Chapter 5 Results of Field Research

1. Study Points of Field Research

Table 14 below shows the items proposed for the field research in light of the domestic and international situation concerning REDD plus. The study team will deal with these research items flexibly fully considering the latest situation at the research site.

Table 14 Study points in field research

Challenge	Challenge in details
Forestry strategies and related information	・ Materials related to forest conservation programs in countries subject to field research (forest protection programs such as protected forests, productive forests, rangers)
Information on Government activities related to REDD plus	・ As a means to address technical challenges, for example, establishment of monitoring system and reference levels as well as the collection method of the data used are included in the research items. ・ The method of providing funds and details of implementation (including private funds) ・ The method of managing the funds for REDD plus and the transparency of fund allocation will be examined.
Information on JICA projects	・ Forest conservation projects by JICA (including the project plan and the progress status)
Information on the activities of other donors	・ REDD plus projects by other donor countries (including the project plan and the progress status) ・ Implementation structure of the project (including support from central and regional governments, involvement of intermediary consultants and cooperation of NGOs), state of relationship-building with local residents (including the method of providing incentives to the project) and measures to address major problems and challenges in implementing the project are included in the research items.
Miscellaneous	・ Advantages brought by the implementation of the project to foreign countries or enterprises

For the field research, a document concisely describing the important points was prepared for the briefing on this research project, so as to facilitate the sharing of recognition and the exchange of opinions. In the interview, the system, the way of thinking, and the intention, etc., of the target country were researched, based on which the roles that JICA should play in the process of implementing the project were considered. In the cases where other donors are implementing projects, the interview was conducted while researching whether the challenges facing the project that JICA is implementing are common to other projects or whether they a unique to the JICA project, also considering measures to address the challenges.

Then, the operability of the proposed approach to facilitate the participation of private-sector enterprises in cooperation with JICA projects was considered. In doing so, particular attention was paid to whether there is any inconsistency with the system, the ways of thinking, the intentions, etc., of the target country, or the needs of private companies and local municipalities, etc.

2. Researched organizations of the target countries of field research

The subjects of the field research were selected from: the government officials of the target countries of the research, the Japanese government officials including the staff of JICA, and other donor organizations (including NGOs), based on the materials published by each country, and were determined as follows (Table 15), taking into account the moves of private-sector enterprises grasped in the domestic research and after coordination with the local office of JICA.

Table 15 Researched organizations of the target countries of field research

Target country	Relevant organization (proposed subject of interview)
Cambodia	1. Local governmental or government-affiliated organizations: Forestry Administration (FA) 2. Japanese governmental or government-affiliated organizations: Local JICA office, Japanese Embassy 3. International NGOs: Wildlife Conservation Society (WCS)
Lao People's Democratic Republic	1. Local governmental or government-affiliated organizations: Department of Forestry (DOF), National Agriculture and Forestry Research Institute (NAFRI), Water Resources and Environment Administration (WREA) 2. Japanese governmental or government-affiliated organizations: JICA Forestry Sector Capacity Development Project (FSCAP) and Participatory Land and Forest Management for Reducing Deforestation (PAREDD) 3. Other donors: GTZ/CliPAD in Germany, RAMBOLL 4. International NGOs: WCS
Viet Nam	1. Local governmental or government-affiliated organizations: Ministry of Agriculture and Rural Development (MARD), Vietnam Forestry University 2. Japanese governmental or government-affiliated organizations: Local JICA office, Japanese Embassy, JICA SUSFORM-NOW） 3. Other donors: UN-REDD 4. International NGOs: Netherlands Development Organisation (SNV)、Fauna & Flora International (FFI)
Papua New Guinea	1. Local governmental or government-affiliated organizations: Papua New Guinea Forest Authority (PNGFA), Office of Climate Change and Development (OCCD), Papua New Guinea University Remote Sensing Centre 2. Japanese governmental or government-affiliated organizations: Local JICA office 3. Other donors: UN-REDD, AusAID 4. International NGOs: WCS, Eco Forestry Forum (EFF)
Republic of Peru	1. Local governmental or government-affiliated organizations: MINAM (Ministry of Environment), MINAG (Ministry of Agriculture), FONAM 2. Japanese governmental or government-affiliated organizations: Local JICA office, Japanese Embassy 3. Financial institutions: IDB Peru office (BID), World Bank 4. International NGO: World Wide Fund for Nature (WWF)、Conservation International Peru (CIP), Asociacion Interetnica de Desarrollo de la Selva Peruana (AIDESEP)

3. Results of the field research (Cambodia)

3.1 State of forests

In Cambodia, the forest area that occupied 73% of the total land area in 1969 decreased to 58% in 1997 and has been decreasing at a high rate in recent years. From 2005 to 2010, the forest area decreased by approximately 1%, or by an average of 120,000 hectares a year. The forest decrease is directly caused by, conversion to agricultural land, forest fires, rampant illegal logging etc., and is also remotely caused by poor administrative management capacity, poverty in provincial areas, and increases in population, etc.

The statistics of the FAO also show that the forest area in Cambodia has been on the decrease since 1990 (Table 16), marking the highest decrease rate among Southeast Asian countries. In particular, the area of natural forest declined to less than 50%. Therefore, reducing deforestation and degradation is an important issue in Cambodia.

