in a MRV manner
2) Mainstreaming climate change adaptation into development planning

Sub-Project 2
Vulnerability Assessment

Sub-Project 3
Preparation of National GHG Inventories

[Loan Aid]
Climate Change Program Loan / Policy Matrix

Pillar 1: Key Policy issues
1.1: Mainstreaming Climate Change in Nat'l Development Program
1.2: Financing Scheme & Policy Coordination for Climate Change
1.3: GHG Emission & Absorption Measurement

Pillar 2: Mitigation
2.1: Forestry
2.2: Energy
2.3: Transportation

Pillar 3: Adaptation
3.1: Climate Forecasting & Impact/Vulnerability Assessment
3.2: Water
3.3: Agriculture
3.4: Fisheries

Capacity Building
Supporting capacity development of the Government of Indonesia to formulate climate change policies

Policy & Institutional Improvement
Providing financial assistance after formulating climate change policies and evaluating the achievements of the actions

Long-term training of Indonesia officials (at universities, etc.)
Utilizing French and Japanese Knowhow
Policy dialogue to promote effective actions (Steering Committee)
Example of Development Cooperation for Climate Change Public-Private Partnership for Leveraging Private Sector Finance

【JICA’s Approach: Case of Low-carbon Transport】

Vertical Separation
- Rolling stock, signals, etc. → Private sector
- Rail, station facilities, etc. → Public funds (ODA Loan)

Construction/Operation Separation
- Construction work → Public funds (ODA Loan)
- Operation & maintenance → Private (i.e. 25 yr concession)

Stage Separation
Building transport network is key for increasing users
- Utilizing public funds (ODA loan) in initial investments with risks

Facilities related to revenue generation
Project planning, Foundation work
ODA Loan
Private sector

ODA Loan
Construction
Operation

ODA Loan
Pioneering project
Succeeding phase

◆ Rolling stock, signals, etc. → Private sector
◆ Rail, station facilities, etc. → Public funds (ODA Loan)

Example of Development Cooperation for Climate Change Public-Private Partnership for Leveraging Private Sector Finance

【JICA’s Approach: Case of Low-carbon Transport】

Public-Private Partnership for Leveraging Private Sector Finance

JICA's Approach: Case of Low-carbon Transport
Example of Development Cooperation for Climate Change
【Regional Cooperation】Case of African Power Pool

List of Projects Approved (FY 2008-09)

**North Africa**

**EGYPT**
- Kuraymat Integrated Solar Combined Cycle Power Plant Project (Phase II)
- Energy Control System Upgrading Project in Upper Egypt
- Gulf of El Zayt Wind Power Plant Project
- Project for Introduction of Clean Energy by Solar Electricity Generation System

**TUNISIA**
- Metropolitan Railway Electrification Project (Phase II)

**West-Central Africa**

**SIERRA LEONE**
- Project for Urgent Improvement of Electric Power Supply System in Freetown
- Master Plan Study on Power Supply in Western Area

**GHANA**
- Project for Introduction of Clean Energy by Solar Electricity Generation System

**NIGERIA**
- Project for Rural Electrification in Cross River and Akwa Ibom States (Phase III)

**Gabon**
- Project for Introduction of Clean Energy by Solar Electricity Generation System

**Southern Africa**

**UGANDA**
- Project for Reinterconnection of Electric Grids of Nile Equatorial Lakes Countries Project
- Project for Rural Electrification (Phase II)
- Project for Master Plan Study on Hydropower Development

**DJIBOUTI**
- Project for Introduction of Clean Energy by Solar Electricity Generation System

**TANZANIA**
- Olkaria I Unit 4 and 5 Geothermal Power Project
- Project for Capacity Development of Efficient Transmission and Distribution

**BURUNDI**
- Project for Introduction of Clean Energy by Solar Electricity Generation System

**MALAWI**
- Project for Introduction of Clean Energy by Solar Electricity Generation System

**ZAMBIA**
- Increasing Access to Electricity Services Project
- Project for the Capacity Development for Rural Electrification
- Study for Power System Development

**Example of Development Cooperation for Climate Change**

【Regional Cooperation】Case of African Power Pool

6
### Olkaria I Unit 4 and 5 Geothermal Power Project
- Expanding the existing Olkaria I geothermal power station by installation of power generator units 4 and 5, 140 MW in total in Rift Valley province of Kenya (about 75 km northwest of Nairobi)
- Agreement: March 2010
- Loan Amount: 29,156 million yen
- Interest Rate: 0.20%
- Repayment/Grace period: 30/10 Years

### Olkaria-Lessos-Kisumu Transmission Lines Construction Project
- Construction of around 290 km of transmission lines from Olkaria geothermal power station to Kisumu in Eastern Kenya, which will be connected to the lines constructed in neighboring Uganda
- Agreement: December 2010
- Loan Amount: 12,410 million yen
- Interest Rate: 0.25%
- (0.01% for consulting services)
- Repayment/Grace period: 40/10 Years

- Climate Change Japanese ODA Loan Terms (highly concessional lending terms, the first two application cases in Sub-Saharan Africa)
- Geothermal is a low carbon, environment-friendly form of power generation. It drives turbines by using steam extracted from fluids (mixture of hot water and steam) that originate from geothermal heat stored in deep layers of the earth.

Photo: Olkaria Geothermal Power Station

---

【Regional Cooperation】Case of African Power Pool

 Assistance to Clean Power Infrastructure contributing to the Power Pool
Innovative Climate Finance and Development Cooperation by AFD and JICA

Indonesia: Strategic and Multi-layered Assistance

Indonesia: 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.

Physical Infrastructure Development
- Renewable energy
- Energy efficiency
- Urban transport
- Flood management, etc.

Policy & Institutional Improvement
- Geothermal IPP investment regulations
- Energy efficiency labeling system, etc.

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

*NAMA --- Nationally Appropriate Mitigation Actions
Thank you very much for your attention

Low Carbon and Climate Resilient Society in future?