

**Study on potential REDD plus credits in  
the context of bilateral framework**

**Final Report**

**November 2011**

**Japan International Cooperation Agency (JICA)**

**Mitsubishi UFJ Research and Consulting**

(Notice)

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# Study on potential REDD plus credits in the context of bilateral framework Final Report

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## -Abbreviation-

A/R CDM	Afforestation or Reforestation Clean Development Mechanism
ACCA	Asociación para la Conservación de la Cuenca Amazónica
AIDER	Asociación para la Investigación y el Desarrollo Integral
AMPA	Amazónicos por la Amazonia
AWG-LCA	Ad Hoc Working Group on Long-term Cooperative Action under the Convention
BID	Banco Interamericano de Desarrollo
BSD	Bosques, Sociedad y Desarrollo
CBD	Convention on Biological Diversity
CBEX	The China Beijing Environment Exchange
CBFF	Congo Basin Forest Fund
CCX	Chicago Climate Exchange
CER	Certified Emission Reduction
CFI	Community forestry International
CI	Conservation International
CIMA	Centro de Conservación, Investigación y Manejo de Áreas Naturales
COP	Conference of the Parties
CSR	Corporate Social Responsibility
DOE	Designated Operational Entity
DRIS	Desarrollo Rural Sostenible
ECOMUNAL	Ecoturismo Comunitario en América Latina
EU-ETS	European Union Emissions Trading System
FAO	Food and Agriculture Organization of the United Nations
FCPF	Forest Carbon Partnership Facility
FFI	Fauna & Flora International
FIP	Forest Investment Program
GCF	Governors' Climate and Forests Task Force
GEC	Global Environmental Centre Foundation
GHG	Greenhouse Gas
GIZ	Gesellschaft für Internationale Zusammenarbeit
GNP	Gross National Product
GOFC-GOLD	Global Observation of Forest and Land Cover Dynamics
ICRAF	International Center for Research in Agroforestry
IETA	International Emissions Trading Association
IPCC	Intergovernmental Panel on Climate Change
J-VER	Japan Verified Emission Reduction
J-VETS	Japan's Voluntary Emission Trading Scheme
KfW	Kreditanstalt für Wiederaufbau
LULUCF	Land use, Land use change and Forestry
MDGs	Millennium Development Goals
MoU	Memorandum of Understanding
NAMAs	National Appreciated Mitigation Actions
NGO	Non-Governmental Organization
NTFP	Non Timber Forest Products
NZ-ETS	New Zealand Land Emissions Trading System
ODA	Official Development Assistance
PAREDD	Participatory Land and Forest Management Project for Reducing Deforestation in Lao PDR
PCF	Prototype Carbon Fund
PES	Payment for Environment Service

## -Abbreviation-

RGGI	Regional Greenhouse Gas Initiative
R-PIN	Readiness Plan Idea Note
R-PP	Readiness Preparation Proposal
SBSTA	Subsidiary Body for Scientific and Technological Advice
SNV	Netherlands Development Organisation
SUFORD	Sustainable Forestry and Rural Development Project
TNC	The Nature Conservancy
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNCCD	United Nations Convention to Combat Desertification
UNFF	United Nations Forum on Forests
UN-REDD	United Nations Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries
VCS	Verified Carbon Standards
WCS	Wildlife Conservation Society
WWF	World Wide Fund for Nature

### Exchange rate

1 Cambodia KHR = 0.018 yen

1 Lao LAK = 0.009 yen

1 Vietnam VND = 0.0036 yen

1 Papua New Guinea PGK = 36.219 yen

1 Peru PEN = 28.263 yen

(November, 2011)

## Executive Summary

The objective of this study is to make proposals on institutional design for promoting REDD plus, which is drawing attention as a global warming mitigation measure after 2013, based on cooperation between JICA and private companies, etc. Whilst considering schemes for bilateral aid, this study will make proposals for system planning based on joint initiatives between JICA and private-sector enterprises. Proposals have been made, taking into consideration the trends of REDD plus in Japan and abroad that have been continuously discussed and the roles that JICA and private companies, etc., should play during each phase of REDD plus implementation, while maintaining consistency with REDD plus activities carried out in each developing country.

In Chapter 1, situation of REDD plus in Japan and abroad was reviewed and objectives of this study is clarified. Particular consideration is given to the facts that institutional design for the bilateral offset credit mechanism as a mitigation measure after 2013 is now being discussed in Japan, where REDD plus is considered an important mitigation measure, as well as that REDD plus is also becoming the center of attention within the UNFCCC because of its medium- to long-term mitigation potential.

In Chapter 2, based on the experience of JICA, which is a domestic organization that has been working on forest conservation projects in developing countries since early on, the challenges expected in implementing REDD plus projects in development countries are identified. Then, the areas where JICA's knowledge can be utilized in promoting REDD plus effectively and efficiently are identified. This will be based on the characteristics of REDD plus activities, which need to consider mid- to long-term initiatives from a variety of different angles.

In Chapter 3, although REDD plus is considered a mitigation measure after 2013, REDD plus activities are already going on under the framework of the voluntary carbon market outside of the UNFCCC. In 2011, carbon credits generated by REDD plus that obtained certification under the Verified Carbon Standards (VCS) began to be traded on the market. In addition, the development of institutional design for emissions trading using the credits generated by REDD plus started in earnest in California and elsewhere in the U.S., etc. In these activities, consideration has been given so that private companies, etc., can easily participate in REDD plus based on the lessons learned from the Afforestation or Reforestation Clean Development Mechanism (A/R CDM) which had not conducted in overall developing countries even in now. For example, the introduction of the buffer approach in the VCS, in order to address impermanence, seems effective in encouraging private companies, etc., to promote the investment plan.

In Chapter 4 looks at private-sector enterprises involved in implementing and supporting REDD plus activities (enterprises already involved in REDD plus feasibility studies and so on). The chapter looks at problems related to the role of REDD plus activities in mitigation policies from 2013 onwards and also discusses methods for dealing with these problems. Some Japanese companies are also conducting feasibility studies regarding REDD plus, indicating that they regard REDD plus as an important mitigation measure for

2013 and beyond. However, given the nature of REDD plus, which involves forest conservation in developing countries, concern is often expressed over the difficulty of carrying out REDD plus activities by a private company, etc., alone. This fact indicates that it is important to cooperate with JICA in capacity-building, etc., for the future.

In Chapter 5 discusses the on-the-ground situation in the five countries where field studies are being carried out (Cambodia, Laos, Vietnam, Papua New Guinea and Peru) as well as Indonesia, a country where REDD plus activities are having a significant impact (the Indonesian study is just a review of the available literature). Each developing country is actively preparing for the implementation of REDD plus with the support of the World Bank, etc. A distinctive feature of their activities is that new organizations to implement REDD plus have been established as part of efforts to prepare the structure for implementing REDD plus from a medium- to long-term perspective. However, there remains a number of issues to be solved before the implementation of REDD plus can occur. For example, the roles of government agencies that have jurisdiction over forests and the method of cooperation among these agencies have not been clearly defined, and no clear direction has been set as to how to utilize (how to distribute, etc.) profits from credits generated by the implementation of REDD plus.

Based on the above-described trends of: REDD plus in Japan and abroad, the REDD plus-related resources owned by JICA, the REDD plus-related activities of private companies, and the REDD plus implementation structure, etc., in developing countries, as described above, proposals are being made regarding the approach that Japan should take in promoting REDD plus.

The proposed approaches primarily emphasize the importance of cooperation among JICA, private companies, etc., and research institutes and universities, etc., in Japan, when promoting REDD plus. Such cooperation is necessary not only for sharing knowledge but also for carrying out REDD plus activities that require approaches for wide-ranging areas, including socioeconomic and technical aspects. Therefore, an outline of the cooperation system is presented to help shape the future direction.

Then, taking into account the implementation structure in Japan and the REDD plus-related activities in developing countries, the direction of the approach to be taken in each country based on the cooperation between JICA and private companies is presented. In setting such direction, careful consideration is given so that the incentives for private companies, etc., to carry out REDD plus projects will not be reduced, while recognizing the importance of implementing project-based activities on a short-term basis with an eye to the shift to sub-national-based REDD plus on a medium- to long-term basis.

The proposed approaches to REDD plus based on this study are expected to provide guidelines for the implementation of REDD plus, which is considered a mitigation measure after 2013 by JICA and private companies, etc.



## Chapter 1 Background and Objective

### 1. Status of REDD plus

The total forest area on the earth is approximately 4 billion hectares, covering about 30% of the land surface. However, according to the report of the Food and Agriculture Organization of the United Nations (FAO), an average of 13 million hectares of forest was lost per year between 2000 and 2005. This means that a forest area equivalent to 30% of the land area of Japan was lost each year.

Reduction in the forest area occurs predominantly in Southeast Asia, the basin of the Amazon River and the basin of the Congo River (Figure 1). In the developing countries in and surrounding these areas, efforts have long been made to establish a sustainable forest management system. In addition, attentions to avoiding deforestation had been increased as one of the mitigation actions under UNFCCC which was adopted in 1992. However, in spite of the wide recognition of the need for and the economic effects of reducing deforestation and forest degradation, the Kyoto Protocol, which is the existing international agreement concerning climate change, offers no incentive for it. Under the current system, the Afforestation or Reforestation Clean Development Mechanism (A/R CDM) is included in the Flexibility Mechanism (Kyoto Mechanism) for mitigation measures. However, it covers only afforestation activities and not the mitigation measures through the reduction of deforestation and forest degradation. In view of these circumstances, the side of the developing countries expressed the opinion that it is important to provide incentives for reducing deforestation and forest degradation as one of the mitigation measures after 2013 (after first commitment period of the Kyoto Protocol).

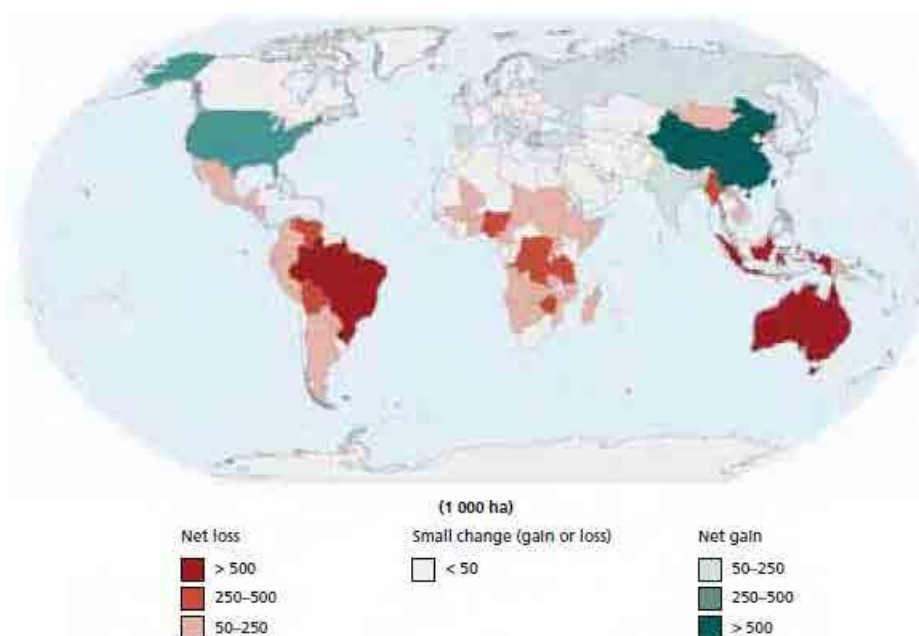


Figure 1 Changes in global forest area 2005-2010<sup>1</sup>

<sup>1</sup> FAO 2011. Global Forest Resources Assessment 2010. available at web site of (<http://www.fao.org/forestry/fra/fra2010/en/>)

The climate change mitigation effect of “Reducing Emissions from Deforestation and Forest Degradation in Developing Countries” (REDD) continued to be discussed at the Intergovernmental Panel on Climate Change (IPCC). The Third Assessment Report (TAR) published in 2001 mentioned that reducing deforestation and forest degradation in tropical regions has a great potential as a large-scale mitigation measure for carbon sinks such as forests. In the Fourth Assessment Report (AR4) released in 2007, it was quantitatively shown that deforestation and forest degradation in developing countries are responsible for about 20% of human-induced greenhouse gas (GHG), sending a strong message from scientists that emphasizes the need for prompt measures.

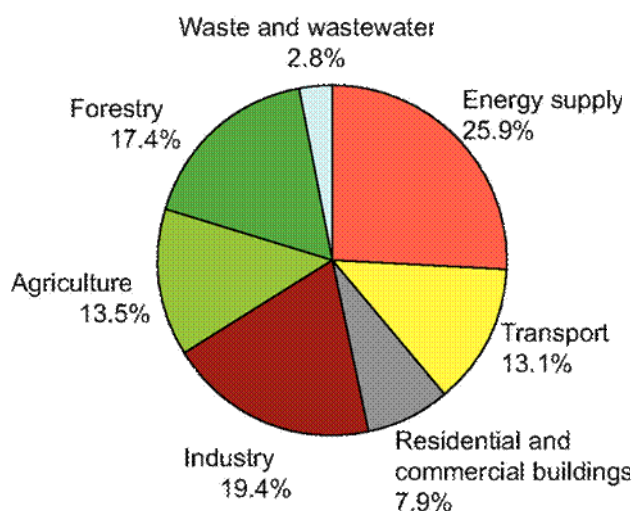


Figure 2 Greenhouse gas emissions by sector in 2004<sup>2</sup>

※ The percentage of GHG emissions of each sector shows that emissions from fossil fuels account for more than 50% of the total. The second-largest GHG emissions come from deforestation and forest degradation, accounting for 17.4% of the total.

With respect to scientific and technical issues concerning the implementation of REDD, Meridian Institute in the U.S. and the Global Observation of Forest and Land Cover Dynamics (GOFC-GOLD), etc. published study results on the Measurement, Reporting and Verification (MRV) system consisting of measurement including the monitoring of carbon stocks, reporting, and verification. However, international consensus has yet to be reached on the required accuracy and the methodology that is flexible enough to apply such to developing countries.

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<sup>2</sup> IPCC 2007. Fourth Assessment Report: Climate Change 2007 (AR4). available at web site of ([http://www.ipcc.ch/publications\\_and\\_data/ar4/wg3/en/contents.html](http://www.ipcc.ch/publications_and_data/ar4/wg3/en/contents.html))

## 2. REDD plus negotiations under the UNFCCC

Under UNFCCC, negotiations for REDD plus implementation have been conducted by two bodies, the Ad Hoc Working Group on Long-term Cooperative Action under the Convention (AWG-LCA), which mainly discusses the institutional and policy aspects of REDD plus implementation, and the Subsidiary Body for Scientific and Technological Advice (SBSTA), which mainly discusses the technical aspects (methodology). The progress of negotiations at these two bodies is outlined below.

### 2.1 Policy approach: Ad Hoc Working Group on Long-term Cooperative Action under the Convention (AWG-LCA)

The Bali Action Plan<sup>3</sup> adopted at the Conference of the Parties on its Thirteenth Session (COP 13) at the end of 2007 mentioned the “conservation, sustainable management of forests and the enhancement of forest carbon stocks” as REDD plus activities, in addition to “reducing emissions from deforestation and forest degradation.” Since then, AWG-LCA has been discussing the institutional and policy aspects, in particular, of REDD plus as a mitigation measure under the next framework for 2013 and beyond<sup>4</sup>.

In the discussion of the institutional and policy aspects, it was a big question regarding how REDD plus should be implemented, whether using a fund or based on the market mechanism, in order to create incentives to be offered to developing and developed countries for the implementation of REDD plus activities and to ensure sufficient and appropriate funding to REDD plus activities. Based on the experience of A/R CDM, which has already been introduced in forest projects in developing countries, it was decided to propose a phased approach for the implementation of REDD plus activities, which combines a fund-based approach and a market-based approach (Figure 3).

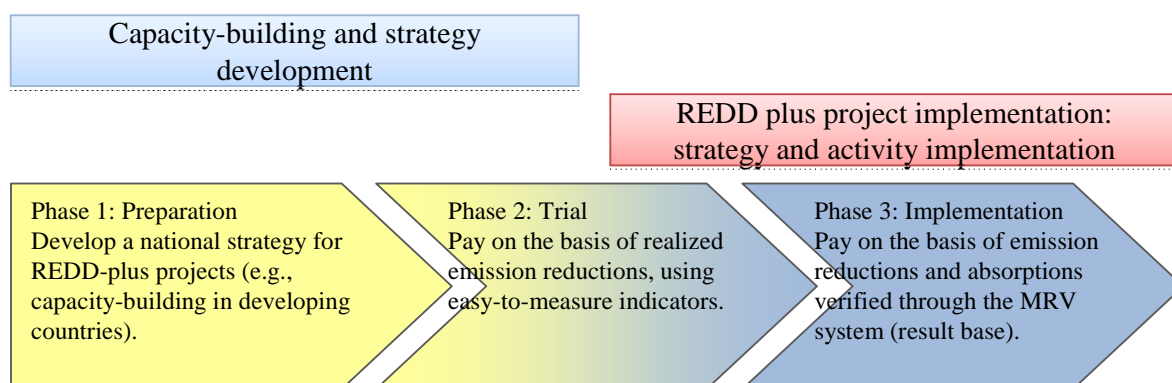


Figure 3 Concept of the phased approach

For the implementation of REDD plus, a system needs to be established to carry out regional forest management in cooperation with local residents/indigenous peoples, and medium- and long-term

<sup>3</sup> UNFCCC 2007. Bali Action Plan (FCCC/CP/2007/6/Add.1 Decision 1/CP.13) . Available at UNFCCC Web Site (<http://unfccc.int/resource/docs/2007/cop13/eng/06a01.pdf#page=3>)

<sup>4</sup> REDD plus: Reducing Emissions from Deforestation and forest Degradation in developing countries (REDD) and “Conservation of forest carbon stocks” & “Sustainable management of forest” & “Enhancement of forest carbon stocks”

approaches are needed to address the problem such that the market mechanism for biodiversity, etc., only is not enough to provide incentives. Considering these facts, the importance of introducing a fund-based approach (including Official Development Assistance (ODA) programs), not just relying on existing market mechanisms such as A/R CDM, came to be recognized.

