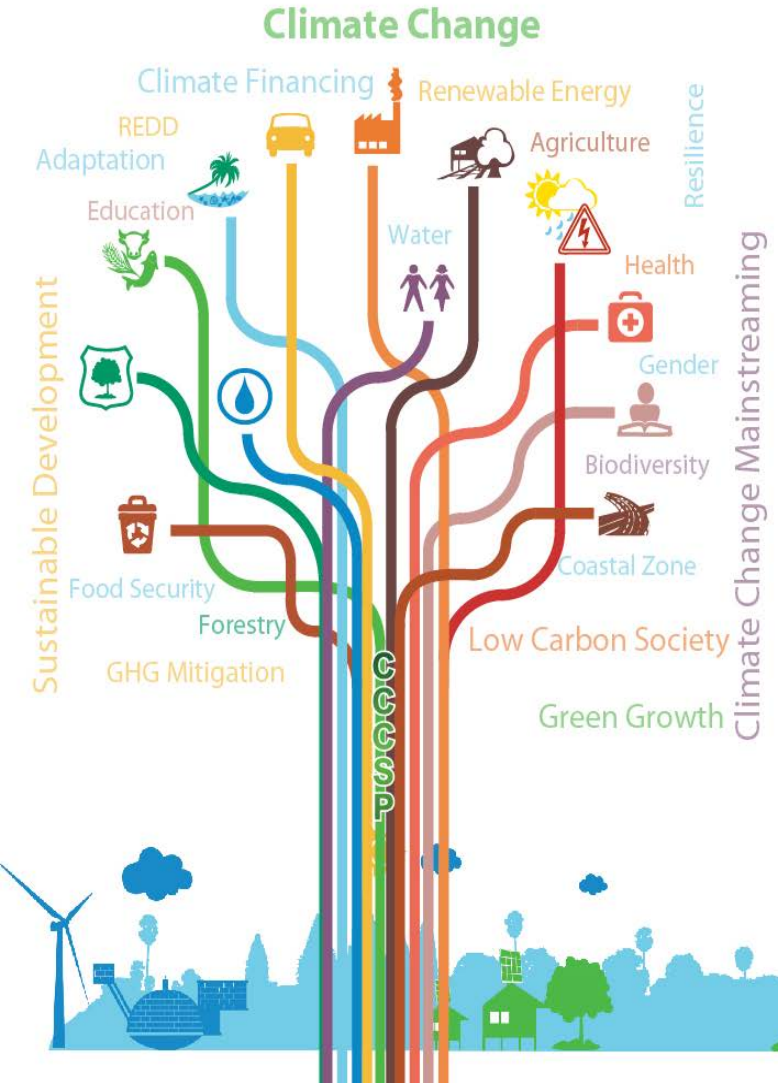
3rd National Forum on Climate Change

5 – 7 November 2013, Cambodia

"Taking Action for Sustainable Development in the Changing Climate"