Table 16 General information of Cambodia's forest[39]

Indicators	1990	2000	2005	2010
Land area[40] (1,000ha)	-	-	-	18,104
Forest area (1,000ha)	12,944	11,546	10,731	10,094
Deforestation area (1,000ha/yr) (): Mean deforestation ratio		140 (1.14)	163 (1.45)	127 (1.22)
Primary Forest (1,000ha)	766	456	322	322
Other naturally regenerated forest (1,000ha)				9,703
Planted Forest (1,000ha)	67	79	74	69
Carbon stock in living forest biomass (Mt)	609	537	495	464

Cambodia has one of the highest levels of forest cover in Southeast Asia, with approximately 10.7 million hectares of forest in 2006 or 59% of Cambodia's land area[41]. Based on the FAO 2005 Forest Resources Assessment, Cambodia has the 30th largest area of tropical forest in the world, but is the 13th most forested country by percentage of land area[42]. Cambodia also has a relatively high rate of land-use change with Forestry Administration statistics showing that 379,485 hectares of forest were lost between 2002 and 2005/6[43], a deforestation rate of 0.8% per year. As a consequence Cambodia has been classified as a high forest cover, high deforestation' country for the purposes of REDD[44].

Deforestation in Cambodia is caused by the rapid pace of development in the country, including large-scale agro-industrial development, and a lack of effective implementation of existing laws and

39 FAO 2010. Global Forest Resources Assessment 2010. avairable at web site of (http://www.fao.org/forestry/fra/fra2010/en/)

40 Including Inland Water

41 Forestry Administration, 2007. Forest Cover Changes in Cambodia, 2002-2006. Paper prepared for the Cambodia Development Cooperation Forum. Forestry Administration, Phnom Penh

42 FAO 2005 Forest Resources Assessment. FAO, Rome

43 Forestry Administration, 2007. Forest Cover Changes in Cambodia, 2002-2006. Paper prepared for the Cambodia Development Cooperation Forum. Forestry Administration, Phnom Penh

44 Griscom, B., Shoch, D., Stanley, B., Cortez, R. and Virgilio, N. 2009. Sensitivity of amounts and distribution of tropical forest carbon credits depending on baseline rules. Environmental Science and Policy 12: 897-911

policies for forest land and forest resource management. The principle forest management strategies of the Royal Government of Cambodia (RGC) are the new National Forest Programme (2010) for the Permanent Forest Estate regulated by the Forestry Administration, Protected Areas managed by the Ministry of Environment, and the flooded forests and mangroves that form part of the fisheries domain regulated by the Fisheries Administration. REDD plus could form a significant new source of finance for effective implementation of these forest management strategies, in a way that explicitly recognizes local livelihood and biodiversity conservation co-benefits. This would help Cambodia to achieve its national target of maintaining 60% forest cover, which is one of the main objectives of the RGC's Rectangular Strategy, which is the over-arching socioeconomic development policy agenda for the Fourth Legislature of the National Assembly (2008-2013) and is a key indicator for the Cambodia Millennium Development Goal 7.

3.2 Situation of REDD plus

The RGC rapidly started to implement pilot REDD plus projects following the Bali Conference of the Parties in 2007, with the approval of a first REDD plus pilot in the Oddar Meanchey community forests in May 2008, and the Seima Protected Forest REDD plus pilot in 2009. These pilot projects are amongst the most advanced in the Greater Mekong region. In developing these pilots the RGC has made maximizing transparent and equitable local benefit-sharing to communities an explicit policy priority under Council of Ministers Decision #699 that approved the first pilot.

Cambodia submitted its R-PIN to the World Bank Forest Carbon Partnership Facility (FCPF) in late 2008 and was accepted into the FCPF in early 2009. In August, Cambodia was invited to join the UN REDD Programme, and was granted observer status on the UN REDD Policy Board in October 2009. Following Cambodia's entrance to UN REDD, the UNDP Cambodia and FAO Cambodia Country Offices committed to support the Royal Government with a REDD Readiness planning process, which led to the development of the Cambodia REDD plus Roadmap (the Cambodia Readiness Plan Proposal on REDD plus).

The Cambodia REDD plus Roadmap was designed based on version 4 of the R-PP template. It was developed by the interim REDD plus Taskforce and stakeholder groups during the period January-September 2010. Following a two-month national consultation process on the Roadmap drafts, the third version was approved by stakeholders in late September 2010. Following international review by the World Resources Institute[45] and the UN REDD Policy Board, and based on the results of further national consultations, the Roadmap was updated in January 2010 (version 4.0). The Cambodia REDD plus Roadmap and the supporting Cambodia REDD plus Background document is available on request. The Roadmap structure is based on the R-PP template and covers the six main components of REDD plus Readiness:

- Section 1. Management of National REDD plus Readiness (Component 1a of the R-PP)
- Section 2. Consultation, stakeholder engagement and awareness-raising plan (Component 1b and 1c of the R-PP)
- Section 3. Development and selection of REDD strategies, including the Assessment of Land-use,

[45] World Resources Institute Web Site（http://www.wri.org/publication/getting-ready）