At COP 15, which was held in 2009, while some issues were still left unsolved, a lot of time was spent in active negotiations on: 1) how to set the boundary of REDD plus activities, whether at the national or sub-national level, or the project level; 2) how the MRV system should be set up; 3) how to set the reference levels on the basis of which carbon credits are issued (Figure 4); and 4) whether REDD plus should be included in the National Appreciated Mitigation Actions (NAMAs) of developing countries that had been continuously discussed by the AWG-LCA and other issues, though COP 15 ended with no agreement reached on these issues. However, as a result of the attempt to put the various opinions of each country on each issue together, COP 16 in 2010 finally agreed on overall frameworks for the specific activities of REDD plus, the actions to be taken by developing countries, and the safeguards to be addressed in implementing REDD plus activities<sup>5</sup> (e.g., the conservation of biodiversity, consideration for indigenous peoples/local residents, etc.).

The process of establishing the detailed rules necessary for the implementation of REDD plus on a full scale is expected to continue through 2011 and onward.

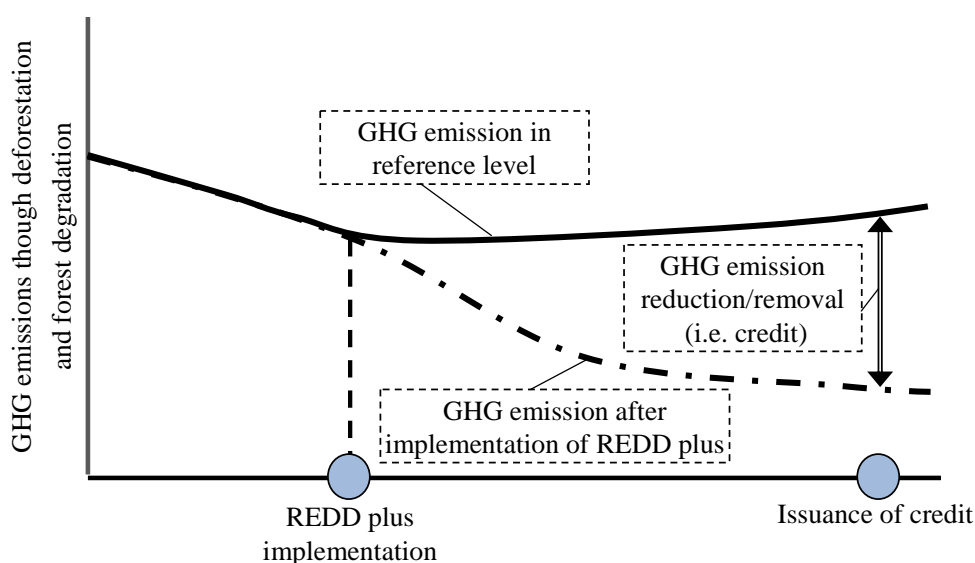


Figure 4 Concept of reference level

<sup>5</sup> UNFCCC 2011. The Cancun Agreements: Outcome of the work of the Ad Hoc Working Group on Long-term Cooperative Action under the Convention (Decision 1/CP.16) . Available at UNFCCC Web Site (<http://unfccc.int/resource/docs/2010/cop16/eng/07a01.pdf#page=2>)

## 2.2 Technical approach: SBSTA

The SBSTA is now discussing methodology in line with the action plan developed at COP 13.<sup>6</sup> An agreement was reached at COP 15 at the end of 2009 on the methodological guidance that stipulates that a solid forest monitoring system should be established and that estimation must be made according to the guideline published by the IPCC, etc.<sup>7</sup> However, little further progress was made during 2010, and specific guidelines and methodology have yet to be established. With no particular outcome reported at COP 16 in 2010, the SBSTA is expected to proceed with the development of the guidance for the implementation of REDD plus and other process for COP 17 or COP 18<sup>8</sup>.

The resolution adopted at COP 16 in 2010 requested that the SBSTA develop work programs to address technical issues concerning REDD plus (modality, procedure, etc.) during 2011 (to be ready for COP 17) or during 2012 (to be ready for COP 18). These SBSTA activities provide the important elements of the scientific and technical aspects of the establishment of the framework for REDD plus, and Japan is also expected to provide information.

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<sup>6</sup> UNFCCC 2007b, Reducing Emissions from Deforestation in Developing Countries: Approaches to Stimulate Action (FCCC/CP/2007/6/Add.1 Decision 2/CP.13); available at the UNFCCC website at: <http://unfccc.int/resource/docs/2007/cop13/eng/06a01.pdf#page=8>

<sup>7</sup> UNFCCC 2009b, Methodological Guidance for Activities Relating to Reducing Emissions from Deforestation and Forest Degradation and the Role of Conservation, Sustainable Management of Forests and Enhancement of Forest Carbon Stocks in Developing Countries (FCCC/CP/2009/11/Add.1 Decision 4/CP.15); available at the UNFCCC website at: <http://unfccc.int/resource/docs/2009/cop15/eng/11a01.pdf#page=11>

<sup>8</sup> UNFCCC 2011, The Cancun Agreements: Outcome of the Work of the Ad Hoc Working Group on Long-term Cooperative Action under the Convention (Decision 1/CP.16); available at the UNFCCC website at: <http://unfccc.int/resource/docs/2010/cop16/eng/07a01.pdf#page=2>

### 3. REDD plus initiatives outside the United Nations Framework Convention on Climate Change (UNFCCC)

In addition to the international efforts under the IPCC and the UNFCCC, a number of independent initiatives are being promoted. Some of these initiatives are more advanced than those under the UNFCCC in policy and technical aspects, such as: the Forest Carbon Partnership Facility (FCPF), which is a World Bank program; the Forest Investment Program (FIP); the United Nations Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries (UN-REDD); partnerships under bilateral agreement between a developed country and a developing country; and the projects using the Verified Carbon Standard (VCS), which is a verification system for voluntary carbon markets established by the International Emissions Trading Association (IETA) and others (Figure 5).

	Trends of the UNFCCC		Trends other than the UNFCCC
2005	Negotiations on countermeasures against deforestation started at COP11.		Effects of emission reduction through deforestation countermeasures began to attract attention.
2006	Discussions were continuously carried out.		The Voluntary Carbon Standard (VCS) started developing a guideline for the implementation of the REDD project.
2007	COP13 decided to incorporate the REDD-plus in the framework after 2013. Delegates agreed to open discussions on policy matters at AWG-LCA and technical aspects at SBSTA.		The VCS2007 was drawn up, and the guideline on REDD-plus was published.
2008	AWG-LCA: Negotiating texts were prepared based on the issue-specific opinions of each country.	SBSTA: Delegates agreed to hold expert meetings on technical matters (to be held also in Tokyo).	The activities of the Forest Carbon Partnership Facility (FCPF) of the World Bank and the bilateral cooperation between Australia and Indonesia were inaugurated.
2009	AWG-LCA: Delegates failed to reach agreements on issues such as the implementation scale and the financial frame of REDD.	SBSTA: Methodological guidance, such as the introduction of robust monitoring system, was agreed upon.	Through a part of the voluntary certification systems of carbon credits, REDD-derived credits were put into circulation.
2010	AWG-LCA: An agreement was reached on the institutional design of the overall framework for the implementation of REDD-plus.	SBSTA: No particular discussion or task was conducted.	Norway and Indonesia agreed on the framework of bilateral cooperation. The REDD-plus partnership was launched (Japan co-chairs it with Papua New Guinea).
	In the Cancun Agreements, delegates agreed on the institutional design of the overall framework for the implementation of REDD-plus. The handling of the financial and technical issues of SBSTA have been carried over for future discussion.		

Figure 5 REDD plus approaches under the UNFCCC and outside the UNFCCC

The FCPF, FIP, and UN-REDD have already carried out demonstration projects for Phase 1 and Phase 2 in dozens of countries. In 2011, FCPF's Carbon Fund for Phase 3 is expected to be launched. On the other hand, the volume of carbon credits generated by REDD plus that were traded on the voluntary market using the verification system such as VCS exceeded 3.5 million t-CO<sub>2</sub> in 2010<sup>9</sup>. Thus, REDD plus activities have been rapidly expanding under the frameworks outside of the UNFCCC. These experiences outside of the

UNFCCC have a significant impact on the establishment of the REDD plus framework under the UNFCCC.

Table 1 Outline and scope of major international funds supporting REDD plus

International fund	Outline	Phase 1: Capacity-building and the development of REDD plus strategies	Phase 2: Demonstration activities, etc., under REDD plus strategy	Phase 3: Issuance of credits based on the achieved emissions reduction
FCPF Readiness Fund <sup>10</sup>	A fund operated by the World Bank; 37 countries <sup>11</sup> have been selected to receive support, of which several countries have already received support.	○		
FCPF Carbon Fund	A fund operated by the World Bank scheduled to commence operation in 2011 (70 million USD has already been donated.)			○
FIP <sup>12</sup>	A fund operated by the World Bank providing support to 8 countries so far <sup>13</sup> .		○	
UN-REDD <sup>14</sup>	A collaborative program of FAO, UNEP and UNDP providing support to 13 countries so far <sup>15</sup> .	○	○	
Amazon Fund <sup>16</sup>	A multilateral fund targeting Amazon area. Norway has made donation.	○	○	○
FCPF Readiness Fund <sup>17</sup>	A fund operated by the World Bank; 37 countries have been selected to receive support, of which several countries have already received support.	○	○	

### 3.1 Initiatives of the World Bank

The World Bank initiated two funds for the reduction of deforestation and forest degradation under the FCPF: the Readiness Fund and the Carbon Fund, thereby supporting REDD plus activities in various

<sup>9</sup> This figure represents a trade volume including the volume of the forward trading of the carbon credits to be issued in the future—not the credits that have already been issued from REDD plus projects.

<sup>10</sup> FCPF website: <http://www.forestcarbonpartnership.org/fcp/>

<sup>11</sup> Argentina, Bolivia, Cambodia, Cameroon, Central African Republic, Chile, Colombia, Costa Rica, DR Congo, El Salvador, Equatorial Guinea, Ethiopia, Gabon, Ghana, Guatemala, Guyana, Honduras, Indonesia, Kenya, Lao PDR, Liberia, Madagascar, Mexico, Mozambique, Nepal, Nicaragua, Panama, Papua New Guinea (PNG), Paraguay, Peru, Republic of Congo, Suriname, Tanzania, Thailand, Uganda, Vanuatu, and Vietnam

<sup>12</sup> FIP website: <http://www.climateinvestmentfunds.org/cif/node/5>

<sup>13</sup> Brazil, Burkina Faso, DR Congo, Ghana, Indonesia, Lao PDR, Mexico, and Peru

<sup>14</sup> UN-REDD website : <http://www.un-redd.org/Home/tabid/565/language/en-US/Default.aspx>

<sup>15</sup> Bolivia, Cambodia, DR Congo, Ecuador, Indonesia, Panama, PNG, Paraguay, Philippines, Solomon Islands, Tanzania, Vietnam, and Zambia

<sup>16</sup> Amazon Fund website: [http://www.amazonfund.org/about\\_af/](http://www.amazonfund.org/about_af/)

<sup>17</sup> FCPF website: <http://www.forestcarbonpartnership.org/fcp/>

counties in a phased manner (lower left of Figure 6). A nearly sufficient amount of contributions has already been raised for the funds. At the same time, preparations are under way for the implementation of the pilot projects that combine the Readiness Fund and the Carbon Fund using the FIP of the World Bank (corresponding to Phase 2) (lower right of Figure 6). The World Bank is considering starting carbon crediting using the Carbon Fund from this year.

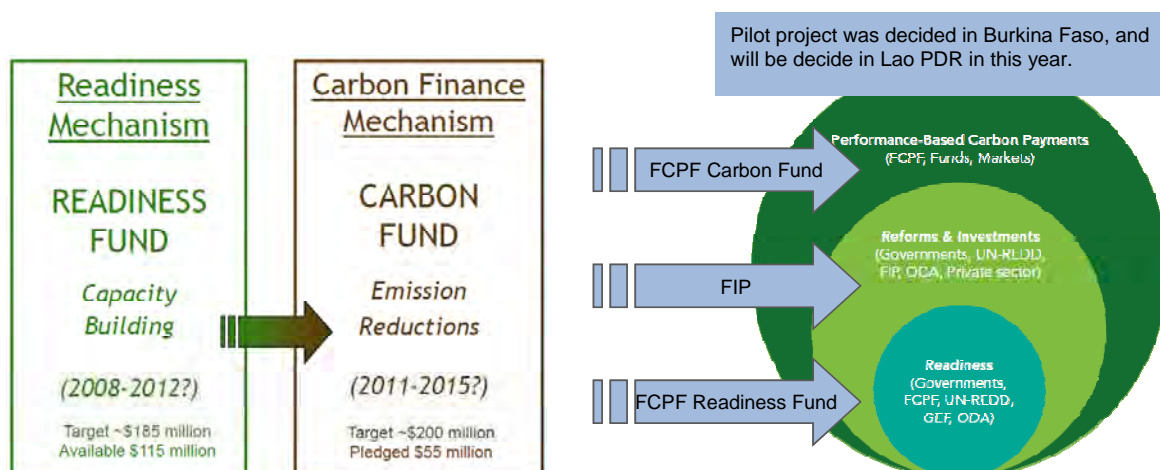


Figure 6: Timeframe for the implementation of REDD plus projects supported by the World Bank<sup>18</sup>

The World Bank’s initiatives are in line with the idea of the phased approach that was clearly stated in the Cancun Agreement, and capacity-building activities using the Readiness Fund are now under way ahead of the UNFCCC. REDD plus projects supported by the World Bank have now advanced into the phase of implementing pilot projects in several developing countries, which corresponds to Phase 2.

### 3.2 Initiatives of UN-REDD

The UN-REDD Programme was set up in 2008 to assist tropical forest countries in establishing a fair, equitable and transparent REDD regime. UN-REDD is an international multi-donor fund operated jointly by United Nations organizations, including the United Nations Environment Programme (UNEP), United Nations Development Programme (UNDP), and FAO. It is now supporting 13 national-level REDD plus programs (Figure 7). In Vietnam and PNG, which are included in the target countries of this study, the program is in transition from Phase 1 to Phase 2 and is now in the process of selecting the site of the pilot project.

<sup>18</sup> FCPF website: <http://www.forestcarbonpartnership.org/fcp/>



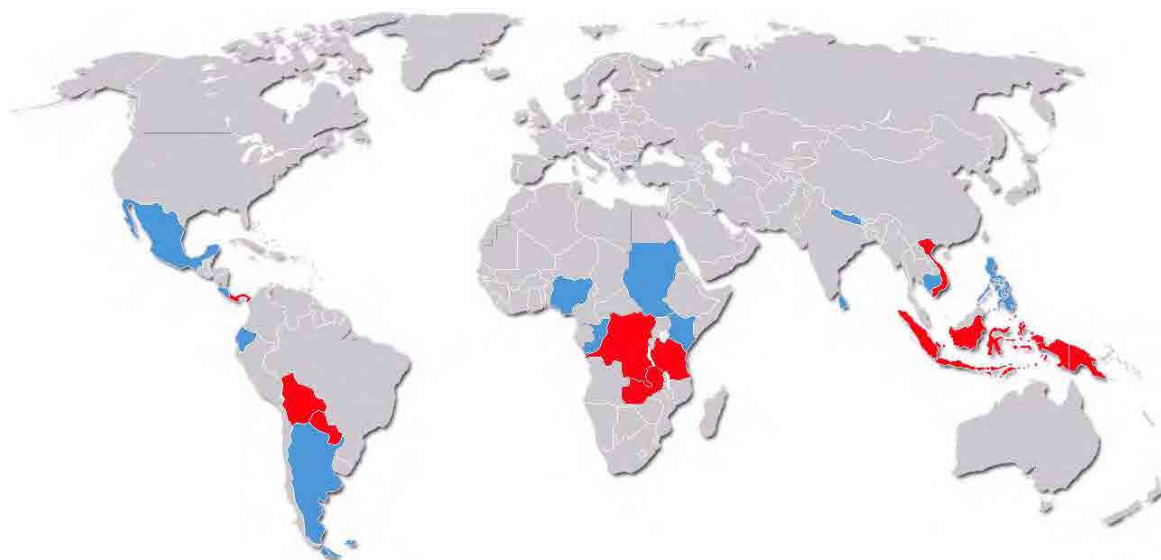


Figure 7 REDD Plus programs receiving the support of UN-REDD<sup>19</sup>

- ※ Countries receiving support to National Programmes (in red): Bolivia, Cambodia, DR Congo, Ecuador, Indonesia, Panama, PNG, Paraguay, Philippines, Solomon Islands, Tanzania, Vietnam, and Zambia
- ※ Other partner countries (in blue): Argentina, Bangladesh, Bhutan, Central African Republic, Colombia, Costa Rica, Ethiopia, Gabon, Guatemala, Guyana, Honduras, Ivory Coast, Kenya, Mexico, Mongolia, Nepal, Pakistan, Peru, Republic of Congo, Sri Lanka, and Sudan
- ※ UN-REDD aims to provide support for REDD plus programs in Phase 1 and Phase 2. With its support, several countries have already launched pilot projects through which expertise for the implementation of REDD plus is being accumulated.