Japanese initiative for climate change mitigation

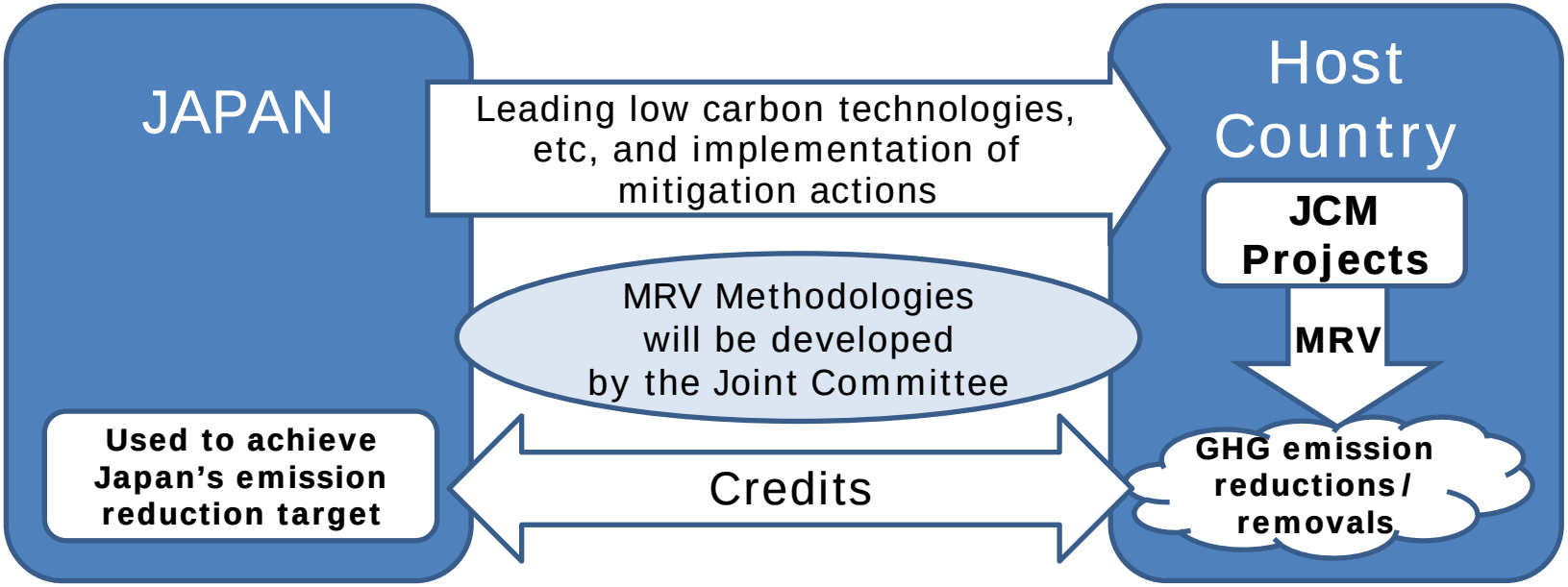
Akiko Fukui
Institute for Global environmental Strategies

6 November 2013

CAMBODIA CLIMATE CHANGE ALLIANCE

Joint Crediting Mechanism: Japan's Initiative

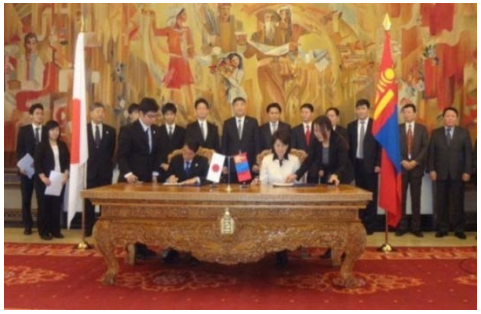
- Facilitating diffusion of leading low carbon technologies, products, systems, services, and infrastructure as well as implementation of mitigation actions, and contributing to sustainable development of developing countries.
- Appropriately evaluating contributions to GHG emission reductions or removals from Japan in a quantitative manner, by applying measurement, reporting and verification (MRV) methodologies, and use them to achieve Japan's emission reduction target.
- Contributing to the ultimate objective of the UNFCCC by facilitating global actions for GHG emission reductions or removals, complementing the CDM.



Source: Government of Japan

Japan has signed on bilateral documents with 8 countries

- Japan has held consultations for the JCM with developing countries since 2011 and signed the bilateral document for the JCM with Mongolia, Bangladesh, Ethiopia, Kenya, Maldives, Viet Nam, Lao PDR and Indonesia.