Forest Policy and Governance[46] (Components 2a and 2b of the R-PP)

- Section 4. Implementation framework (including benefit-sharing and safeguards) (Components 2c and 2d of the R-PP)
- Section 5. Development of the Reference Scenario against which performance will be measured (Reference Levels or Reference Emissions Levels, RLs/RELs) (Component 3 of the R-PP)
- Section 6. Development of the Monitoring System for national Monitoring, Reporting and Verification (MRV) (Component 4 of the R-PP)[47]

The Roadmap planning process was an important achievement for the Royal Government, as it has set a new standard for inter-ministerial cooperation and effective consultation and engagement with local stakeholders. This achievement was due to strong national leadership by the Forestry Administration of the Ministry of Agriculture, Forestry and Fisheries, and the General Department of Administration for Nature Conservation and Protection of the Ministry of Environment.

The Roadmap was used as the basis of a funding request to the UN REDD Global Programme for $3.0 million, which was approved by the UN REDD Policy Board on November 5, 2010. In addition, UNDP, FAO, JICA and the Government of Japan have committed funding for Roadmap activities. Finally, the Roadmap and the material in the Background document have been used to prepare this R-PP funding request.

3.2.1 REDD Plus Taskforce

In Cambodia, preparations were under way for the establishment of the REDD Plus Taskforce as the REDD plus implementation body. The taskforce had not been officially launched as of the time of field research. According to the information in the proposal submitted to the World Bank's FCPF, etc., the organization structure of the taskforce is expected to be as described below (Figure 20).

[46] This assessment was based on two legal and policy reviews contracted during the Roadmap preparation process: Broadhead, J. and Izquierdo, R. 2010. Assessment of land-use, forest policy and governance in Cambodia. Report prepared by FAO as a contribution to the Cambodia REDD plus readiness process. FAO-Regional Office for Asia and the Pacific, Bangkok. Oberndorf, R. and Nhean, M. 2010. REDD plus in the Cambodian context. An overview of the policy, legal and governance Frameworks impacting implementation. Report for the Cambodia REDD plus readiness process.

[47] Sections 5 and 6 of the Roadmap were written based on a report written by Winrock International and with the technical assistance of FAO-Rome. The Winrock report is: Walker, SM, Casarim, F, Harris, N, and Brown, S. 2010. Cambodia REDD plus Roadmap: Development of a Reference Scenario and Design of a Monitoring System. Winrock International, Washington D.C., USA