### 3.3 REDD plus activities under bilateral agreement

Separately from the negotiations under the UNFCCC, REDD plus activities under bilateral agreement have been promoted. Among them, the partnership program between Norway and Indonesia based on the Letter of Intent (LOI) drew much attention because of its size of support, amounting to one billion US dollars, and its result-based mechanism. Many other partnership programs under bilateral agreement between a developed and developing country are also being implemented, including those supported by JICA and those initiated by Australia (Table 2).

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<sup>19</sup> UN-REDD website: <http://www.un-redd.org/Home/tabid/565/language/en-US/Default.aspx>

Table 2 Major REDD plus activities under bilateral agreement

Donor and host Countries	Name	Amount of support funding	Supported activities
Australia & Indonesia <sup>20</sup>	Indonesia-Australia Forest Carbon Partnership (IAFCP) *Under IAFCP, a total of 100 million AUD is planned to be funded.	30 million AUD (Kalimantan Forests and Climate Partnership)	A four-year project in Central Kalimantan started in 2008 with the objective of implementing REDD plus activities in the area containing peat bog through the use of highly reliable and effective methods. The project is being carried out in peat bog forests extending over 100,000 hectares or more and in the degraded forests in the province of Central Kalimantan.
		30 million AUD (Sumatra Forest Carbon Partnership)	A project under IAFCP started in 2010 in Jambi, Sumatra. Different from the project in Central Kalimantan that focuses on peat bogs, this is to implement REDD plus activities in mineral sands areas in Sumatra.
		10 million AUD (bilateral package of support to Indonesia on forests and climate)	Support for policy-making in relation to forests in Indonesia, particularly supporting the development of the Forest Resource Information System, Forest Resource Information System, and National Carbon Accounting System.
Australia & PNG	Papua New Guinea-Australia Forest Carbon Partnership	3 million AUD	A partnership program started in 2008 for REDD plus implementation, focusing on helping PNG enter the carbon market (issuing carbon credits) in the future. In the preparatory stage for the implementation of REDD plus, the support is to be directed to the technical and scientific aspects as well as the establishment of a governance structure. Introduction of the system for monitoring forest carbon stocks in PNG is also covered by the program.
Norway & Tanzania <sup>21</sup>	The Tanzania-Norway climate change partnership	100 million USD	A partnership program agreed on between Norway and Tanzania in 2008, with the objective of promoting climate change measures, including REDD plus activities in Tanzania; this five-year project is designed to help develop not only mitigation measures but also adaptive measures. It also covers other areas, such as poverty reduction, the conservation of biodiversity, and sustainable land use.
Norway & Indonesia <sup>22</sup>	Letter of Intent	1 billion USD	A partnership program agreed on between Norway and Indonesia in May 2010; a total of one billion USD is to be provided by Norway to support the implementation of REDD plus. In the two years of 2010 and 2011, 200 million USD are planned to be provided as the funds for the activities of Phase 1. The remaining 800 million USD will be provided depending on the emissions reduction achieved through the suspension on new concessions (performance-based payment).

<sup>20</sup> Department of Climate Change and Energy Efficiency 2011, Action under the International Forest Carbon Initiative; available on the UNFCCC website at: <http://www.climatechange.gov.au/government/initiatives/international-forest-carbon-initiative/action.aspx>

<sup>21</sup> Kotoomba Group 2011, Norwegian Initiatives for REDD; available on the UNFCCC website at: <http://www.katoombagroup.org/documents/events/event18/IVARJORGENSEN-REDD.pdf>

<sup>22</sup> Royal Norwegian Embassy in Jakarta 2010, Norway and Indonesia in Partnership to Reduce Emissions from Deforestation; available on the UNFCCC website at:

[http://www.norway.or.id/Norway\\_in\\_Indonesia/Environment/Norway-and-Indonesia-in-partnership-to-reduce-emissions-from-deforestation/](http://www.norway.or.id/Norway_in_Indonesia/Environment/Norway-and-Indonesia-in-partnership-to-reduce-emissions-from-deforestation/)

### 3.4 Others

In parallel with negotiations under the UNFCCC and initiatives led by other international organizations, the REDD Plus Partnership was launched in May 2010 with the participation of developed countries, including Japan and others (Japan co-chaired it with PNG in 2010) and helps facilitate comprehensive agreement on REDD plus under the next framework for 2013 and beyond, including policy aspects such as financial support and technical aspects. These voluntary efforts of a group of willing countries not only provide expertise to negotiations under the UNFCCC but also promote in-depth approaches to various challenges in implementing REDD plus.

In addition, the outcome of the 10<sup>th</sup> meeting of the Conference of the Parties to the Convention (COP 10) for Convention on Biological Diversity (CBD), etc., emphasized the importance of safeguards that ensure the smooth and appropriate implementation of REDD plus activities,<sup>23</sup> which are comprehensive activities for forest ecosystems, while pointing out the challenges to be tackled. Thus, progress has been made in addressing the challenges of REDD plus by various bodies—not just the UNFCCC.

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<sup>23</sup> Decision 1/CP.16, Appendix A, of the Cancun Agreements includes seven safeguard items from (a) to (g). They are roughly divided into four categories, by nature category: 1) forest governance, 2) consideration for local residents/indigenous peoples, 3) the conservation of biodiversity, and 4) the challenges specific to the areas of carbon sinks.

## 4. Bilateral Offset Credit Mechanism proposed by Japan for the framework for 2013 and beyond

### 4.1 New growth strategy and REDD plus

In June 2010, the Japanese Cabinet approved the “Blueprint for Revitalizing Japan (Genki na Nippon)”<sup>24</sup> New Growth Strategy, announcing its goals to reduce worldwide GHG emissions by at least 1.3 billion tons (equivalent to the total emissions of Japan) by using Japanese private-sector technologies, along with a roadmap emphasizing the importance of overseas activities. REDD plus is expected to have enormous mitigation potential in this context, and is attracting interest as an activity based on the new growth strategy.

In negotiations concerning the subsequent framework for the UNFCCC from 2013 and on, Japan has not endorsed a mere extension of the Kyoto Protocol. Thus, depending on the situation, the bilateral offset credit mechanism may also be applied along with multilateral schemes as part of efforts to reduce GHG emissions pending international agreement on the next framework.

### 4.2 Outline of the bilateral offset credit mechanism proposed by the Ministry of the Environment

In a side event of the 34<sup>th</sup> Meeting of Subsidiary Bodies (SB34) of the UNFCCC, held in June 2011, the Ministry of the Environment proposed a form of the bilateral offset credit mechanism for mitigation measures for 2013 and beyond (Figure 8).

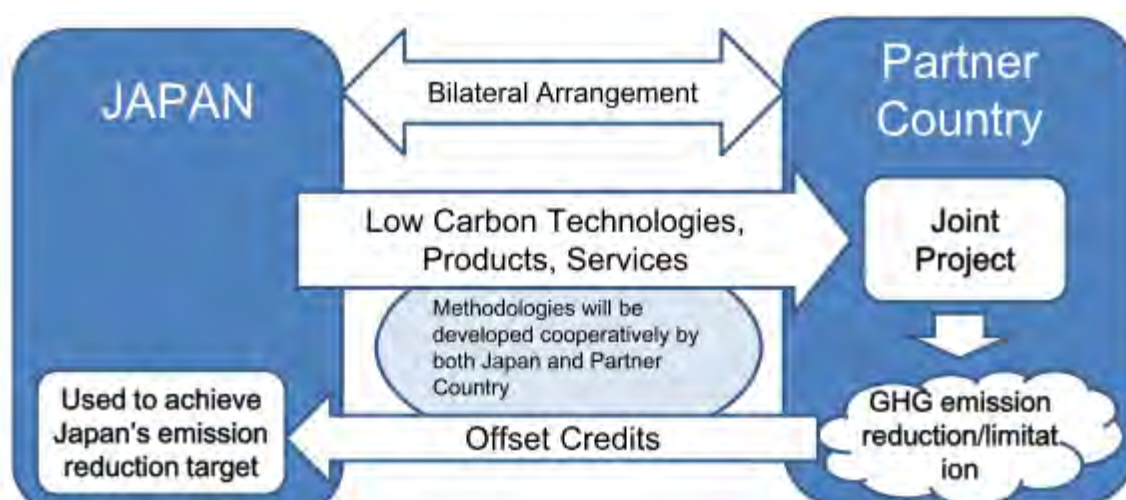


Figure 8 Bilateral offset credit mechanism proposed at the SBSTA by the Ministry of the Environment<sup>25</sup>

The ministry summarized the idea of this the bilateral offset credit mechanism in its relation to existing

domestic and international global warming measures, including how to implement it under the UNFCCC, as follows:

- The new bilateral market mechanism is supposed to be built and implemented under the UNFCCC.
- Basic principle of the new market mechanism will be adopted by COP, based on which each country will build a market mechanism that ensures transparency and environmental integrity, while reflecting the situation of each country.
- In doing so, not only a centralized (national-level) governance scheme but also a decentralized (sub-national level or project-level) governance scheme can be used.
- Each country will be required to report to the UNFCCC secretariat on how its market mechanism is built and implemented on a regular basis.

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<sup>24</sup> Available at Prime Minister of Japan and His Cabinet Web Site (<http://www.kantei.go.jp/jp/sinseichousenryaku/sinseichou01.pdf>)

<sup>25</sup> Ministry of the Environment, 2011; presentation material for a side event of the 34<sup>th</sup> Meeting of Subsidiary Bodies (SB34) of the UNFCCC; available on the UNFCCC website at: [http://regserver.unfccc.int/seors/reports/archive.html?session\\_id=SB34](http://regserver.unfccc.int/seors/reports/archive.html?session_id=SB34)

## 5. Objectives of the study and points to note

### 5.1 Roles of Japanese private enterprises and JICA

Japan has introduced the Offset Credit (J-VER) mechanism, which is domestic emission trading system on a trial basis whereby private-sector enterprises participate in carbon offsetting for domestic forests. In this context, recent years have seen growing numbers of Japanese companies willing to purchase credits for GHG emissions reductions or removal achieved in forests located in developing countries through carbon offsets or other schemes.

However, forest conservation projects in developing countries face myriad problems, including technical issues related to determining expected future GHG emissions (establishing reference level) and measuring actual reductions and removals of GHG (MRV system); political problems related to building consensus among stakeholders, including local peoples; and methodologies for capacity building by the fund approach already up and running in some developed countries. Implementing these projects will require broad knowledge and experience.

With extensive experience in forest conservation projects in developing countries, particularly in tropical regions, JICA is accumulating technical knowledge and experience and creating networks of personal connections.

Reviewing JICA's achievements and problems, grasping the needs of private-sector enterprises, and considering a system to link them is a highly effective way to persuade private-sector enterprises to invest in forest conservation projects in developing countries and to implement and expand forest carbon credit activities. For this reason, this study has paid ample attention to the total resources held by JICA and the private sector as well as trends related to REDD plus initiatives.

### 5.2 Focus of the study

The status of REDD plus activities in Japan and abroad is a major factor in a study of REDD plus institutional designs, trade in issued credits (including carbon offsetting), or corporate collaboration. The following items in particular merit attention.

#### 5.2.1 Status of REDD plus credit

The critical issue at the international level is whether credits from REDD plus will be used as emissions reduction targets in the UNFCCC framework from 2013 and beyond (whether a compliance market will be formed and can be used in connection with Japan's mid-term goal [a 25% reduction from 1990 levels]). The critical issue for Japan is whether REDD plus credits can be used in emissions trading systems scheduled to be introduced (whether enterprises can account these credits in their REDD plus activities to achieve emissions reduction targets). These issues need to be examined.

The former, in particular, is highly likely to involve issues related to the accuracy of the MRV system and the handling of ODA (e.g., input restrictions). A comprehensive strategy must be developed

## 5.2.2 Status of bilateral activities

It remains undetermined whether bilateral activities (or bilateral offset credit), a topic of ongoing discussion in Japan and abroad, will find their way into the UNFCCC framework (whether developed countries may account such credits as part of their bilateral offset credits to achieving their targets). The study team must pay attention to discussions at the 17th Conference of the Parties (COP17) under the UNFCCC to be held at the end of 2011. If the UNFCCC framework incorporates bilateral offset credits, it remains likely they will develop into multilateral credits, which in turn suggests the need for due attention to existing rules of use of forest carbon stock, the accuracy of an MRV system, and so forth.

If bilateral offset credits continue outside the UNFCCC framework, it becomes necessary to clearly demonstrate, while carefully assessing domestic and international movements, that Japan is taking action against global warming and to consider the following issues;

- Many enterprises are now implementing forest projects in developing countries. If the institutional design is so loose as to encompass all existing activities as REDD plus, the international community may cast a critical eye on Japan's mitigation measures. Without due care, biodiversity and other safeguards, which are now receiving increasing attention alongside REDD plus, could also be a focus of criticism.
- REDD plus requires capacity-building in developing countries (this is a problem unique to REDD plus and not observed with respect to the Nationally Appropriate Mitigation Actions [NAMAs]). If REDD plus is based solely on bilateral systems between developed and developing countries, capacity-building may be ignored in implementing REDD plus. That is, only regions in which no capacity building is necessary may be selected.

## 5.2.3 Institutional obstacles to REDD plus implementation

Another important issue is how to manage funds related to REDD plus in bilateral activities. This merits ongoing monitoring. How contributions from developed to developing countries will be distributed for actual projects greatly influences the success of REDD plus projects and is one of the major points Japan must consider when supporting or implementing such projects.

Additionally, for REDD plus projects on a level below sub-national (on a community or cluster level), an important issue is achieving consistency with credits issued on a sub-national or national level (i.e., how to prevent double counting). REDD plus projects by the Nested Approach have drawn attention in developing countries, but the handling of issued credits also requires examination.

## 5.3 Objectives of the study and points to note

Based on “6.1 Roles of Japanese private enterprises and JICA” and “6.2 Focus of the study], the 3 research objectives of this study were as follows.

### 5.3.1 Gathering, reviewing, and analyzing existing information

The study team reviewed major achievements, problems, and lessons related to REDD plus projects

implemented or being implemented by JICA and reviewed and analyzed the roles JICA can play in solving problems private-sector enterprises, municipalities, and other entities may face when participating in REDD plus activities.

- The study team gathered and compile information on carbon offsets and related schemes and activities by private-sector enterprises, municipalities, and other such entities in Japan and abroad, assess their interest in forest conservation projects and capacity building projects in rural area, and summarize problems they are likely to encounter when implementing such projects.

### 5.3.2 Verifying and supplementing proposal contents and data obtained from field studies

This study verified and supplemented (1) the information obtained and analyzed through field studies and (2) the details of concrete approach proposals. Based on the particular circumstances of each country, this study then aimed to make detailed proposals about JICA's role and involvement in REDD plus activities. The study also set out to (1) examine proposals for private-sector involvement in carbon offsetting and (2) detail any related problems.

### 5.3.3 Proposing concrete approaches that allow for the participation of private-sector enterprises/local governments in planning

Based on “6.3.1 Gathering, reviewing, and analyzing existing information”, this study examined the options for private-sector enterprises/local governments who wish to cooperate with JICA when participating in activities related to carbon offsetting and so on, with the aim of proposing concrete approaches, especially for those countries targeted for field studies.



## Chapter 2 JICA's project experience and the role of JICA in REDD plus

### 1. Background on why JICA is expected to play a great role

When a few countries first pushed for REDD plus to be incorporated in to the UNFCCC COP 11 in 2005, the idea didn't receive that much support. However, discussions over the stipulations of the first commitment period (2008-2012) of the Kyoto Protocol had finished and negotiations about the post-2013 framework had started, so the topic was raised in the COP or the SBSTA Land Use, Land-Use Change and Forestry (LULUCF) discussions, so each country has had ample time to exchange opinions on the topic up until now. It was under these circumstances that the Stern Review<sup>26</sup> was released. The Review pointed to the huge climate change mitigation potential of rainforests as well as their strong economic value. As a result, REDD plus suddenly became an important topic during COP13 negotiations about the post-2013 framework.

Behind the active engagement of developed nations with REDD plus is the chance to build Win-Win relationships between tropical forest conservation and the various activities to resolve problems facing the planet, such as measures against global warming and poverty as well as efforts for sustainable development of rural areas and biodiversity. REDD plus demands a comprehensive approach from the start and is based on the promotion of sub-national or national-based projects, so the system would be impossible without organizations with relevant knowledge and resources. For this reason, though CDM projects were totally private-sector led and did not receive any ODA funding, REDD plus projects will be led by international NGOs or aid agencies from each country, with private-sector actors or the financial sector offering support from thereon.

Based on this, it is hoped that JICA will play a central role in the formulation of Japan's REDD plus strategy.

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<sup>26</sup> This report was prepared by ex-World Bank Chief Economist and current Special Adviser to the UK Government on the Economics of Climate Change and Development, Dr. Nicholas Stern and presented to the UK's prime minister and finance minister.

## 2. Points to note about REDD plus when considering the role of JICA

### 2.1 The phased approach

Many pilot projects have been implemented across various regions for the purposes of carrying out a detailed investigation into the kinds of measures necessary to fulfill the regulatory requirements of REDD plus projects. The results of these pilot projects revealed that it is not enough to just implement forest conservation projects by themselves. Before such activities can be started, it will be necessary to (1) carry out capacity building with local residents and governments, and (2) establish a governance structure with regards to forest conservation strategy.