Mongolia
On January 8, 2013
（Ulaanbaatar）

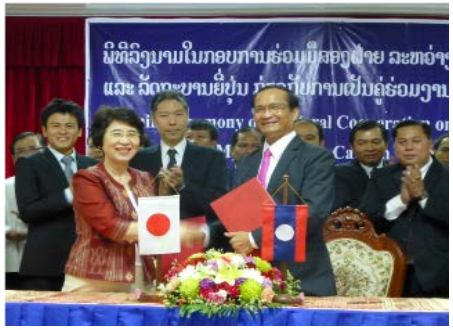
Bangladesh
On March 19, 2013
(Dhaka)

Ethiopia
On May 27, 2013
(Addis Ababa)

Kenya
On June 12,2013
(Nairobi)

Maldives
On June 29, 2013
(Okinawa)

Viet Nam
On July 2, 2013
(Hanoi)



Lao PDR
On August 7, 2013
(Vientiane)

Indonesia
On August 26, 2013
(Jakarta)

- Japan held the 1st Joint Committee with Mongolia, Bangladesh, Ethiopia, Kenya, Viet Nam and Indonesia respectively.

Source: Government of Japan

JCM is recognized in the context of UNFCCC

Decision 1/CP18

41. *Acknowledges* that **Parties, individually or jointly, may develop and implement various approaches, including opportunities for using markets** and non-markets, to enhance the cost-effectiveness of, and to promote, mitigation actions, bearing in mind different circumstances of developed and developing countries;

42. *Re-emphasizes* that, as set out in decision 2/CP.17, paragraph 79, all such approaches must meet standards that deliver real, permanent, additional and verified mitigation outcomes, avoid double counting of effort and achieve a net decrease and/or avoidance of GHG emissions;

44. *Requests* the SBSTA to conduct a work programme to elaborate a framework for such approaches, drawing on the work of the AWG-LCA on this matter, including the relevant workshop reports and technical paper, and experience of existing mechanisms, with a view to recommending a draft decision to the COP for adoption at its 19th session;

45. *Considers* that any such framework will be developed under the authority and guidance of the Conference of the Parties;

Source: Government of Japan

JCM model project in Cambodia

Small-scale Biomass Power Generation by Using Stirling Engines

PP from Japan: ProMaterials, Shoei / PP from Cambodia: Angkor Bio Cogen

Outline of GHG Mitigation Activity

Many rice mills in Cambodia operate their own in-house diesel-based power generation systems. Biomass (rice husk) power generation systems with **Stirling Engines** will replace the conventional in-house diesel power generation systems, and lead to CO_2 emission reduction.

The Stirling Engine, an external combustion system, can utilise various fuels including biomass for power generation. It is suitable for power generation by fuel with less stable quality, such as rice husk. Furthermore, the Stirling Engine system to be introduced is a multiple combination of 3.5kW-units, so customisation is based on the electricity demand and the availability of biomass fuel.

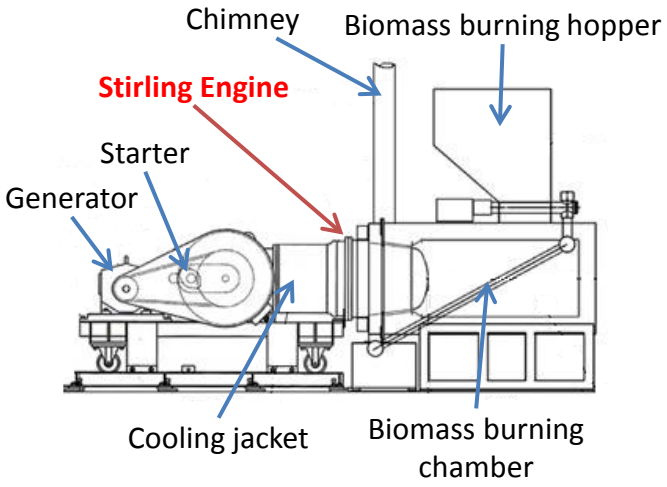
A portable package of a unit enables the installation to meet various demands of rice mills. It is proposed that one system composed of 10 units is installed at one site, and 5 systems in total are introduced at 5 different rice mills.