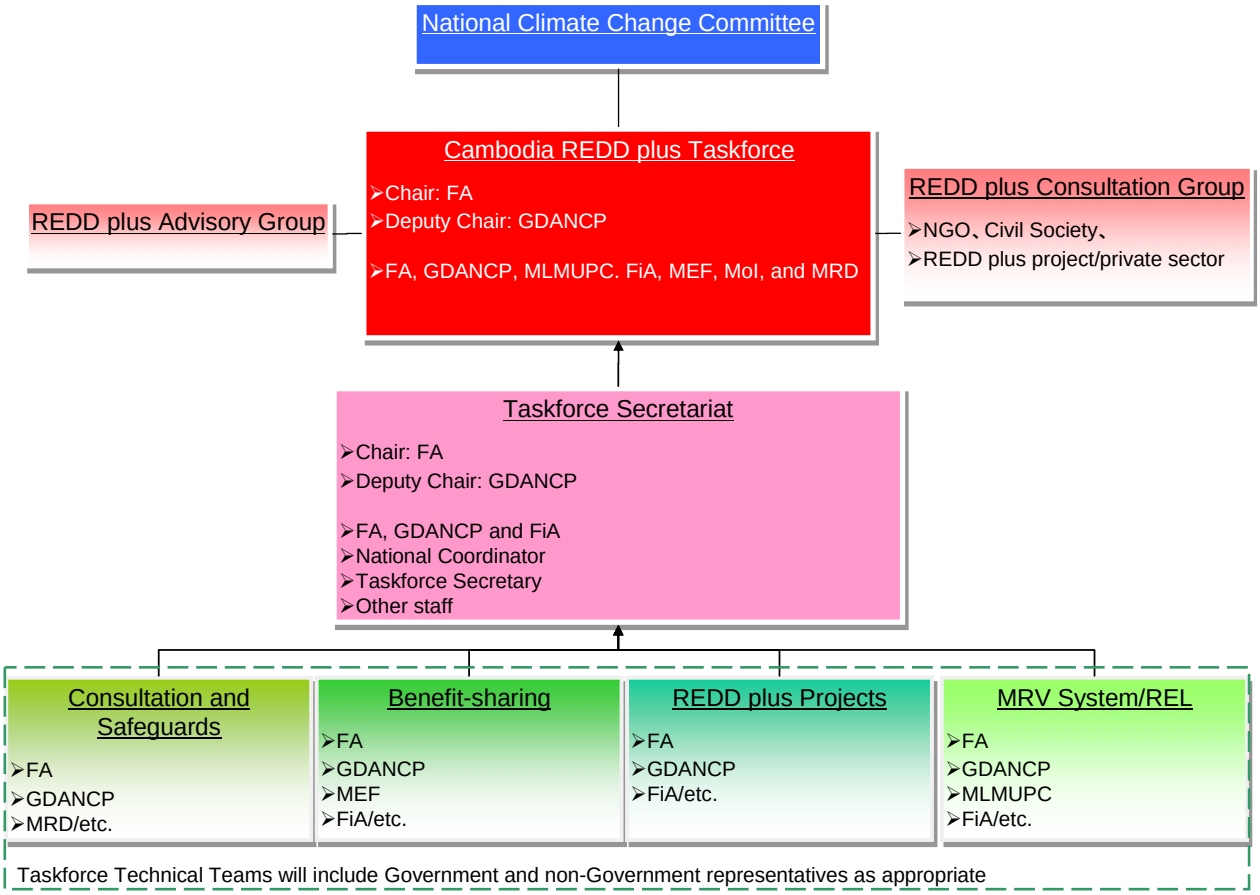


Figure 20: Organization structure of the REDD Plus Taskforce (plan)[48]

Several government agencies are planned to be involved in the REDD Plus Taskforce as illustrated in Figure 20. Their planned roles are shown in Table 17.

[48] Prepared based on the R-PP submitted by the Cambodian government to the World Bank (submitted on March 4, 2011) and on interviews conducted during field research

Table 17 Government agencies involved in the REDD plus implementation body and their roles[49]

Organizations	Role for REDD plus
Ministry of Agriculture, Forestry and Fisheries: MAFF	・ General Jurisdiction over Forests, Fisheries and Agriculture
Forestry Administration: FA	・ Regulation of Permanent Forest Estate, including: tree planting, community forestry, protection forests, national forest cover monitoring, national forest carbon stock assessment and regulating forest carbon trades. Focal point for UNFF, UNCCD and CITES.
Fisheries Administration: FiA	・ Management of Flooded Forests & Mangroves inside the fishery domain
Technical Secretariat for ELCs	・ Regulation of Economic Land Concessions for industrial agriculture
Ministry of Environment: MOE	・ Protected Areas, International Environmental Treaties, Reviewing Environmental Impact Assessments, UNFCCC focal point & CDM Interim Designated National Authority, Convention on Biological Diversity Focal Point
General Department of Administration for Nature Conservation and Protection: GDANCP	・ Management of Protected Areas and Community Protected Areas ・ Climate Change policy coordination: Secretariat of NCCC, UNFCCC reporting & GHG Inventories, Cooperating in development of climate change strategies and carbon credit policy, Coordination of CDM and carbon credit projects ・ Convention on Biological Diversity
Ministry of Economy and Finance: MEF	・ Management of State Properties, including sales, transfers, leases, concessions etc. ・ Management of State Revenue, including co-chair of trust funds
Ministry of Land Management, Urban Planning and Construction: MLMUPC	・ Management of Cadastral Administration of State Immovable Properties ・ Issue title/ownership certificates to all immovable properties ・ Registration of collective title for lands of indigenous communities ・ Mapping and Land-use planning ・ Social Land Concessions
Ministry of Interior: MoI	・ NCDD & Sub-national administration (including commune development plans & Commune/Sangkat fund) ・ Policing
Ministry of Rural Development: MRD	・ Indigenous Peoples policy ・ Rural infrastructure development
Ministry of Industry, Mines and Energy: MIME	・ Mining concessions

[49] Prepared based on the R-PP submitted by the Cambodian government to the World Bank (submitted on March 4, 2011) and on interviews conducted during field research