On this point, the idea of a phased approach to REDD plus was set forth in the resolution (the Cancun Agreements) reached at the COP 16 meeting. This approach calls for a preparatory period for capacity building and for establishing governance structures before the implementation of any REDD plus system that relies fully on market mechanisms. Capacity building targets local residents and works towards the improvement of (1) social capacity (such as gender equality and the education of residents living in areas targeted for REDD plus projects) and (2) economic capacity (such as farming techniques, forest conservation techniques, and the establishment of alternative income sources to slash-and-burn agriculture). Also necessary will be capacity building related to monitoring and the formulation of land-usage plans that includes government participation.

### 2.2 Safeguards

REDD plus aims to ensure that (1) local residents are not shut out from forest areas and (2) unreasonable restrictions are not placed on the daily activities of residents who depend on forests for their living due to forest conservation projects. For this reason, REDD plus emphasizes respect for the rights of local residents. Furthermore, in order to prevent the replacement of natural forests with non-native fast-growing tree species (due to an over-emphasis on promoting CO<sub>2</sub> sinks), REDD plus also has formulated safeguards with regards to biodiversity. The ways that JICA responds to these safeguards are described in the JICA's role below.

### 2.3 Integrated strategy

There are many examples of cases whereby deforestation or forest degradation is caused by the socio-economic structure of developing nations, such as governance issues or poverty. For this reason, the problem of deforestation cannot just be solved by transferring technology to the forestry sector. In order to promote sustainable forest conservation that roots out the underlying factors of deforestation, it will be necessary to tackle a variety of socio-economic problems (building the capacity of local residents, land-use planning that involves citizens, projects to tackle poverty, the establishment of governance structures, etc.) Concretely-speaking, the most universal cause of deforestation is thought to be the transfer of farmers without land/farmers living on unproductive land into forest areas, which results in land clearing, slash-and-burn agriculture and forest fires pertaining to these issues. Other factors include: disorganized

forest management (illegal logging, etc.); the granting of logging concessions by governments without any consideration of environmental issues; and the appropriation of concessions for commercial crop cultivation. For these reasons, it will not be enough to just promote techniques related to forest management - there needs to be a comprehensive REDD plus strategy that also targets socio-economic issues.

## 2.4 Monitoring

In order to establish a REDD plus system that can operate using market mechanisms, it will be necessary to provide data related to the results of efforts to prevent deforestation and forest degradation. For voluntary carbon markets, it will be enough to just monitor small areas of land. With regards to the issuing of credits in compliance markets though, monitoring on a national or sub-national level will be required. It will also be important to ensure consistency among all land-use classifications and forest-type classifications (not just the biomass volumes targeted by REDD plus) that comprise the forest inventories already being put together in each country.

## 2.5 Coordination between REDD plus actors

In regular forest conservation projects, it is enough to just deal with the administrative agency in charge of the forest industry as well as a few villages. However, REDD plus does not just deal with the forest industry but also involves a number of related sectors such as farming, water, poverty, hygiene and sanitation, education and infrastructure. For this reason, it will be necessary to engage with a large number of administrative agencies. It will also be necessary to deal with the various local government bodies involved in the targeted project area (from the urban level down to the village level) as well as with local residents with various interests related to forest conservation. Therefore, it will be important to proceed with REDD plus activities whilst promoting accord between the numerous actors involved in the prevention of deforestation or forest degradation.

## 2.6 The allocation of REDD plus profits in an appropriate manner

REDD plus is a system whereby actors receive credits for achievements in forest conservation (Result Oriented). As mentioned above, it will be necessary to consider local residents as well as government agencies as an actor involved in forest conservation. In some countries, there are cases where local residents play a central role in implementing REDD plus activities. Therefore, it will be essential to ensure that profits derived from REDD plus activities are passed on to local inhabitants in order to give them incentives to conserve forests. However, even in a developed country like Japan, it was no easy matter to distribute relief money in the aftermath of the Great East Japan Earthquake. It will be necessary to devise a new framework to ensure that REDD plus profits are passed on to local inhabitants in developing countries with governance problems.

## 2.7 The time lag between the commencement of REDD plus activities and the issuance of credits

When REDD plus activities are implemented according to market mechanisms like the CDM, there will be a time lag of several years until the issuance/sale of credits and the obtaining of profits. For this reason, REDD plus actors will need to provide some kind of financial support in order to provide incentives to local residents to conserve forests. A certain amount of funding will also need to be invested in the first stage in order to contribute to the costs of building the capacity of local inhabitants.

### 3. JICA's role in the implementation of REDD plus projects

#### 3.1 REDD plus implementation levels under the bilateral offset credit mechanism

A basic agreement has been reached during UNFCCC negotiations with regards to the necessity of implementing REDD plus projects on a sub-national or national basis in order to avoid leakage. Looking at the situation in Indonesia and the five countries that were subjects of this survey's field research, there do appear to be plans for the implementation of REDD plus projects on a national level or sub-national level (on a province government or prefectural government level).

On the other hand, though there also plans for new bilateral offset mechanisms like NAMA, the main focus is expected to be on emissions reduction/carbon sink projects under bilateral agreements. Sub-national-based REDD plus projects under bilateral offset mechanisms will also be possible if several actors can form close cooperative relations on the back of careful planning, though these cases will probably be quite rare. If these kinds of sub-national-based projects were to be pursued, then JICA would probably play a central role and would work together with other actors such as businesses or NGOs.

This report considers the role of JICA in REDD plus activities implemented on a project basis under the bilateral offset credit mechanism. The process of forming cooperative relations is divided into three levels as follows. The key to deciding which level to form cooperative relations at depends on (1) whether the cooperation is taking place in a region where JICA projects are already underway, (2) whether the cooperation involves private-sector REDD plus activities in regions where no JICA projects are underway, and (3) the maturity of relations between both parties (see 3.1.1 - 3.1.3 below).

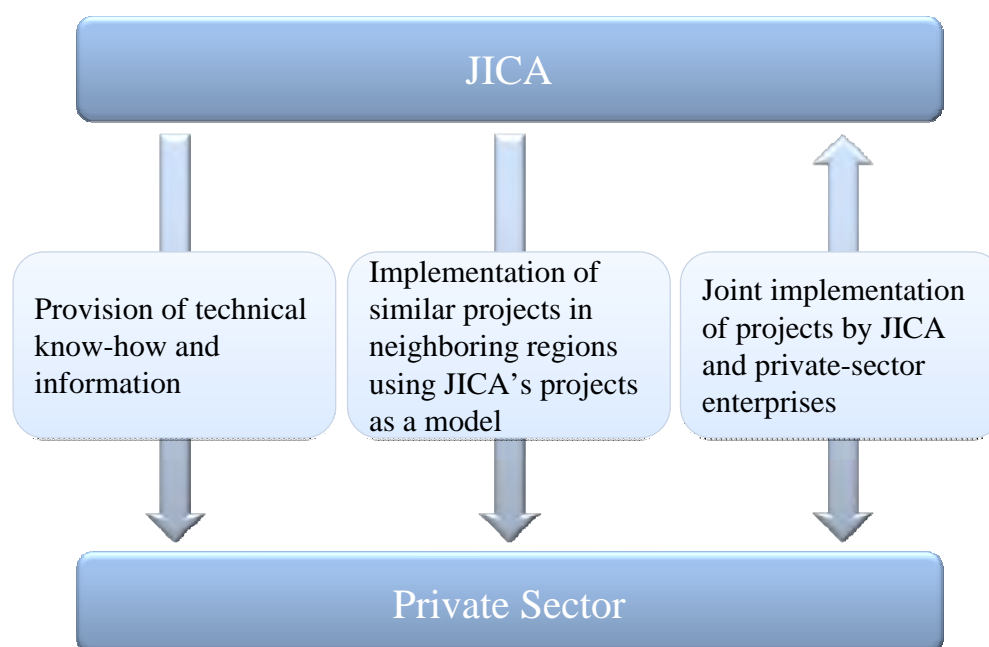


Figure 9 The 3 types of relations between JICA and the private sector

### 3.1.1 When JICA shares its accumulated knowledge and technologies

When there are no JICA projects underway in neighboring regions, the relation between the two parties will be one of one-sided support whereby JICA provides its knowledge and technologies. Furthermore, when cooperation between both parties is at the initial stage, the collaborative relation will take the form of guided support centered around the provision of JICA knowledge and technical skills.

JICA has been implementing a number of technical cooperation projects in the fields of forest technology and social forestry. Most of the knowledge gained from these projects can be applied to the formulation of REDD plus strategy as well as the planning and implementation of REDD plus activities. In other words, the chances of REDD plus projects being implemented in the short term depends on how much JICA's accumulated knowledge can be utilized by private-sector enterprises engaged in REDD plus activities. JICA's technical knowledge is listed below. As you can see, this knowledge covers a wide range of areas.

In addition, following technical knowledge means accumulated knowledge of JICA and include meanings of experiences, knowledge and know-how.

#### (1) Technical knowledge related to land use

##### 1) The Formulation of plans for land use

Land use planning is a basic technical skill for the implementation of REDD plus. The planning involves not only the accumulation of information related to the natural environment as well as socio-economic and environmental conditions for the formulation of appropriate land use plans but also a number of other technical skills including: the measurement of land plots; data processing; the determination of land ownership rights; and consensus building. When it comes to the formulation of land use plans, JICA has accumulated ample technical skills and knowledge in this area through its technical cooperation projects and development surveys in the forestry sector.

##### 2) Farming techniques

One of the biggest causes of deforestation and forest degradation is the unregulated expansion of farmland for slash-and-burn agriculture, commercial crop production or cattle breeding. Improvements in farming productivity will be necessary to curtail this expansion. JICA has been involved in numerous farming projects for a while now and has accumulated a huge amount of technical knowledge in this area.

##### 3) Forestry management

A number of technical skills are necessary for the implementation of sustainable forestry management. These include: suitable lumber production; pest control; the appropriate allocation of forest species; and management that makes the most of the public functions of forests. It will also be important to prevent forest fires and clamp down on illegal logging, etc. Reforestation activities were originally at the core of JICA's forestry projects, as seen in the Pantabangan Forestry Development

Project in the Philippines (1976-1992), but from the 1990s onwards JICA has been implementing projects aimed at forest conservation and sustainable forest management.

#### 4) Forest regeneration/reforestation techniques

Woodland creation in denuded lands has been a target for JICA projects for a while now, particularly woodland creation and forestry regeneration in (1) arid lands, (2) post-slash-and-burn grasslands and (3) swamp forests in coastal areas. Regular industrial forestation is not included in REDD plus activities, depending on the country. However, many of JICA's woodland creation activities can be including in REDD plus projects.

#### 5) Agroforestry

Agroforestry is a technical system that combines methods of farming and forestry. Most JICA forest conservation projects do not specifically target agroforestry itself, but JICA is adopting agroforestry as a way to implement forest conservation and rural development. Agroforestry is an effective alternative to slash-and-burn agriculture (a contributory factor to deforestation) and as such is a technology that is often used in REDD plus projects.

#### 6) Social forestry

As touched on later in the section on resident participation, forestry management centered on the participation of residents is one of the representative approaches that JICA has adopted in its forestry projects from the 1990s onwards. Social forestry aims at forest management (mainly of community-owned forests) by resident organizations that incorporate methods of social development. For this reason, JICA has also accumulated a lot of knowledge in this area, just like NGOs.

#### 7) Technical knowledge related to forest resource surveys

JICA is undertaking projects to develop monitoring systems for forest resources in countries like Indonesia, Brazil, Vietnam, Cambodia, Laos and PNG. This system is based on data obtained from satellites. These projects are also suitable for capacity building in relation to REDD plus monitoring and can help greatly when private-sector enterprises are implementing REDD plus projects. However, JICA's fundamental policy is to focus on licensing technology to the governments of the other countries, so JICA is not looking at procedures to enable private-sector enterprises to use the technical knowledge, data and results of these projects when implementing their own initiatives. Monitoring of forest resources is indispensable when implementing REDD plus projects under the bilateral offset credit mechanism, so it would be advisable to create a framework to enable private-sector enterprises implementing REDD plus activities to utilize JICA's technical support and the results/key data obtained from JICA projects.

##### i Remote sensing

The target regions for REDD plus projects at a national or sub-national level stretch over a wide area, so the use of remote sensing is vital. JICA has provided help to many countries in this area through

technical cooperation projects and so on. JICA's achievements in this area outstrip those of other international donors. Even when implementing projects based on the bilateral offset credit mechanism, it is important to ensure consistency in monitoring methods at both the national and sub-national level. Therefore, this is a sector where JICA can achieve results by providing technology or information.

Though satellite remote sensing can monitor deforestation to a certain extent, other means such as aerial photography or laser profiling (LiDAR) will be necessary to monitor forest degradation. In the past, JICA has carried out many development surveys in this field at individual river basins, so the technology used at that time can play a useful role.

## ii Ground surveys

Ground surveys are essential to provide ground truth data for remote sensing analysis. Furthermore, it is difficult to analyze biomass measurement levels or forest degradation using current remote sensing data alone, so it will also be necessary to incorporate ground-level biomass measurements. The experience gained in development surveys will also be useful here.

## 8) Preserving biodiversity

Another safeguard that REDD plus places importance on is the preservation of biodiversity. For many years now, JICA has been implementing biodiversity projects at national parks, etc. across the world. In particular, these projects include local residents not just in forest conservation activities but also in biodiversity preservation. As a result, JICA possesses a lot of knowledge with regards to how REDD plus projects handle biodiversity.

### (2) Technical knowledge related to capacity building

#### 1) Ascertaining the needs of local residents

REDD plus is a performance-based system, so in order to provide incentives to local residents to engage in forest conservation, it will be necessary to ascertain the needs of residents and to provide support to meet these needs. The process of meeting the needs of residents is also related to capacity building for the purposes of forest conservation. If we look at JICA's forest projects over recent years, we can see how in many cases JICA has managed to achieve project goals while meeting the needs of residents. JICA has accumulated a lot of applicable knowledge and technical skills in various regions with regards to ascertaining and meeting these needs. Furthermore, this technical know-how is also directly related to safeguards.

#### 2) Creating social structures that consider the needs of socially vulnerable groups (gender)

In general, most residents living in areas bordering between forests and farmlands are afflicted with poverty. For this reason, there are concerns that that REDD plus activities could lead to substantial disadvantages for the poor. Consideration of these people is also called for in REDD plus guidelines.

Socially-vulnerable people are the fundamental targets of JICA's resident-participation-type forestry



projects. Based on this, JICA has a good understanding, based on the results of JICA projects, of how to involve poor people into REDD plus activities.

### 3) Resident-participation-type forest management

Local residents need to play a central role in activities like REDD plus that involve forest conservation over a wide area. Furthermore, REDD plus calls for sustainable projects, so it will be important to ensure the active participation of residents groups in REDD plus activities. For this reason, knowledge about how to involve residents into projects will be essential. JICA's accumulated knowledge can contribute in this area too.

### 4) Fostering a sense of ownership (among the partner agencies or local residents)

Though forest conservation involves a wide range of technical skills, advanced technology is not essential. More important is the fostering of a sense of ownership among residents with regards to forest conservation projects, one that leads to an awareness that the residents themselves are the custodians of forest conservation activities. This involves: furnishing socially-vulnerable people with the capacity to voice their own opinions; promoting awareness about the various functions of forests; and implementing literacy programs. In this way, it will be possible to promote an awareness among local residents that forest conservation projects are for their own benefit. The final goal of JICA's initiatives is to ensure the sustainability of projects by passing the activities of completed projects over to partner agencies or local residents. JICA has ample experience (both successful and unsuccessful) of trying to put together projects that always consider counterpart/resident ownership.

## (3) Technical knowledge related to the establishment of governance structures

Common causes of deforestation and forest degradation include: forest fires; the inappropriate allocation of logging rights; the lack of any effective forest management system; dysfunctional land use plans; illegal logging; and the expansion of unregulated slash-and-burn agriculture. It is difficult to tackle these issues if governance structures are weak. JICA has carried out a number of initiatives to improve governance structures during technical cooperation projects.

### 1) Decision-making processes that involve numerous stakeholders

Forestry resources are particularly valuable natural resources for central governments due to the valuable revenue earned through lumber production and the sale of concessions. As a result, these resources are often nationalized. However, the historical record shows that local residents used to participate in various ways in decisions regarding forestry usage. Though there were some rules regarding forest usage during this period, after the forests were nationalized, local communities no longer shared responsibility for forest management. This became a factor in deforestation. Therefore, in order to prevent deforestation and forest degradation, it will be important for stakeholders (governments, local governmental agencies, residents, lumber companies and so on) to get together to decide measures for conservation and utilization of forest resources. In other words, the establishment of governance

structures is vital for forest conservation.

## 2) Policy formulation

The formulation and execution of appropriate policies at a national and regional level is a key factor in the realization of REDD plus projects. It is important that the stakeholders mentioned above are also involved in the formulation of policy. However, in regions without sufficient experience in the area of forest management, the advice of outside parties will be necessary.

REDD plus involves not only forestry policy but also farming and land use policy. JICA has ample experience in dispatching individual specialists overseas to help the governments of developing countries to formulate policies in these areas. If private-sector enterprises utilize this know-how, it will be possible to put together realistic plans for REDD plus activities.

## 3) Resident-participation-type decision-making processes

Local residents and communities in forest regions represent the actors with the weakest voices when it comes to the process of formulating forest conservation policy or deciding upon REDD plus action plans. Safeguards should be implementing to ensure that the voices of native communities and communities living in forest areas are respected. JICA has a lot of experience in projects aimed at improving the lifestyles of socially-vulnerable people, so JICA is helping to establish forums that involve local residents in decision-making processes related to the usage of community lands, forests and farmlands.

As mentioned above, the integrated usage of multi-faceted technologies and information is vital for the implementation of REDD plus projects. JICA is the only actor in Japan possessing technologies, know-how and information that covers all these areas. These technical skills are outlines below in Figure 10.