Expected GHG Reductions

1,840tCO_2/year

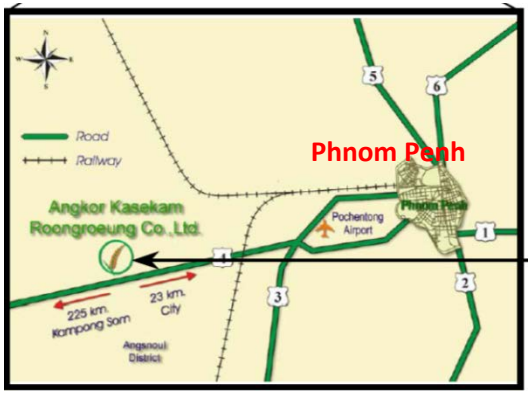
- ← A unit of 3.5kW biomass-based power generation equipment using Stirling Engines, with the estimated operating hours of 24 hours of 365 days per year, and operation efficiency of 50%
- ← Diesel (reference fuel) emission factor (EF): 2.4tCO_2/MWh
- ➔ GHG emission reductions/unit: 3.5kW X (365days X 24hours) X 50% X EF (2.4tCO_2/MWh) = 36.8tCO_2
- ➔ 1 system composed of 10 units, and 5 systems to be introduced: 36.8tCO_2/unit X (10 units X 5 systems) = 1,840tCO_2

System Outline



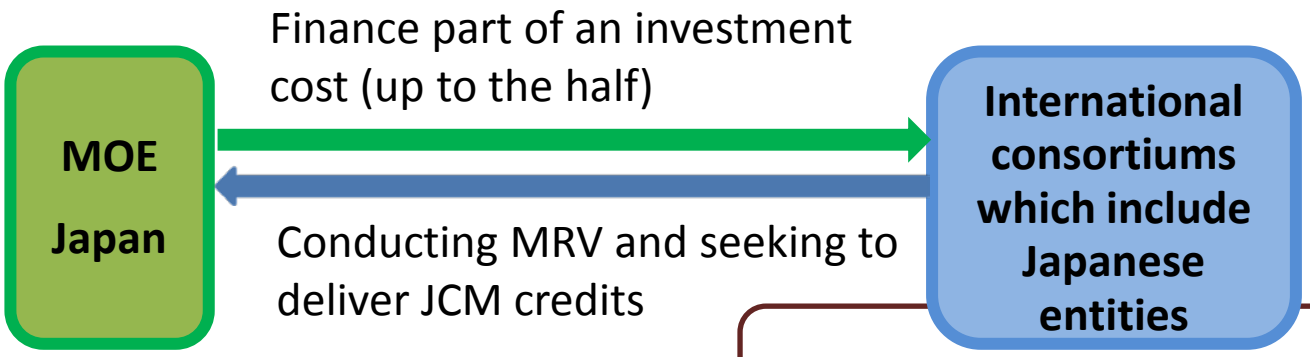
Sites of JCM Model Project

Kandal Region outside Phnom Penh
→ 5 rice mills



Source: Government of Japan

Financing Programme for JCM Model Projects



The budget for FY 2013:
1.2 billion JPY
(approximately $13 million)

- Scope of the financing: Facilities which reduce CO_2 from fossil fuel combustion as well as construction cost for installing those facilities, etc.
- Eligible Projects : Starting construction after the adaption of the financing, and finish construction within FY2013 (one year extension may be approved).

Source: Government of Japan

Support for climate change mitigation in Cambodia

Activities by Institution for Global Environmental Strategies (IGES), Overseas Environmental Cooperation Center (OECC) and Global Environment Center Foundation (GEC)

CDM (2003 ～)

- Capacity building workshops (awareness razing, training)
- Identification of potential CDM projects and consultation
- Joint proposals to UNFCCC (2008, 2009)
- Grid emission factor calculation (2005, 2011)
- Proposal of standardized baseline for rice mill sector (2012)
- Feasibility studies (6 projects)

JCM (2011 ～)

- Capacity building
- Identification of potential projects and consultation
- Feasibility studies and model projects (5 projects)

NAMA (2012 ～)

- Study for NAMA (biodigester; quantification of GHG emission reduction, MRV structure)
- NAMA working group meetings
- Capacity building

Thank You !

Detail information for JCM:
http://www.mmechanisms.org/e/index.html

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CAMBODIA CLIMATE CHANGE ALLIANCE

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