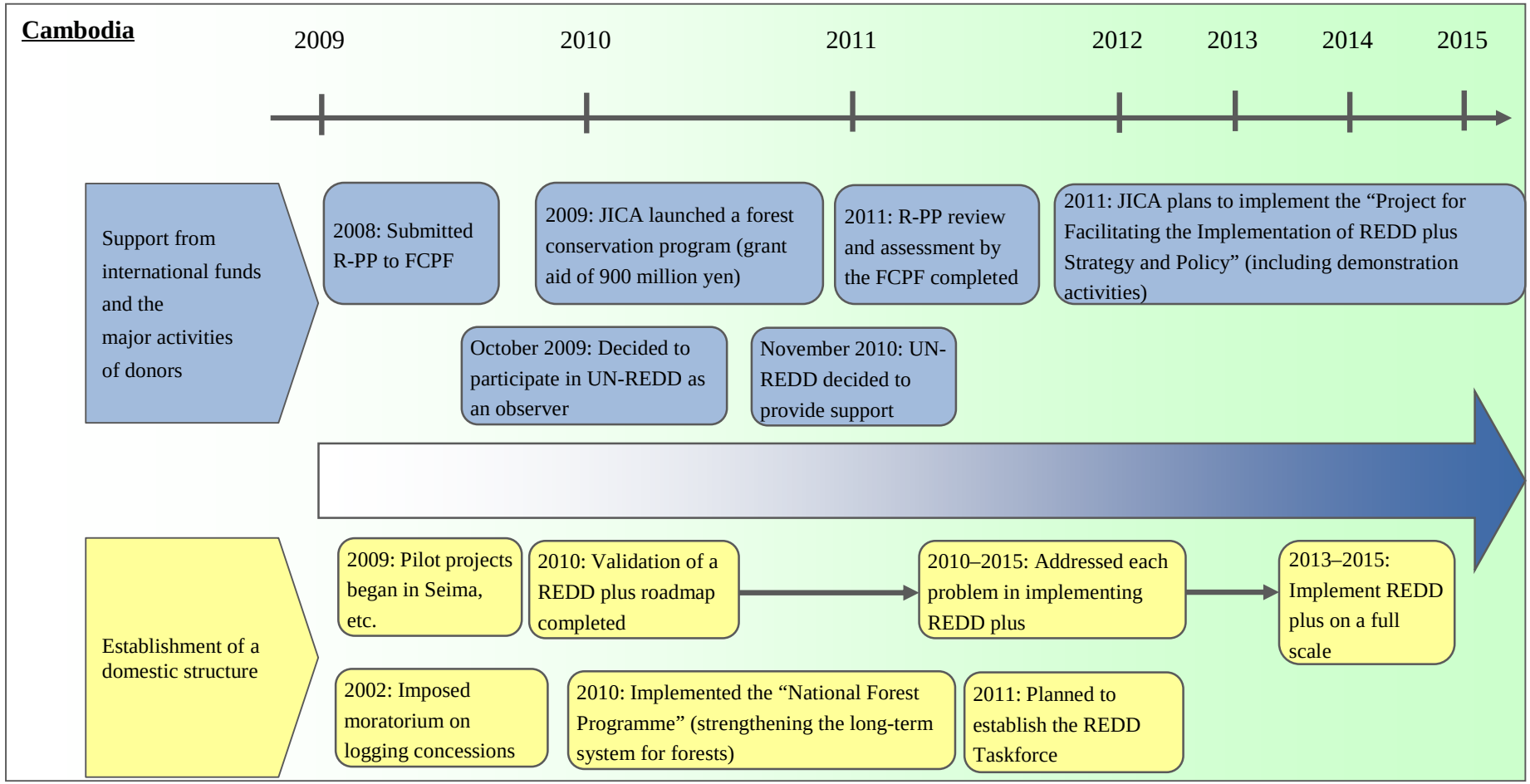
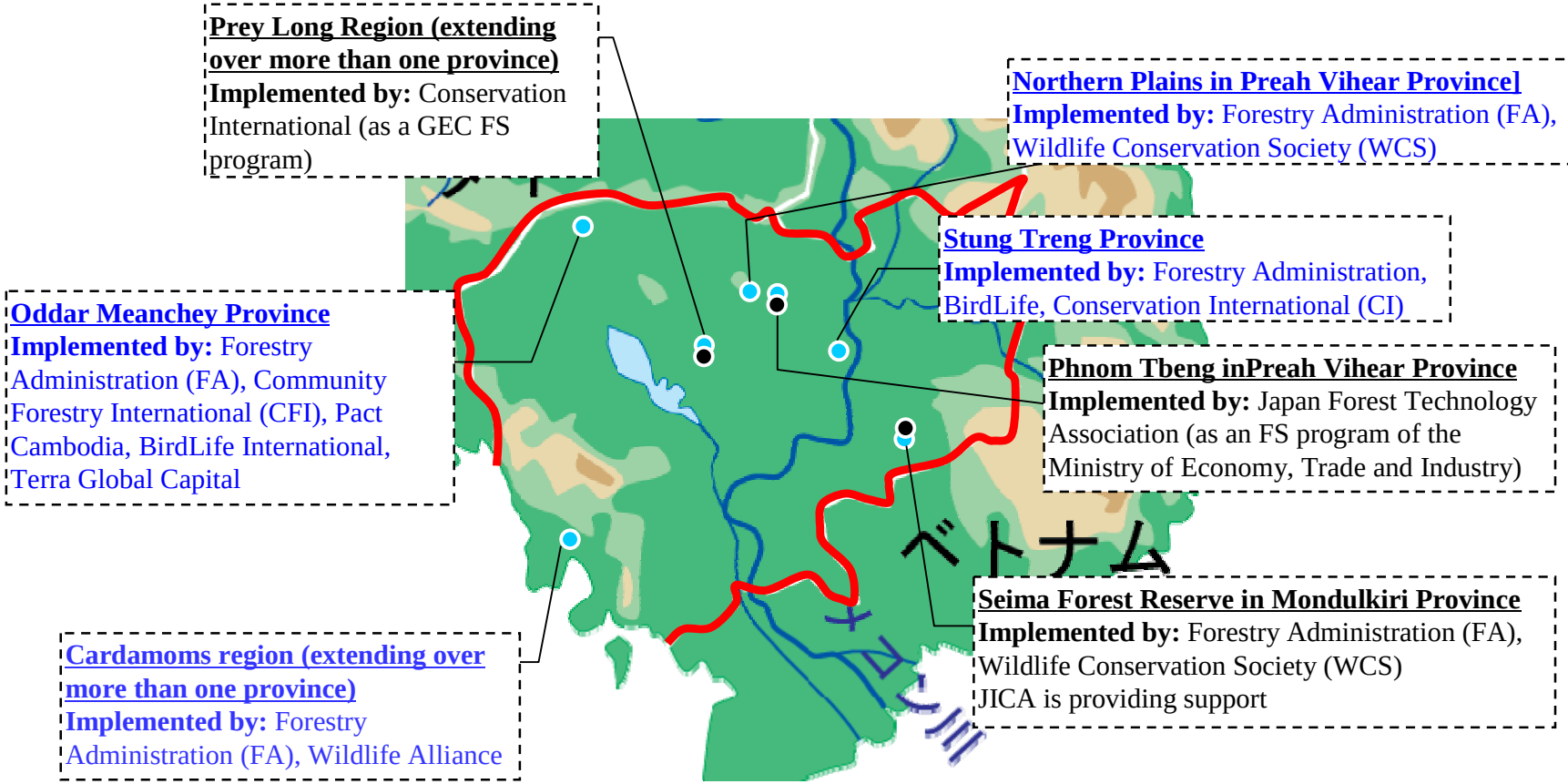