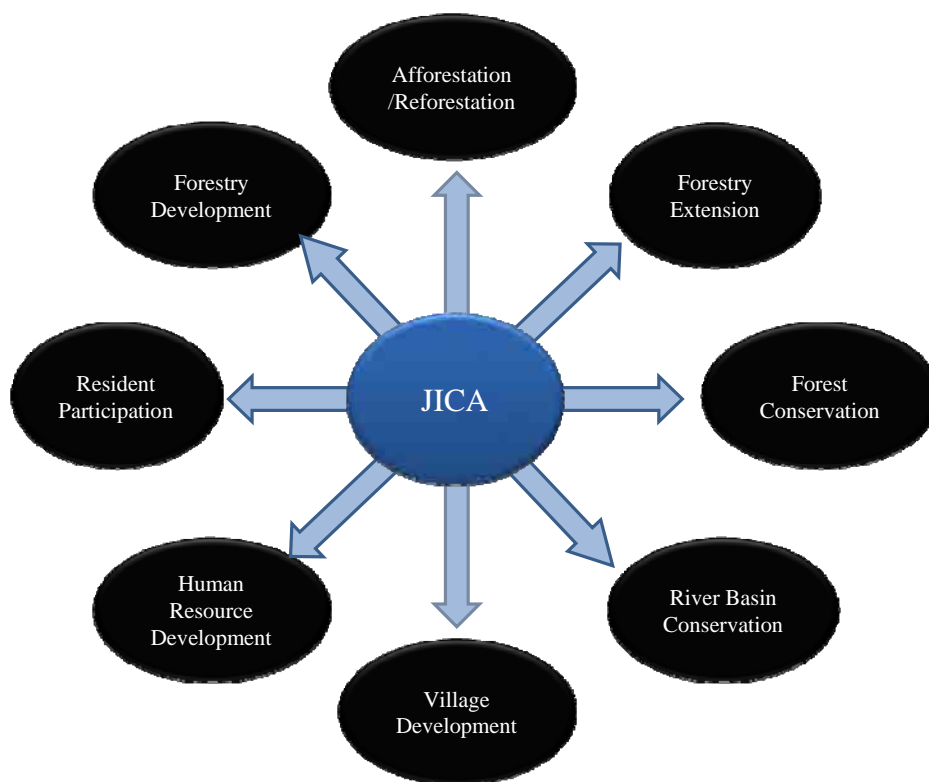


Figure 10 JICA's accumulated technologies and knowledge

### 3.1.2 When private-sector enterprises use JICA projects as a model when implementing similar projects in neighboring regions

JICA's projects are limited to certain areas or activities, but JICA's ultimate goal should usually be to ensure that its activities are then implemented outside the target areas by counterparts (government agencies in the relevant countries). Counterpart institutions are rarely able to carry out this role though because of lack of personnel/financial resources together with inadequate structures/organizations. However, by using JICA projects as a REDD plus pilot model and by using JICA's achievements as a model for the acquisition of REDD plus credits, it will be possible to provide incentives to private-sector enterprises/national governments to expand these projects into neighboring areas.

When this way of thinking is transposed onto REDD plus projects, the outcome is as outlined below in Figure 11.

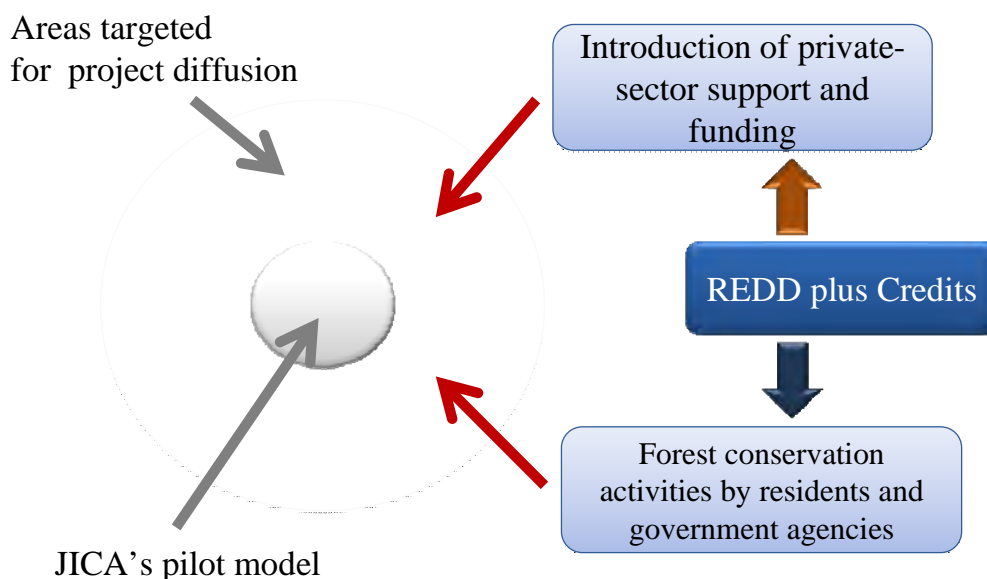


Figure 11 Diffusion of pilot model (image)

This cooperative method involves JICA first of all implementing pilot REDD plus projects, with private-sector organizations then implementing similar projects in neighboring regions using the JICA projects as models. JICA rarely considers carrying out REDD plus projects on a project basis – JICA projects are usually intended for implementation at the sub-national or national level. For this reason, JICA dispatches specialists to develop REDD plus methodologies at a sub-national or national level. JICA oversees (1) capacity building for monitoring at a sub-national or national level and (2) the setting of reference levels. This means private-sector enterprises will be able to skip over a number of troublesome technical steps and will be able to use JICA's pioneering models to smoothly implement REDD plus projects together with the residents of neighboring regions.

Furthermore, there is currently a strong possibility of REDD plus credits being issued at a sub-national level in compliance markets. This also means that actors will be able to lessen the risk associated with profit sharing by implementing projects in areas where JICA is active.

### 3.1.3 When JICA and private-sector enterprises implement projects jointly

This is the recommended method of cooperation for the phased approach. In general, JICA projects that emphasize resident participation tend to focus on meeting the needs of residents and engaging in resident capacity building initiatives.

At the same time, when the phased approach to REDD plus is adopted, capacity building and the establishment of governance structures are key activities in phase 1. These are activities that play to JICA's strengths. This method applies to cases whereby private-sector enterprises carry out REDD plus activities jointly with JICA from phase 2 (the readiness phase) onwards before independently implementing projects in phase 3 (the phase where they can expect to receive carbon credits) (Figure 12).

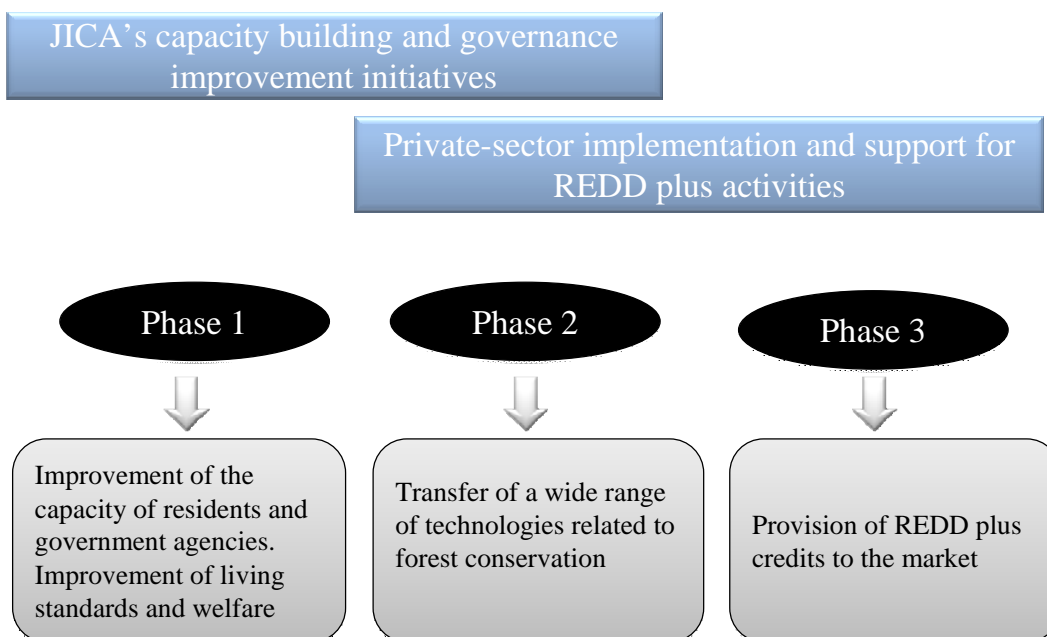


Figure 12 Cooperation between both parties in REDD plus projects (businesses)

Apart from the aforementioned cases, there are also cases whereby environmental NGOs independently accumulate knowledge related to local resident capacity building. What NGOs need in this case is JICA's support in the capacity building stage with regards to funding or negotiations with governmental agencies. Another cooperative method is where JICA provides logistical support and leaves the implementation of the actual activities to the NGOs (Figure 13).

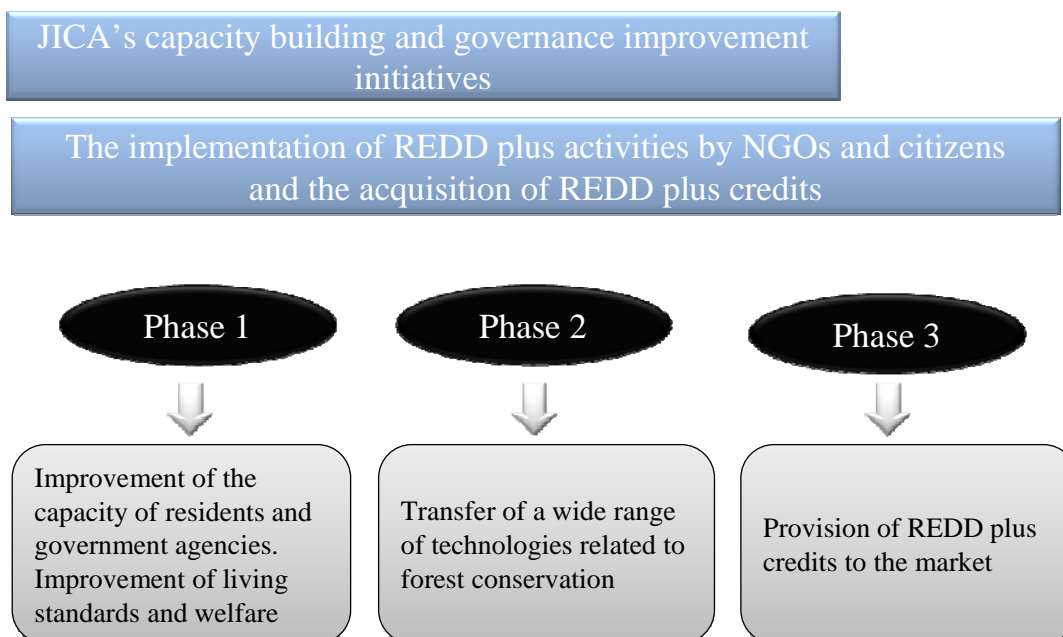


Figure 13 Cooperation between both parties in REDD plus projects (NGOs)

Even if actors are aware of how to incorporate technologies into REDD plus projects, it will still be necessary to incorporate several types of knowledge in order to actually put together a land use plan that involves the participation of residents and coordination between stakeholders. At present, knowledge related to this process (from project formulation and implementation to self-sustaining post-project development) is only held by NGOs with ample experience in this area. On the other hand, JICA carries out numerous projects each year and has accumulated actual knowledge with regards to how to carry out forest conservation projects with resident participation.

#### 4. What JICA gains from cooperating with the private-sector in REDD plus projects

Up until now, the report has discussed the benefits for private-sector enterprises when implementing REDD plus projects in cooperation with JICA. This section will look at what JICA gains from these kinds of cooperative relations.

##### 4.1 Clarification of incentives for project participants

In the past, it was difficult to give clear incentives to related parties when trying to get local residents to shift from traditional farming patterns to forest conservation or when introducing various regulations on lumber production in order to reduce deforestation. For this reason, the only means available were to provide more benefits through capacity building or to enlighten residents about how the environmental preservation functions of forests can have an indirect impact on raising the productivity of the surrounding farmlands. In the case of REDD plus projects though, it will be possible to explain to local residents how: (1) after JICA's REDD projects come to an end, the private companies, etc. will invest money in (a) new REDD plus projects or (b) the continuation of JICA projects; and (2) local residents will be allocated profits for successful forest conservation. In this way, it will be possible to design projects with a clear image of the output that should be achieved after JICA's projects come to an end.

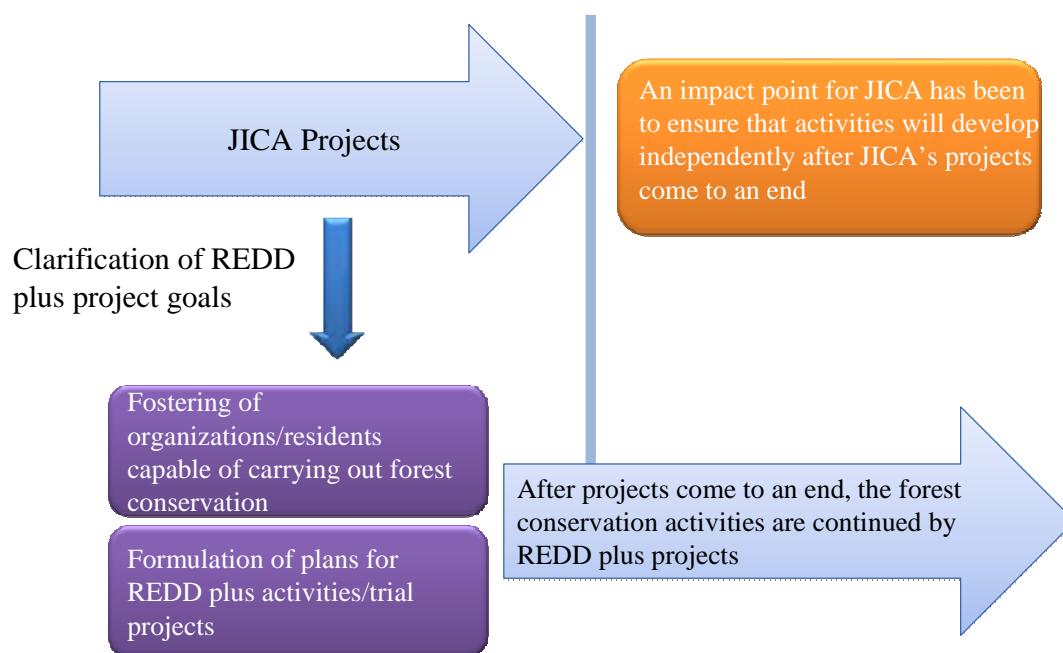


Figure 14 Image of self-sustaining post-project development

##### 4.2 Ensuring the self-sustaining development of the fruits of JICA's grant aid/technical cooperation projects

JICA's usual strategy is to implement technical cooperation projects in model areas with the hope that counterpart institutions will expand these projects into neighboring areas once JICA's projects have come to

an end. Though JICA has had some success in the social forestry sector in countries like Nepal, Panama and Senegal, these examples are not so common. This is mainly because of a lack of means to bridge the gap between JICA's project goals and ultimate aims. However, REDD plus projects involve: capacity building among residents' organizations to prepare them for the period after JICA's projects come to an end; and expectations for external investment into forest conservation. As a result, it will be possible to bridge this gap. Therefore, when it comes to ensuring the self-sustaining development of projects related to forest conservation and social forestry, one issue from hereon will be how JICA itself can actively involve private-sector enterprises (those interested in REDD plus activities) in this task instead of just leaving it to the government of the target nation.



## 5. Future problems and proposals

### 5.1.1 Lack of a database

Though a wide variety of information and technical know-how has been accumulated, the whereabouts of this knowledge is unclear. Many specialists are involved in the forestry sector and have detailed their experiences in reports. However, though the results of projects can be read in project reports, there are often cases where the reports only mention the results without discussing technical skills or knowledge. For this reason, there are cases where technical skills related to the implementation of REDD plus projects can only be found within the experiences of individual specialists. Failed cases are sometimes not analyzed sufficiently and as a result finish without becoming JICA experiences to be utilized later.

When providing technical know-how or information for REDD plus projects, this information needs to be put in a database and a system built for sharing this information with private-sector enterprises implementing REDD plus projects.

### 5.1.2 Information about the process from project planning to implementation

A careful reading of the reports for each individual project can reveal details of the process from starting a project to embedding the technical knowledge in the local area and completing the project goals. However, this can be a laborious task for an outside party. The process of how to complete project goals is important information for private-sector actors implementing REDD plus projects. If there were reports that explained the process of individual projects in an easy-to-understand way, they could be utilized in REDD plus projects from hereon for the information that contains individual technical skills or JICA projects as a whole.

### 5.1.3 Human resources

When private-sector enterprises express an interest in REDD plus projects, the individual enterprise itself rarely has the capacity to cover the demands of all the various sectors involved in REDD plus activities. As a result, these enterprises often have to outsource a lot of sectors. Through its projects and training, JICA has produced many staff well-versed in the area of forest conservation and has put together data related to human resources. This can contribute significantly to Japan's REDD plus initiatives.

When doing so, it will be important to gather knowledge not just about Japanese specialists but also about the human resources working at counterpart institutions.

### 5.1.4 The importance of resident participation

REDD plus safeguards emphasize the need to consider indigenous peoples and local communities that depend on forests. There are several reasons for this, but one reason is the tendency to regard local residents as a factor behind deforestation, so there is a danger that these residents may just be expelled from forest areas during the implementation of REDD plus projects. In actual fact, local residents have a lot of knowledge about how to utilize the various forest and agricultural products derived from the forests.

The spread of this traditional knowledge can act to bolster forest conservation efforts.

REDD plus safeguards regard this kind of traditional knowledge as extremely valuable, but JICA does not currently possess an adequate database for this information.

#### 5.1.5 The creation of a REDD plus support network

JICA is currently implementing REDD plus-related projects across the world, with a number of other projects also in the planning stages. It will be necessary to establish a network for sharing the knowledge gained from these projects. Furthermore, though monitoring has an important role to play in all projects, human resources are limited. A network would be an effective way for a limited number of specialists to support a large number of projects.

At the same time, the Ministry of Environment and the Ministry of Economy, Trade and Industry are already implementing 11 feasibility studies related to REDD plus. The plan is to carry out more studies from hereon, so it will be important for JICA to find ways to collaborate in these kinds of projects. Considering how REDD plus projects are likely to be implemented in future, it would also be advisable for JICA to carry out REDD plus projects together with private-sector enterprises rather than working alone. This is another reason why a network would be beneficial.

Also, as stated on several occasions, REDD plus projects cover a wide range of sectors, not just forestry, so in order for other actors to receive support from the various projects that JICA is implementing across the world, it would be a good idea to create a network for sharing knowledge related to projects carried out in other fields in countries where REDD plus projects are being pursued.

The points considered in “5. Future problems and proposals” from “Chapter 2: JICA’s Project Experience and the Role of JICA in REDD plus” are also reflected in “Chapter 6: Proposed Approaches to REDD Plus” below.

## Chapter 3 Trends of Carbon Markets

This chapter summarizes the challenges in promoting the trading of REDD plus credits under the bilateral offset credit mechanism and, in the future, under the framework of the UNFCCC and current efforts to address such challenges. Also in this chapter, the current trends of carbon markets and handling of forest carbon credits as well as the movements of market players are identified and then the challenges in institutional design are pointed out.

### 1. Direction that REDD plus credit trading should take

#### 1.1 Problems with the A/R CDM

The Afforestation or Reforestation Clean Development Mechanism (A/R CDM), which was introduced as one of the flexibility mechanisms (Kyoto Mechanisms), applied for the first commitment period of Kyoto Protocol, is a mechanism for trading carbon credits from forest sinks under the framework of the UNFCCC. However, the A/R CDM is not designed to provide sufficient incentives for the implementation A/R CDM projects in that it introduces complicated modalities in order to prevent developed countries from acquiring credits easily. For example, as a measure to address the issue of the impermanence of forest sinks, time limits are set on carbon credits, and therefore, credits must be replaced at some point in time (Table 3). The first A/R CDM project was registered in November 2006, a full five years after the international framework of CDM was established under the Marrakesh Agreement<sup>27</sup> in November 2011 and a full two years after the registration of the first emission reduction CDM project in November 2004. While 3,390 emission reduction CDM projects are registered to date (credits for approx. 700 million tons have been issued), only 30 projects are registered as A/R CDM projects, and no credit has been issued (as of September 13, 2011).

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<sup>27</sup> UNFCCC 2005; land use, land-use changes, and forestry (Decision 16/CMP.1 LULUCF); available on the UNFCCC website at: <http://unfccc.int/resource/docs/2005/cmp1/eng/08a03.pdf#page=3>

Table 3 Problems with the A/R CDM <sup>28</sup>

Problems	Description
Cumbersome requirements to demonstrate the eligibility of land	It must be demonstrated that the project area was not a forest as of the end of 1989.
Prohibition of the use of ODAs (basically)	When public funds are used for the implementation of a CDM project, it must be demonstrated that such funds are not diverted from the ODA. <sup>29</sup> This is because if a developed country reduces the amount of ODA, allocates the reduced portion to CDM projects, and collects it in the form of carbon credits, the benefits for the developing country that host the CDM project will lessen. In A/R CDM projects that require lots of funds for various activities other than afforestation, such as the analysis of environmental and socioeconomic impact/related measures or the capacity-building of local residents, etc., prohibition of the use of the ODA will make it difficult to continue projects.
Need for boundary identification	Prior to implementing a project, locations and areas of all project sites must be identified.
Fixed-term credits	As a measure to address the issue of impermanence, time limits are set on temporal Certified Emission Reduction (tCER) CER and long-term Certified Emission Reduction (ICER) issued under A/R CDM projects <sup>30</sup> Fixed-term credits must be replaced before expiration, and necessary steps must be taken for that purpose, such as implementing more than one project, etc.
Complicated procedure of leakage estimation	All types of leakage generated from the removal of residential areas, etc., from the project site, the relocation of agricultural and grazing activities, etc., the increase in the collection of fuel wood for charcoal outside of the project boundary, and the combustion of fossil fuels for project activities, etc., must be estimated.
Inefficiency of validation and verification	Validation and verification are conducted by the designated operation entities (DOEs) accredited by the CDM Executive Board. However, the CDM Executive Board examines the results of validation by the DOEs once again, and therefore, it takes long for a project to be approved. In addition, validation and verification must be conducted by different DOEs, and this is another factor responsible for the prolong period required for validation and verification.

## 1.2 Trade of REDD plus credits on the voluntary market based on the lessons learned from the A/R CDM

On the voluntary market, carbon credits from those projects that have failed to be registered as A/R CDM projects are traded.

The volume of carbon credits traded on the voluntary market increased from 98 million t-CO<sub>2</sub> in 2009 to 131 million t-CO<sub>2</sub> in 2010. After the program period of the Chicago Climate Exchange (CCX) that led the voluntary market ended in 2010, direct trading has been occupying approximately 90% of all trade. In direct trading, credits from afforestation/reforestation and improved forest management account for 11%, and together with credits from REDD activities, etc., they account for 42%, showing that a large volume of forest-related carbon credits are traded (Figure 15). In the voluntary market where the strict modalities of

<sup>28</sup> Forestry Agency Web Site (<http://www.rinya.maff.go.jp/j/kaigai/cdm/pdf/roadmap.pdf>)

<sup>29</sup> Separately from the rules of the CDM, the Organization for Economic Cooperation and Development (OECD) established a rule stipulating that if an ODA donor country acquires carbon credits from a CDM project using an ODA, an amount equivalent to those credits will be deducted from the amount granted as the ODA and will not be considered as part of development assistance.

<sup>30</sup> Each tCER shall expire at the end of the commitment period subsequent to the commitment period for which it was issued. Each ICER shall expire at the end of the crediting period or, where a renewable crediting period is chosen, at the end of the last crediting period of the project activity.

the A/R CDM are relaxed, it is possible to implement forest management projects and issue/trade credits from these projects. It is clear that there is also ample possibility of forest carbon stock credits being issued in the markets, depending on how the modalities are adapted.

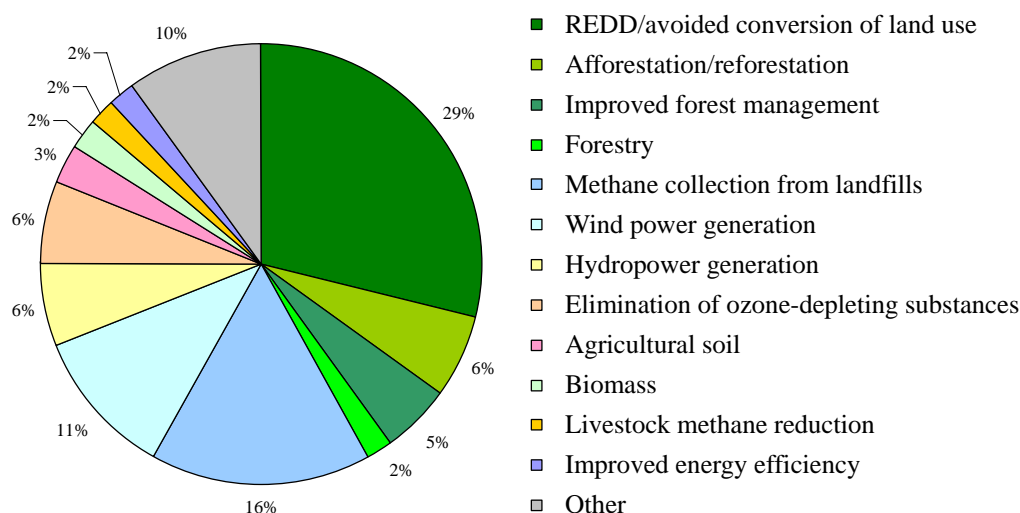


Figure 15 Share of carbon credits traded directly in the voluntary market by project type (2010)<sup>31</sup>

In February 2011, an avoided deforestation project in Kenya was verified under the VCS, and the world's first REDD credits were issued. Based on the lessons learned from the A/R CDM, the VCS program established a partially flexible system of project verification and credit issuance (Table 4).

Table 4 Responses to the problems regarding the A/R CDM under the VCS <sup>32</sup>

Problems with the A/R CDM	VCS responses to the problems
Cumbersome requirements to demonstrate the eligibility of land	It is required to demonstrate that the project area has been a forest for 10 years prior to the project start date, without tracing back to the end of 1989.
Prohibition of the use of ODAs (basically)	There is no specific rule concerning restrictions on the use of ODAs.
Need for boundary identification	As of the time of validation, 80% or more of the project area must be under the control of the project proponent, and the project area must be fixed at the time of verification to be conducted within five years after validation.
Fixed-term credits as a measure to address the issue of impermanence	A system is introduced where some of the credits issued are deposited as buffer credits, and in the event of forest loss, the loss is compensated with the buffer credits.
Complicated procedure of leakage estimation	All types of leakage must be estimated, though requirements are eased, e.g., market leakage may be ignored if it does not have significant impact on timber production.
Inefficiency of validation and verification	Validation and verification can be conducted at the same time. Also, one entity can conduct both. Thus, efficiency is improved.

<sup>31</sup> Ecosystem Marketplace and Bloomberg 2011. Back to the Future -State of the Voluntary Carbon Markets 2011-. Available on Web Site of ([http://www.forest-trends.org/documents/files/doc\\_2828.pdf](http://www.forest-trends.org/documents/files/doc_2828.pdf))

<sup>32</sup> VCS 2011. Agriculture, Forestry and Other Land Use (AFOLU) Requirements. Available at VCS Web Site of (<http://www.v-c-s.org/sites/v-c-s.org/files/AFOLU%20Requirements,%20v3.0.pdf>)

### 1.3 Further challenges in implementing REDD plus under the UNFCCC

In the voluntary market, there is a strong demand for forest carbon credits, and it is desirable that these tradings be taken over by the compliance market. However, while many REDD plus activities aimed at trading carbon credits in the voluntary market are project-based activities, activities under the UNFCCC need to be implemented on a national or sub-national basis.

Expansion of activities from project-based to national-/sub-national-based will lead to increase in the management area, the number of stakeholders, and the diversification of forest conservation activities, etc. These national-/sub-national-based projects on an expanded scale are extremely difficult for private-sector enterprises to undertake. Therefore, cooperation with organizations like JICA, which has the funds for capacity-building in developing countries and connections with local organizations, is indispensable. In order to implement REDD plus activities under the framework of the UNFCCC and to trade carbon credits, it is necessary to invite investment from private-sector enterprises in the target area where infrastructure has been developed by JICA, etc.

### 1.4 Moves toward the trading of forest carbon credits in the compliance market

There are some moves in foreign countries to develop project-based activities into national-/sub-national-based activities, with a view to trading credits in the compliance market.

California and several provinces in developing countries are now constructing a framework for REDD plus activities under the compliance market and are planning to start the trading of carbon credits in 2013 (Table 6). Also VCS, which is playing the leading role in the voluntary market, changed its name from the “Voluntary Carbon Standard” to the “Verified Carbon Standard” this year and is working on the methodology guidelines for sub-national-base activities, with an eye to the shift to the compliance market.

These moves are still under consideration, and some challenges began to emerge. For the future, there are many issues that need to be tackled from a medium- to long-term perspective, including how to ensure consistency between the project-base and sub-national-base activities and how to coordinate the allocation of carbon credits. Even so, it is still important to know the current moves toward sub-national-based activities. However, mid- to long-term REDD plus trends are believed to lie behind discussions about how to deal with VCS (which has earned the trust of the voluntary markets) on a sub-national level.

#### 1.4.1 California’s action and Governors' Climate and Forests Task Force (GCF)

In September 2006, the California Global Warming Solution Act (known as AB32) was signed into law and a goal was set to reduce GHG emissions to 1990 levels by 2020. As a means to achieve the reduction target under AB32, the first draft of the intrastate cap-and-trade emissions trading scheme was released in November 2009. California’s emissions trading scheme will be the first in the world to trade REDD plus credits as expressly announced. Details of the use of REDD plus credits are now being discussed by the Governors' Climate and Forest Taskforce (GCF).

##### (1) Efforts in California

California is now developing the systems to achieve the goals of AB32. The California Air Resources

Board (CARB) is the lead agency for implementing AB32. In December 2008, CARB announced the strategy to achieve goals, “Climate Change Scoping Plan”. It showed a combined strategy for the cap-and-trade program and other approaches. CARB also announced “Proposed Regulation to Implement the California Cap-and-Trade Program” in December 2010. The regulation is expected to go into effect in January 2012. The forest sector (REDD) has been mentioned as the sector-based offset crediting mechanism. The rules of REDD in the regulation are shown below (Table 5).

Table 5 The rules of REDD in “Proposed Regulation to Implement the California Cap-and-Trade Program”<sup>33</sup>

Title	Contents
Framework and criteria for sub-national REDD plus programs	REDD plus plan (the drivers of deforestation, systems to be used for data collection and monitoring, timeframe for implementing, etc.) Baseline setting (Reference level, Crediting baseline) Nested accounting Retirement, etc.
The initiative working for development detail of the scheme	GCF (Governors' Climate and Forests Task Force)
Schedule of credit issue	It's considered that REDD plus offset credits from CARB-approved programs could enter the California market in 2015. (The credits issued from the pilot activities could be considered for approval earlier than 2015.)
Needs of REDD plus credit	The maximum amount of REDD plus credit that can be used in California is, 122 million t-CO <sub>2</sub> in the first period (2012-2014) 287 million t-CO <sub>2</sub> in the second period (2015-2017) 519 million t-CO <sub>2</sub> in the third period (2018-2020)

In the latest news, San Francisco Superior Court in California judge ruled that CARB failed to properly evaluate alternatives to the cap-and-trade program in March 2011, which would allow industries to purchase pollution allowance rather than cut their own GHG emissions. The court said that, on implementation of AB32, CARB violated the California Environmental Quality Act (CEQA). In May 2011, the court issued a writ that enjoins or stops all implementation and actions in furtherance of cap-and-trade until CARB completes a lawfully adequate CEQA review. As a result, it seems to be delay for the implementation of the cap-and-trade program one year behind.

## (2) Discussion about REDD credit in Governors' Climate and Forests Task Force (GCF)

GCF is a consortium of 14 states and provinces aimed at establishing a market for forest carbon offset credits from reducing emissions from REDD. It was founded by former California Governor Arnold Schwarzenegger in November 2008. The participants cover 21% of tropical forest in the world. In 2009, GCF started discussion to construct the market of REDD credit issued from the sub-national programs. GCF sets the target that REDD credit will be issued in 2015.

The discussion draft “GCF Design Recommendations for Sub-national REDD Framework”, published in September 2010, shows key issues to issue compliance-grade REDD credits and design

<sup>33</sup> CARB Web Site (<http://www.arb.ca.gov/cc/capandtrade/capandtrade.htm>)

recommendations by GCF (Table 6).

Table 6 Key issues to issue compliance-grade REDD credits and design recommendations by GCF<sup>34</sup>

Category	Issues	GCF Design Recommendations
Sectoral Crediting Pathways		<p>Preserving multiple pathways to compliance</p> <ul style="list-style-type: none"> <li>•Sector-based Crediting: make agreement between California and the host province, then recognize credits issued by a Board approved program.</li> <li>•Direct Crediting: There is some flexibility in the crediting, either directly to a state / province or directly to a project-level activity.</li> </ul>
State/Province-Level Accounting	Reference Level Baselines	<p>Using</p> <ul style="list-style-type: none"> <li>•average historical annual deforestation rates based on remote sensing data for 5-10 years</li> <li>•carbon emission factors for relevant forest classes based on the IPCC tiers 2 or 3</li> <li>•adjustment factor that addresses high forest stock/ low historic deforestation scenarios</li> </ul>
	GHG Inventory /Tracking and Registry Infrastructure	Necessary contents are Ability to track issuance, ownership, and retirement information, Assignment of individual serial numbers, Public accessibility, Capability to transfer information, Links to national-level registry, Third-party certification, Links to all project and MRV information.
	Project Nesting and Reconciliation Architectures	(Under discussion)
Monitoring, Reporting, Verification of Performance	MRV of State/Province Performance	(Under discussion) Necessary contents (tentative) are Activity data by both remote sensing and field measurements, Emission factors in IPCC guideline, Consistency of MRV approach with IPCC guidelines, MRV for social and environmental safeguards and benefit flows, Verification of MRV by accredited third parties, Public availability and transparency of MRV data, Mechanism for accounting for leakage, Quantification of uncertainty.
	MRV of Nested Project Performance	Additional nested project MRV requirements should include, Specific provisions regarding accounting for leakage at sub-national level , Specific provisions stating that project will satisfy additionality.
Safeguards	Environmental Safeguards	<p>REDD plus activities must be designed and implemented to maintain and restore native forest species and ecosystems.</p> <p>REDD plus credits must not be issued for activities that result in the conversion of natural forests or other ecosystems.</p> <p>Increases in forest carbon stocks associated with certain defined forestry activities cannot be used. (The definition is under discussion)</p>
	Protection of Rights/Interests	Necessary contents for stakeholders (local communities, indigenous peoples, and vulnerable social groups) are, Identification of stakeholders, No involuntary relocation, Establishment of public and transparent grievance documentation and resolution process, Prohibition of uninvited encroachment on private property, community property, customary rights, Procedures to ensure that stakeholders have access to adequate information and legal advice.
	Benefit Sharing	REDD plus activities must include procedures to ensure that specific benefit distribution mechanism or programs are objective, transparent, accountable, auditable, etc.
Enforceability, Liability, and Risk Management		Necessary contents are, Buffer reserves/ performance reserve account, Residual liability rules, Insurance (such as World Bank, which offers risk assistance and insurance products for project investors), Others (mitigation payments, establishment of a global fund mechanism, etc.).
Early Action /Phased-Approach Pathways		(Under discussion)

<sup>34</sup> GCF 2011. GCF Design Recommendations for Subnational REDD Frameworks (Draft). Available at GCF Web Site of ([http://www.gcftaskforce.org/documents/REVISED\\_DRAFT\\_Task%201\\_Subnational\\_REDD\\_Frameworks\\_Report.pdf](http://www.gcftaskforce.org/documents/REVISED_DRAFT_Task%201_Subnational_REDD_Frameworks_Report.pdf))



#### 1.4.2 State of the progress of the Jurisdictional and Nested REDD Initiative (VCS)

The Jurisdictional and Nested REDD Initiative was launched in December 2010 with the objective of developing guidance and guidelines for the integrated accounting to develop avoided deforestation projects into national-/sub-national-based projects. The initiative aims to develop guidance for how to set regional baselines that help streamline processes and lower costs while ensuring the consistency and environmental integrity of the project.