Figure 21 Course of progress toward REDD plus implementation in Cambodia



Source: Interviews

Figure 22 REDD plus demonstration activities in Cambodia

Table 18: Outline of demonstration activities in Cambodia

Donor	Implementation site	Outline of activities
Conservation International (as a GEC FS program)	Prey Long region (extending over more than one province)	Planned as a GEC FC program to be implemented in FY2011, combining the conservation of lowland tropical forests in the surrounding area and the conservation of biodiversity; the problem is that the surrounding area is not listed among the target areas of REDD plus in Cambodia's REDD Plus Roadmap.
Forestry Administration (FA), Community Forestry International (CFI), Pact Cambodia, Birdlife International, Terra Global Capital	Oddar Meanchey Province	Started in 2008; activities in a community forest (approx. 68,000 hectares) designated by the Cambodian government; CCB standards certification has been obtained and efforts are made to obtain VCS certification. The PDD submitted for CCB standards certification states that at least 50% of the income from credits will be passed on to local residents.
Forestry Administration (FA), Wildlife Alliance	Cardamoms region (extending over more than one province)	Started in 2002; two projects regarding Central Cardamon Protected Forest (CCPF) and Southern Cardamon Protected Forest (SCPF) are under way. For SCPF, a PDD is being prepared with the aim of obtaining VCS certification.
Forestry Administration (FA), BirdLife, Conservation International (CI)	Stung Treng Province	A FS program was started in 2009 jointly by BirdLife and Forestry Administration (FA). Efforts are being made to obtain CCB standards certification. Also, there is another project jointly carried out by the FA and CI.
Japan Forest Technology Association (as a FS program of the Ministry of Economy, Trade and Industry)	Phnom Tbeng in Preah Vihear Province	To be carried out as a FS program for FY2011 by the Ministry of Economy, Trade and Industry in FY2011
Forestry Administration (FA), WCS	Northern Plains in Preah Vihear Province	A project is under way with a view to implementing REDD plus.
Forestry Administration (FA), WCS, and JICA providing support	Seima Forest Reserve in Mondulkiri Province	Started in 2008; activities in a forest reserve (the central area alone covers 187,000 ha) designated by the Cambodian government are jointly implemented by the FA and WCS. Now, they are working to obtain CCB standards certification and VCS certification (supported by JICA). The surrounding area is an important biodiversity conservation area where efforts are made to save rare species. Expected to issue carbon credits for 200,000 t-CO_2 per year; the procedure to register the project and issue credits will start in 2012–2013.

3.3 Key points of the proposed approach to REDD plus in Cambodia

3.3.1 REDD plus implementation structure

Current state (problems, etc.):

- As the REDD plus implementation body, the REDD Plus Taskforce was planned to be established in 2011. However, the government agencies that have jurisdiction over forests in Cambodia (Forestry Administration [FA] for forest reserves and the Ministry of the Environment [MOE] for nature and wildlife reserves) do not cooperate in an effective manner. The FA takes a cautious stance toward approving new projects so as to ensure the success of REDD plus projects in the initial period.

- Even if project-based REDD plus is implemented only in forest reserves (under the jurisdiction of the FA) on a short-term basis, a big problem will occur in the coordination between the FA and other government agencies when implementing sub-national/national-based REDD plus on a medium- to long-term basis.

Key points of the proposed approach:

- Since Cambodia recommends REDD plus implementation through a nested approach, it is important to start with a feasible project-based activity and accumulate experience through learning by doing.
- The Forestry Administration (FA) is positive about activities to trade credits on a voluntary market over a short term. In particular, they are not opposed to applying for the certification of the VCS. If the case of the Seimsa Forest Reserve in Mondulkiri Province that applied for VCS certification with the support of JICA is recognized as a good practice of REDD plus in Cambodia, it would serve as a good example for Japanese private-sector enterprises that will launch similar projects in the future.
- In Cambodia, a sub-national-based project is planned to be implemented on a trial basis in some provinces in advance of full implementation. If the project supported by JICA is connected with this project, JICA will be deeply involved in the planning of medium- to long-term REDD plus activities and it will be easier to acquire credits under the bilateral offset credit mechanism in the future.