In February 2011, the Advisory Committee on Jurisdictional and Nested REDD was organized for the purpose of making proposals on strategies to the initiative, reviewing what was discussed and offering advice, etc. In the first meeting of the Advisory Committee, held in April 2011, the technical issues to be tackled by the initiative were identified, and technical experts were selected. The second meeting is scheduled within the year. The roles of the group of technical experts, which are to be determined in the first meeting, will be to develop regional baselines, coordinate among stakeholders, and address various issues, such as MRV, leakage, risk management, and evaluation, etc.

## 2. Current state of carbon markets and the handling of forest credits in Japan and abroad

### 2.1 Status of carbon markets and their overview, including market size

Various schemes and activities have been promoted for the crediting of GHG emissions reduction and forest carbon sinks, both in Japan and abroad. Among them, relatively large-scale schemes and those that allow the crediting of forest carbon sinks are summarized below (Table 7). Please refer to the Appendix for the details of each scheme.

Table 7 Status of voluntary and compliance markets and forestry credits

		Voluntary market	Compliance market
Japan	National level	<u>Offset Credit (J-VER)</u> Domestic Credit Japan's Voluntary Emissions Trading Scheme (J-VETS)	-
	Regional level	<u>Niigata Prefecture Offset Credit</u> <u>Kochi Prefecture Offset Credit</u>	Tokyo Emissions Trading Scheme <u>Saitama Prefecture Target-setting Emissions Trading Program*</u>
U.S.	National level	-	U.S.*
	Regional level	<u>Chicago Climate Exchange (CCX)</u>	<u>Regional Greenhouse Gas Initiative (RGGI) Scheme by the State of California*</u>
Others		-	<u>EU Emissions Trading System (EU-ETS), New Zealand Emissions Trading Scheme (NZ-ETS), Australia*, Canada*, ROK*</u>

    : Allowing the use of credits from forest carbon stock   \*: Yet to be established or under consideration

The size of the global carbon markets was approximately 141.9 billion USD in 2010. The carbon markets that continued growing since 2005 marked their first decline from the previous year (2009: approx. 143.7 billion USD) due to uncertainty about the regulatory framework for 2013 and after.

Approximately 84% of the world's total in value is traded within the EU Emissions Trading System (EU-ETS), which is the engine for global carbon markets.

Table 8 Values of global carbon markets<sup>35</sup>

		2006	2007	2008	2009	2010
Project base	Primary CDM	5,804	7,426	6,511	2,678	1,500
	JI	141	499	367	354	1,200
	Voluntary	146	265	419	338	
Secondary CDM			5,451	26,277	17,543	18,300
Allowance markets	EU-ETS	24,436	50,097	100,526	118,474	1,100
	NS Wales	225	224	183	117	
	CCX	38	72	309	50	
	RGGI	-	-	198	2,179	
	AAUs	-	-	276	2,003	
Total		31,235	64,035	135,066	143,736	141,900

(Unit: Million USD) (2006-2010)

## 2.2 Japanese Trend

The number of domestic carbon offset projects reached about 1,000 (accumulated) as of the end of December 2010 (Figure 16). Among J-VER credits traded in the market, emissions reduction credits are generally traded in the price range of the sales prices of certified emissions reduction (CER) credits from the clean development mechanism (CDM) and the prices of the Tradable Green Certificates (converted into CO<sub>2</sub>), while forestry credits are priced higher (Figure17).

There are many ways for private-sector enterprises, etc., to participate in carbon offsetting or related activities, such as purchasing carbon credits as part of CSR, offsetting the emissions from the manufacturing of its products by increasing prices, generating carbon credits by implementing an emissions reduction project or afforestation, or intermediating credit trading, etc. Some of these enterprises that attach particular importance to contribution to forest conservation purchase forest credits by choice or implement afforestation projects abroad.

<sup>35</sup> World Bank 2011. State and Trends of the Carbon Market 2011. Available at World Bank Web Site of ([http://siteresources.worldbank.org/INTCARBONFINANCE/Resources/StateAndTrend\\_LowRes.pdf](http://siteresources.worldbank.org/INTCARBONFINANCE/Resources/StateAndTrend_LowRes.pdf))

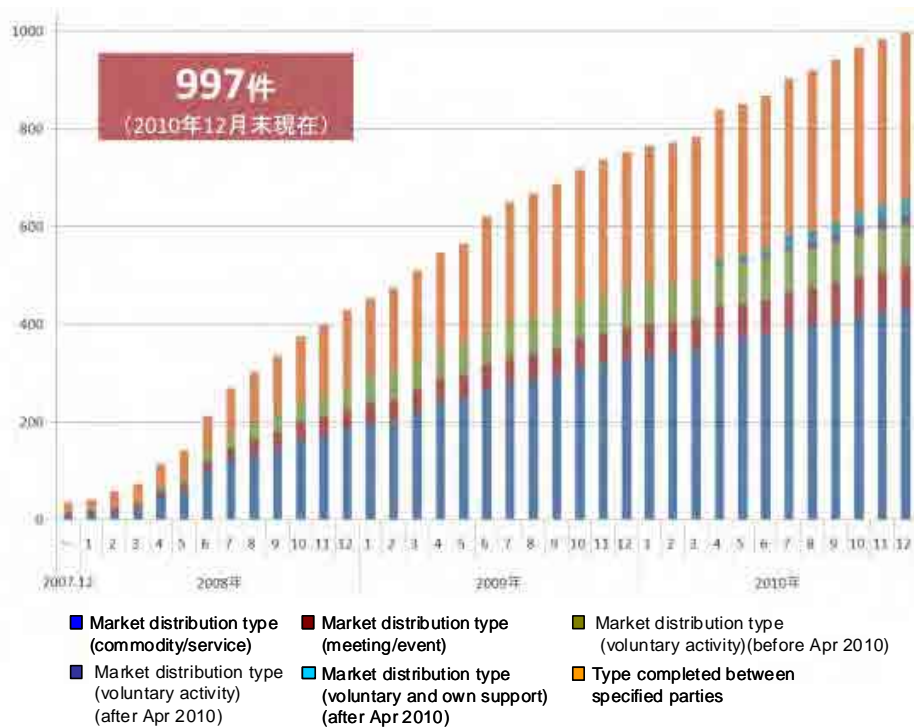


Figure 16 Domestic carbon offset projects <sup>36</sup>

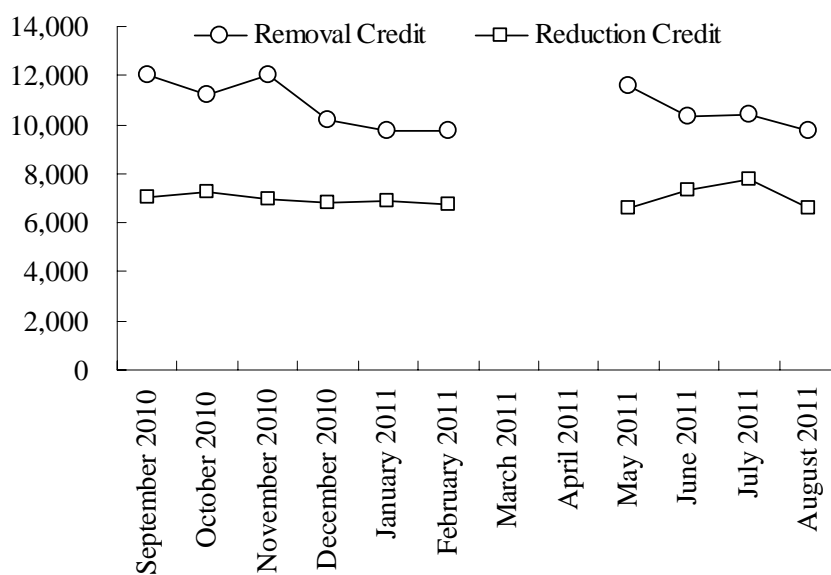


Figure 17 J-VER price trend (per ton of CO<sub>2</sub>) (Unit: yen) <sup>37</sup>

With regards to the system for trading credits in voluntary markets on a national level, in 2008 the

<sup>36</sup> Ministry of the Environment 2011 “White Paper on Carbon Offset 2011”. Available on Web Site ([http://www.env.go.jp/press/file\\_view.php?serial=17370&hou\\_id=13709](http://www.env.go.jp/press/file_view.php?serial=17370&hou_id=13709))

<sup>37</sup> Japan Carbon Offset Forum 2011. Available on Web Site (<http://www.j-cof.org/jver/markettrend.html>)

Ministry of Economy, Trade and Industry instituted a domestic credit scheme while the Ministry of the Environment also instituted an offset credit scheme (J-VER). These schemes issue credits whose credibility is ensured through national frameworks. In the J-VER scheme, projects receive certification if they are expected to lead to CO<sub>2</sub> sinks through reforestation or forest management projects, with credits from forest sinks then being issued. Furthermore, the aim is to roll this scheme out across the whole country, so prefectural and city government schemes for certifying and issuing credits are recognized as “City or Prefectural J-VER programs” when they are consistent with the J-VER scheme. As of September 2011, projects in Niigata Prefecture and Kochi Prefecture have been approved and credits mainly related to forest sinks issued.

In compliance markets, regional governments in Tokyo and Saitama Prefecture have already been implementing emissions trading schemes (cap and trade) ahead of the construction of country-level schemes. The Saitama Prefecture scheme recognizes the trading of credits from forest sinks. However, the various schemes within Japan were built for the purposes of contributing to a decrease of emissions/increase of sinks within Japan and as such do not allow the use of overseas credits.

As for national-level emissions trading schemes, trial emissions trading schemes based on voluntary corporate participation were introduced in 2008. One such voluntary scheme is the Voluntary Emissions Trading Scheme (J-VETS) implemented by the Ministry of the Environment. However, the use of credits from forest sinks is not allowed.

As for the national-level, emissions trading schemes with the voluntary participation of private-sector enterprises have been carried out on a trial basis since 2008. Japan's Voluntary Emissions Trading Scheme (J-VETS) is one form of participation administrated by the Ministry of the Environment. However, the use of credits from forest sinks is not allowed.

## 2.3 Characteristics of the schemes

### 2.3.1 Handling of forest carbon stock

In overseas markets, the Chicago Climate Exchange (CCX), a voluntary market, was the first in the world to establish a system for carbon offsetting using forest carbon stock, under which carbon credits from forest carbon stock were actually traded. In recent years, a growing number of emissions trading schemes (compliance markets) deal with the trading of forest carbon stock, such as those in New Zealand and California, U.S. In Australia and the ROK, etc., where the establishment of an emissions trading scheme is being considered, the planned schemes do not allow the inclusion of forest carbon stock in many cases because they are designed mainly to reduce emissions from designated business facilities. However, many of these schemes are planned to set additional standards if higher reduction targets were set during the implementation stage, which provide the possibility for carbon credits from forest carbon stock to be traded.

Carbon markets in Japan tend to regard forestry credits favorably based on the recognition that carbon credits from forest carbon stock directly lead to the improvement of forest management and the promotion of a forest's function to serve public interests. As a result, the credits from forest management projects under the Offset Credit (J-VER) Scheme tend to be purchased at higher prices than emissions

reduction credits. The emissions trading program (compliance market) to be implemented by Saitama Prefecture from FY2012 will allow the trading of credits from domestic forest carbon stock, providing the possibility that the trading volume of forestry credits may increase.

### 2.3.2 Ensuring the credibility and transparency of forestry credits

In each system for trading forestry credits, a subcommittee or taskforce for the verification of forest projects is established under the operating entity to develop methodology and conduct an external audit of forest projects (e.g., the CCX and RGGI).

In some cases, measures are taken to ensure the reliability of verification, such as requiring the third-party body to conduct a verification of forestry projects, in order to obtain international accreditation, such as ISO 14065 (e.g., the J-VER Scheme).

## Chapter 4 Moves of Private Enterprises, etc., Involved in REDD Plus Implementation

In order to design a system for forest credits such as REDD plus under the framework of the bilateral offset credit mechanism and operate the system while inviting investment from private-sector enterprises, it is necessary not only to evaluate technical feasibility but also properly assess the needs of the users side of the system by identifying and analyzing operational issues such as the associated costs and the effects of the project (benefits for private-sector enterprises).

In Japan, a large number of private-sector enterprises and NGOs have already launched forest conservation projects in developing countries. Also, activities using the offset credit system (J-VER), which is an experimental system for domestic emissions trading, or other domestic credit systems have been promoted steadily. Knowledge and experiences gained under these circumstances are believed to build basic information which is extremely important for designing a new system.

In this chapter, information on carbon offset and related activities being carrying out by Japanese and foreign private-sector enterprises, NGOs and local governments is collected, and major results and problems as well as lessons learned for designing a system for forest credits in bilateral assistance are summarized. When gathering and reviewing information, in order to clearly define the role that each party plays in the scheme, parties involved are divided into scheme players and scheme owners, and the scheme players are further divided into credit generators, credit buyers and credit intermediary (Figure18).

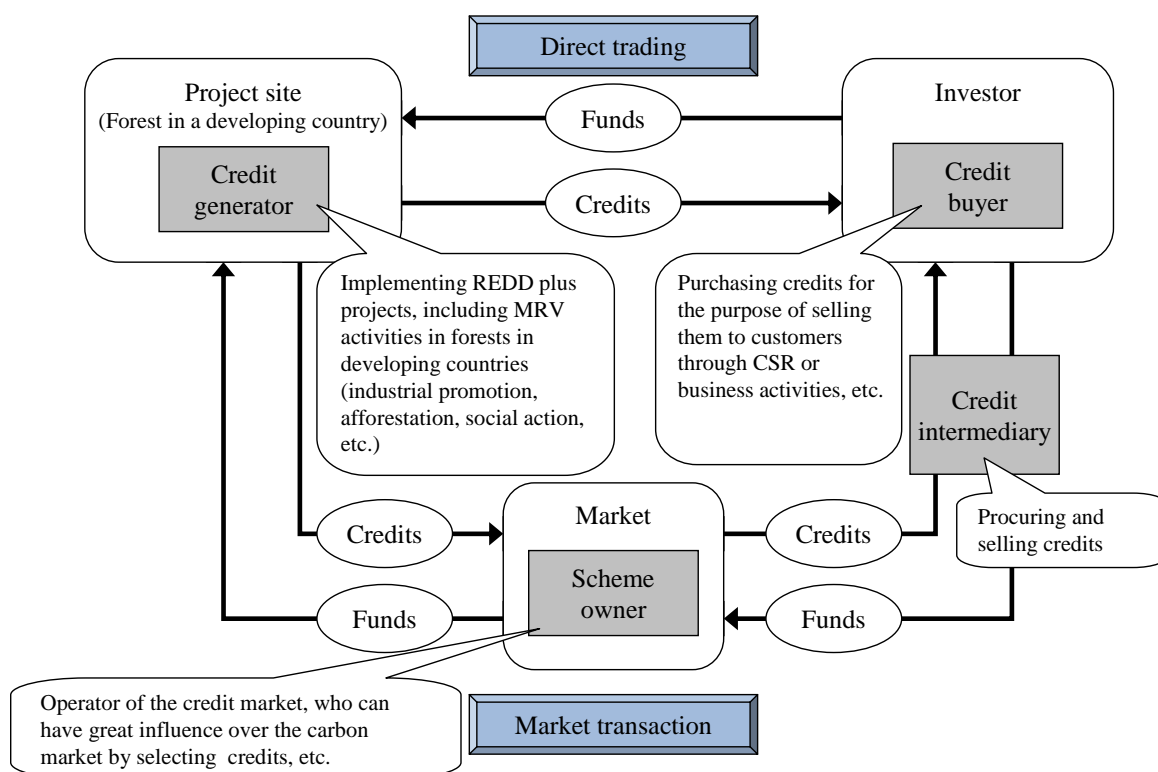


Figure18 Players on the carbon market

## 1. Activities of private-sector enterprises, NGOs, and local governments

### 1.1 Research methods

Literature research and interviews were conducted with the private-sector enterprises, NGOs, and a local government, listed below, that are carrying out carbon offset or related activities. The targets of the research were selected from organizations that have the experience of being involved in forest conservation projects in developing countries including REDD plus or that are planning to participate in such projects.

Table 9 Interviewed private-sector enterprises and other market players

Entity	Major activities
Company A (pulp and paper manufacturing) (generator)	<ul style="list-style-type: none"> <li>• Conducting a feasibility study of REDD plus in Southeast Asia</li> <li>• Carrying out industrial afforestation, voluntary afforestation by local residents (farmer afforestation), social contribution activities, etc., for the purpose of reducing the deforestation and degradation of the forests subject to its own concession and the forests in the surrounding areas</li> </ul>
Company B (construction) (generator)	<ul style="list-style-type: none"> <li>• Implementing an afforestation-based carbon offset program (absorbing CO<sub>2</sub> emissions from each stage of logging, carrying out, lumbering, conveyance, and the construction of main structural materials) in Southeast Asia.</li> </ul>
Company C (retailing) (generator)	<ul style="list-style-type: none"> <li>• Implementing a REDD plus project in Southeast Asia; providing funding to the cooperating international organization that established the forest guard and conducting tree planting and environmental education in cooperation with the government of the host country and local NGOs</li> </ul>
Organization D (NGO) (generator)	<ul style="list-style-type: none"> <li>• Implementing pilot projects for REDD plus in Southeast Asia by incorporating the elements of REDD plus into the existing forest conservation projects; establishment of a MRV system now under consideration</li> <li>• Applying for the certification system expecting that certification will create additional value; however, under the present circumstances where the Japanese market has not yet matured, the certification system cannot be fully utilized.</li> </ul>
Organization E (forest conservation organization) (generator and provider)	<ul style="list-style-type: none"> <li>• Implementing forest conservation projects (reforestation and agroforestry) in Southeast Asia in cooperation with NGOs</li> </ul>
Company F (financing) (provider)	<ul style="list-style-type: none"> <li>• Undertaking to procure and manage credits from many mitigation projects, dealing with CER, J-VER, domestic credits, etc.</li> </ul>
Company G (service industry) (provider)	<ul style="list-style-type: none"> <li>• Undertaking to procure and manage credits from many mitigation projects, dealing with CER, Assigned Amount Unit (AAU), Verified Carbon Unit (VCU), J-VER, domestic credits, etc.</li> <li>• Also engaging in project development, though not implementing REDD plus projects because the company is not capable enough to take responsibility for operation, management, and monitoring</li> </ul>
Company H (transportation) (buyer)	<ul style="list-style-type: none"> <li>• Implementing a program in which passengers offset carbon emissions generated during when they used the service at their option; the credits are issued under the J-VER scheme, and carbon offset charges are borne by the passengers.</li> </ul>
Company I (manufacturing) (buyer)	<ul style="list-style-type: none"> <li>• Carrying out an activity to offset the entire amount of carbon emissions from the manufacturing, shipment, and disposal of some products with UN Certified Emission Reduction (CER) credits, etc.</li> <li>• At present, the costs of carbon offset are not added to the prices of the product.</li> </ul>



Table 10 Interviewed owner of a credit scheme

Entity	Outline of activities
Saitama Prefecture	<ul style="list-style-type: none"> <li>Starting from FY2011, GHG emissions reduction obligation is imposed on large-scale facilities and, as a means to fulfill this obligation, emissions trading is planned to be introduced (FY2012 or after).</li> <li>Institutional design has almost been completed. The trading of forest credits is allowed, and a system is introduced to count credits from operations within the prefecture 1.5 times, as part of measures to facilitate activities within the prefecture.</li> </ul>

Based on the results of interviews with each player within the carbon market, the current state of forest conservation projects carried out by private-sector enterprises, etc., in developing countries is reviewed. Then, the challenges in implementing REDD plus activities are analyzed, and the types of support expected from the Japanese government or JICA in overcoming these challenges are considered (Figure 19).

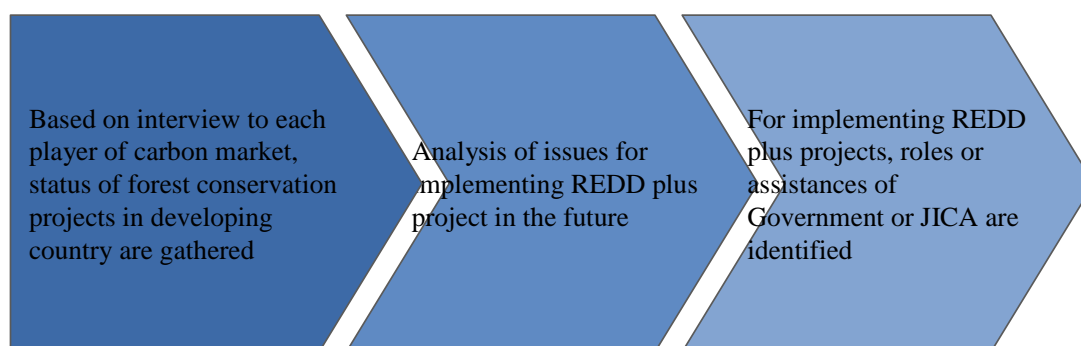


Figure 19 Research flow chart

## 1.2 Activities of private-sector enterprises, etc., generating carbon credits

### 1.2.1 Current state and future prospects

- The interviewed private-sector enterprises and NGOs are implementing projects by making use of existing forest conservation projects or working with experienced partners.
- All of the private-sector enterprises expressed concern over the uncertain prospects over REDD plus both in Japan and abroad (whether a compliance market will be established in the future, whether afforestation activities will be considered as REDD plus activities, etc.) and maintained a cautious stance in making additional investment. The private-sector enterprise that has already started a feasibility study was also cautious about full-scale entry into this business for reasons of the profitability of the project.

### 1.2.2 Main motive for the project

- The main motive of private-sector enterprises for implementing REDD plus-related projects is to make prior investments in the anticipation of the creation of a compliance market in the future.

### 1.3 Activities of private-sector enterprises trading in carbon credits (buyer or intermediary)

#### 1.3.1 Current state and future prospects

- Private-sector enterprises tend to be a little less active in credit trading than they were at one time. The reasons they pointed out for this are: 1) the high price of credits (particularly J-VER) and 2) the insufficient understanding of carbon offsetting among general consumers and private-sector enterprises.
- On the other hand, those private-sector enterprises in which carbon offset activities are easily recognized in connection with their products and those whose customers are environmentally conscious are relatively active and expressed their willingness to continue their efforts.
- The interviewed enterprises purchase credits on a small scale and therefore whether they will succeed or not in credit transactions does not significantly affect their business foundation. Some enterprises are unique in their bottom-up, not top-down, structure in promoting in-house explanation and consensus-building.

#### 1.3.2 Main motive for credit transaction

- The main motive of private-sector enterprises for purchasing credits is to fulfill corporate social responsibility (CSR) for environmental load.

#### 1.3.3 Characteristics of forest carbon credits

- More than one private-sector enterprise deals with forest carbon credits because, as they pointed out, these credits are expected to be cost effective and they better explain the concept of carbon offset to consumers.
- When choosing forest credits generated in Japan or those generated abroad, both the private-sector enterprises and the local government make a decision mainly based on the easiness in conveying the idea of carbon offsets (making a story) (e.g., the local government purchases credits generated within the region from the perspective of making regional contribution, etc.).

#### 1.3.4 Credibility of carbon credits

- All of the interviewed private-sector enterprises attach importance to the credibility of carbon credits from the perspective of facilitating in-house explanation and making steady social contribution, and they try to ensure credibility by dealing with the credits issued under J-VER- or UN-certified credits. The local government as a scheme owner also expressed the view that the use of standards such as those under J-VER is effective in ensuring credibility.
- None of them questioned the credibility of the J-VER- or UN-certified credits.

## 2. Degree of interest by private-sector enterprises in forest conservation projects and the challenges expected in implementing the projects

### 2.1 Degree of interest in forest conservation projects, such as REDD plus, and forest carbon credits

#### 2.1.1 Private-sector enterprises generating carbon credits

- With regard to REDD plus, the profitability of credits was questioned in that: 1) at present it is unclear how the credits will be handled, and that 2) the projects entail great risk (in terms of costs and investment recovery period, etc.). Private-sector enterprises that have a good knowledge of forest conservation projects in developing countries tend to be more cautious about participating in these projects.
- There was an opinion that it is difficult for a private-sector enterprise to carry out a REDD plus project with the income from credits alone and the project cannot be sustained without the income from afforestation, etc.

#### 2.1.2 Private-sector enterprises, etc. trading in carbon credits (buyer or intermediary)

- Many private-sector enterprises that have already been involved in carbon offset activities expressed interest in forest credits generated in developing countries from the perspective of cost-effectiveness. Although many enterprises are cautious about dealing with these credits at present due to the uncertainty in the handling of forest carbon credits, they are likely to take a positive stance if only a proper environment is established.
- Credit intermediaries also pointed out that forest carbon credits are viewed more favorably than other credits and that price reduction is indispensable in promoting the trading of carbon credits.
- Some private-sector enterprises give weight to easiness in making a story when dealing with carbon credits. They stated that in order to expand activities, it is important to explain the importance of forest conservation in developing countries to consumers and win their understanding.
- The local government as a scheme owner established a system for promoting forest conservation projects and increasing sinks within the region, and at present, they have no plan to introduce credits generated abroad. In addition, from the perspective of facilitating emissions reduction within the region, the reduction targets are set at such levels that would not require the purchase of additional credits from abroad. Thus, the scheme introduced by the local government created an environment that does not encourage the use of forest carbon credits generated in developing countries.

## 2.2 Expected challenges

### 2.2.1 Credit generators

The players who are expected to generate credits by REDD plus may face the following challenges when implementing forest conservation projects including REDD plus in developing countries (Table 11).

Table 11 Challenges that may face credit generators when implementing forest conservation projects including REDD plus in developing countries

Challenge	Description
Reduction of project costs	<ul style="list-style-type: none"> <li>• Forest conservation projects in developing countries require large costs for capacity building, validation, and verification, etc. If these costs push up the credit price, it would be disadvantageous to these projects compared to other projects.</li> </ul>
Clarification of land ownership	<ul style="list-style-type: none"> <li>• It is difficult to handle cases where illegal occupants have already settled within the project site.</li> <li>• Problems concerning land ownership are not unique to REDD plus activities but also occur in existing forest conservation projects. It would be better to take this issue into consideration as a given condition. It is difficult to take any action because it could be interpreted as interference in internal affairs.</li> </ul>
Establishment of a governance structure	<ul style="list-style-type: none"> <li>• In order to establish a governance structure for the community, it is necessary to figure out ways to give incentives to participation (e.g., promoting alternative industry and creating income opportunities for local residents by contracting monitoring to them).</li> <li>• It is necessary to consider REDD plus to be a means for regional development.</li> </ul>
Ensuring transparency in profit-sharing	<ul style="list-style-type: none"> <li>• It is difficult for a private-sector entity to build a project from scratch. Finding a reliable counterpart is indispensable.</li> <li>• If funds were provided via the regional government, communities would not receive enough money. Some efforts are necessary to avoid such a situation and to enhance transparency, such as providing funds via reliable NGOs, etc.</li> </ul>
Reduction of leakage	<ul style="list-style-type: none"> <li>• If a private-sector entity implements a project on its own, the scale of the project inevitably tends to be small, and consequently, leakage may increase. It is necessary to establish a mechanism enabling large-scale investment, such as setting up a fund.</li> </ul>
Enhancement of public recognition of the activities	<ul style="list-style-type: none"> <li>• In order to encourage private-sector enterprises to participate in REDD plus activities, it is necessary to enhance public recognition of REDD plus itself.</li> </ul>

### 2.2.2 Credit intermediary

The players who are expected to intermediate the trading of credits generated by REDD plus may face the following challenges when implementing forest conservation projects including REDD plus in developing countries (Table 12).

Table 12 Challenges that may face credit intermediaries when implementing forest conservation projects including REDD plus in developing countries

Challenge	Description
Provision of incentives to purchase	<ul style="list-style-type: none"> <li>When promoting the trading of forest carbon credits from developing countries, it is necessary to differentiate them from other credits, such as J-VER and CER credits, by, for example, focusing on their contribution to biodiversity conservation.</li> <li>In order to promote the trading of credits in voluntary markets, it is necessary to differentiate them by adding extra value, such as a Climate, Community and Biodiversity Project Design Standards (CCB Standards),<sup>38</sup> to attract private-sector enterprises</li> </ul>
Enhancement of public recognition of the activities	<ul style="list-style-type: none"> <li>One of the reasons for the low recognition of carbon offsetting is that the promotion activities do not expand beyond the persons in charge at enterprises and because general consumers have not received sufficient explanations.</li> </ul>

### 2.2.3 Credit buyers

The players who are expected to purchase credits generated by REDD plus may face the following challenges when implementing forest conservation projects including REDD plus in developing countries (Table13).

Table13 Challenges that may face credit buyers when implementing forest conservation projects including REDD plus in developing countries

Challenge	Description
Reduction of credit prices	<ul style="list-style-type: none"> <li>The high prices of J-VER and other credits act as an obstacle to the expansion of carbon offsetting activities. The improvement of cost-effectiveness (the reduction of credit prices) is important for the promotion and expansion of offsetting activities.</li> </ul>
Ensuring the credibility of credits	<ul style="list-style-type: none"> <li>The credibility of carbon credits needs to be ensured (certified by the national government or international organizations) not only for smooth in-house explanation but also given the nature of social contribution activities.</li> </ul>
Enhancement of public recognition of the activities	<ul style="list-style-type: none"> <li>Carbon offsetting is a virtual activity and has not been fully understood by general consumers. In addition, regarding J-VER-related activities, theory precedes the spread of the scheme. Market communication is not entirely successful.</li> <li>In order to promote the use of REDD plus credits, it is necessary to raise the public recognition of REDD plus.</li> <li>When a private-sector enterprise launches carbon offsetting activities, information collected for in-house explanations plays an important role. For enterprises doing international business, for example, it is desirable that such information is written in English.</li> </ul>

## 2.3 Expectation to Japan or JICA

### 2.3.1 Establishment of standards and guidelines

From the viewpoint of enhancing the reliability of REDD plus as a social contribution activity, the establishment of standards for assessing the value of benefits other than carbon emission reduction in REDD plus activities or guidelines for selecting appropriate targets (countries) is requested.

### 2.3.2 Support for the establishment of local arrangement

#### (1) Development of project participation strategies (for phase 1 assistance)

- It is extremely difficult for a private-sector enterprise to carry out a REDD plus project on its own. The government (JICA), private-sector enterprises, and NGOs need to work together in participating in the project while making use of their know-how in their respective fields of expertise. When doing so, if JICA assumes the role of developing the overall scheme for the implementation of the project and providing an appropriate environment for private-sector enterprises to concentrate on their respective activities, it would be easier for private-enterprises to participate.

#### (2) Collection of related data (for phase 2 or 3 assistances)

- In REDD plus activities, a large amount of local data is necessary for the calculation of emissions and removals, the establishment of reference levels, and the planning of measures against leakage. However, REDD plus activities usually cover a large area, and therefore, collecting data is substantially high in cost. JICA is requested to conduct and support the collection of data necessary for the development of methodologies on a continuous basis.

#### (3) Support for the establishment of a local governance structure (for phase 1 assistance)

- From the viewpoint of encouraging the participation of private-sector entities, the establishment of a foundation for REDD plus implementation (governance, etc.) is expected, including the coordination of land ownership in the communities (including negotiation with the regional government) and the provision of funds and technologies to the local government and municipalities.
- Considering that the main factor of deforestation is the expansion of farmland, REDD plus needs to be tackled not only from the perspective of forests and forestry but also from agriculture and rural development, so as not to deprive local farmers of their livelihood. To this end, it is necessary to implement REDD plus along with farmland development, making use of JICA's accumulated know-how and experience in rural development.

#### (4) Continuous monitoring (for phase 2 or 3 assistances)

- After JICA hands over the project to a private-sector entity, it should not completely withdraw from the project but should ensure the reliability of the project by monitoring progress (including consideration to biodiversity) as a local counterpart, or it should support NGOs and contract monitoring activities to them.

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<sup>38</sup> CCB Standards Web Site (<http://www.climate-standards.org/>)

### 2.3.3 Strengthening of cooperation between support organizations

- In the cases where more than one support organization is involved in a specific project site, if each organization carries out the project with different intentions, the site would be exhausted. They should share the goal and direction that they should take.

### 3. Challenges in designing a forest carbon credit system, including REDD plus

The results of the research on private-sector enterprises, etc., conducted in this section show that many private-sector enterprises are interested in forest carbon credit systems, including REDD plus, indicating that such systems have the potential to attract private investment.

However, they are cautious about full-scale entry into this business due to various obstacles, such as: the vast scope of the project ranging from the coordination of land ownership to the establishment of governance structures, uncertainty about the framework of REDD plus (generation of carbon credits), and the costs of MRV and validation, etc., showing that a favorable environment for private investment has not been established.

Based on these findings, the following measures are needed to attract private investment in forest carbon credit systems, such as REDD plus, etc.

- Develop a project implementation strategy (project implementation structure) under which private-sector enterprises can demonstrate their advantages by flexibly cooperating with administrative bodies, including JICA and NGOs, without assuming responsibility for all of the wide-ranging elements of a REDD plus project.
- Create a place for bringing together: the knowledge, technology, and experience of private-sector enterprises and NGOs, the research results of domestic research institutes, and the information on the host country and activities of aid agencies and for discussing and coordinating various issues for the development of a project implementation strategy (project implementation structure).