3.3.2 Safety of the project before the issuance of credits

Current state (problems, etc.):

- Leakage (displacement of emissions), which is a major problem in REDD plus, can be controlled to some extent by expanding the boundaries of the covered area. However, given that the jurisdiction over forests in Cambodia is not unified, if a project is implemented over a relatively large area such as at the sub-national level, the fragile forest management system will make leakage a big problem.

Key points of the proposed approach:

- In implementing REDD plus by a nested approach, it is extremely difficult to control leakage technically. For the future, the introduction of policy measures need to be considered, such as deducting a certain portion of the amount of credits to be issued (similar to the buffer approach under VCS). This will be a point to note when applying the bilateral offset credit mechanism to the project-based REDD plus activities.

3.3.3 Competition and cooperation with other donors

Current state (problems, etc.):

- Some NGOs are taking a lead in implementing projects so far, but no project is planned to develop into sub-national-based activities under the UNFCC.
- Since there is no country (donor) other than JICA providing or pledging to provide support for a project for which demonstration activities are carried out with a view to issuing carbon credits, JICA's support is making great contribution to REDD plus in Cambodia.

Key points of the proposed approach:

- In Cambodia, JICA's activities provide the basis for REDD plus, and JICA has a strong presence also in the roadmap for REDD plus implementation. It will be necessary to bring these activities of JICA into cooperation with private-sector enterprises.
- As many private-sector enterprises are interested in REDD plus activities in Cambodia,[50] it will become important to work in concert with private-sector enterprises.

3.3.4 Safeguards

Current state (problems, etc.):

- Cambodia has a history of protecting wildlife in a proactive manner. Therefore, full consideration needs to be given to the conservation of biodiversity when implementing REDD plus (It is important to avoid criticism from NGOs)
- The government has not clearly articulated its policy concerning the allocation of profits from REDD plus. However, the project in northern Oddar Meanchey Province, which seeks to obtain VCS certification, draws attention as a pioneering case in that it is planned to allocate 50% of the income from credits to local residents.

Key points of the proposed approach:

- Although there is no international standard for the conservation of biodiversity so far, it is important to ensure full coordination with the Cambodian government and international NGOs, such as the WCS, which have in-depth knowledge regarding the conservation of biodiversity.
- Regarding profit allocation, it is important, in considering how to address the issues of land ownership and the right of land use, as well as other issues concerning the rights to carbon credits, to review the process of deciding the allocation method while paying attention to the development of the preceding case.

3.3.5 Miscellaneous

- For the bilateral offset credit mechanism proposed by Japan, REDD plus will be relatively important given that GHG emissions in the industrial sector are not so large in Cambodia.
- As it is difficult to picture medium- to long-term strategies regarding how to cooperate with private-sector enterprises (use of funds, etc.) based on the present state of JICA's activities, it is important to clearly define the roles of private-sector enterprises. For the future, it is necessary to develop a comprehensive strategy while keeping an eye on the moves of private-sector enterprises engaging in REDD plus through domestic research.

[50] In FY2011, Conservation International (CI) plans to conduct a "new mechanism feasibility study for REDD+ in Prey Long, Cambodia" as a, FS program of the Ministry of the Environment. In the final report of this study, this program is mentioned as a reference example of cooperation with JICA, together with detailed activities (stance of profit allocation, etc.)

4. Results of field research (Laos)

4.1 State of forests

In Laos, 80% of the land area is mountainous area. According to a report from Tropical Forest Action Program (TFAP), the forest coverage rate declined from 70% in the 1940s to 42% in 2002 (Table 19). Laos has future plan which is up to 70% of forest ratio in 2020[51]. In the northern mountainous region of Laos, there are still many poor people relying on slash-and-burn agriculture, and slash-and-burn-shifting cultivation is one of the causes of deforestation. In addition, with the rapid expansion of the cultivation of commercial crops such as rubber and feed corn with foreign investment in northern Laos in recent years, forms of land use and forest use have been changing significantly, causing concern over forest conservation and sustainable use.

Table 19 General information of Lao's forest[52]

Indicators	1990	2000	2005	2010	Future plan
Land area[53] (1,000ha)	-	-	-	23,680	Up to 70% of forest ratio in 2020
Forest area (1,000ha)	17,314	16,532	16,142	15,751	
Deforestation area (1,000ha/yr) (): Mean deforestation ratio		78 (0.46%)	78 (0.48%)	78 (0.49%)	
Primary Forest (1,000ha)	1,490	1,490	1,490	1,490	
Other naturally regenerated forest (1,000ha)	-	-	-	14,037	
Planted Forest (1,000ha)	3	99	224	224(	
Carbon stock in living forest biomass (Mt)	1,186	1,133	1,106	1,074	

As part of its Forest Strategy 2020 scheme, the government of Laos has announced plans to return the forest coverage rate to 70% by 2020 and is currently establishing structures for this purpose. Laos passed a Forest Law in 1996 and the law was most-recently revised in December 2002 (it is also scheduled for revision in 2011). However, forest management in rural areas is not being carried out sufficiently due to (1) the low level of technical expertise with regards to forest management by regional governments and (2) budgetary shortages. If forest management in rural areas were carried out by local governments and residents working together, this would not only assist regional forest conservation but would also contribute to alleviating poverty and global environmental preservation.

4.2 Situation of REDD plus

In the wake of UNFCCC negotiations regarding REDD plus, in 2008 Laos decided to participate in the World Bank's FCPF program and is now receiving funds from the FCPF during the Readiness phase. The Laos government also established a REDD plus taskforce in 2008 to begin examining the technical and strategic issues involved in the implementation of REDD plus projects. An agreement was then reached in

[51] Laos has two dataset of forest area. Therefore forest area reported to FAO is a little bit difference from own dataset.
[52] FAO 2010. Global Forest Resources Assessment 2010. avairable at web site of (http://www.fao.org/forestry/fra/fra2010/en/)
[53] Including Inland Water

2010 for Laos to receive funds as part of the World Bank's FIP program. Laos is now at the final stage of selecting target regions for the implementation of pilot REDD plus projects (details of the candidate regions are shown in Figure 25).

On the other hand, a departmental restructuring was carried out June 2011 and as a result there remain uncertainties about the structures for implementing REDD plus. However, 2011 is scheduled to see the opening of a new REDD plus office to coordinate REDD plus activities, so there are high expectations for hereon.

4.2.1 REDD Plus Taskforce

In Laos, the REDD Plus Taskforce was established to be the party responsible for REDD plus. The organization had not been officially launched yet as of the time of the field research. The REDD Plus Office is also planned to be established as the actual operating body of REDD plus under the central and regional governments (Figure 23).

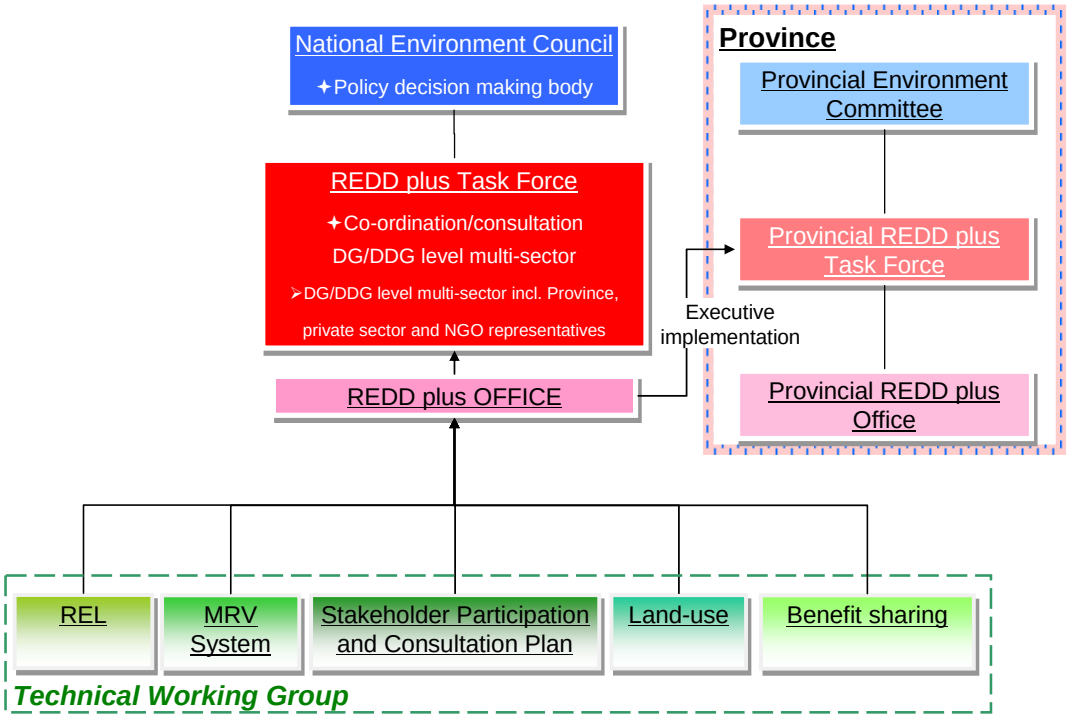


Figure 23 Organization structure of the REDD Plus Taskforce (plan)[54]

Several government agencies are planned to be involved in the REDD Plus Taskforce as illustrated in Figure 20 (15 agencies will be involved). As of the time of the field research, their roles were unclear because of the reorganization of government offices conducted in June 2011, but Department of Forestry (DOF) will be divided and new agency will manage protection forest and conservation forest in the future.

[54] Prepared based on the R-PP submitted by the Laos government to the World Bank (submitted on November 11, 2010) and on interviews conducted during field research

Table 20 Government agencies involved in the REDD plus implementation body and their roles[55]

Organizations		Role for REDD plus
Ministry of Agriculture and Forestry: MAF		The concrete role is not specified in a publication document.
	Department of Forestry: DOF	
	National Agriculture and Forestry Research Institute: NAFRI	
	National Agriculture and Forestry Extension Service: NAFES	
National Agriculture and Forestry Extension Service: NAFES		
National land Management Authority: NLMA		
Ministry of Industry and Commerce: MOIC		
Water Resources and Environment Administration: WREA		

[55] Prepared based on the R-PP submitted by the Laos government to the World Bank (submitted on November 11, 2010) and on interviews conducted during field research

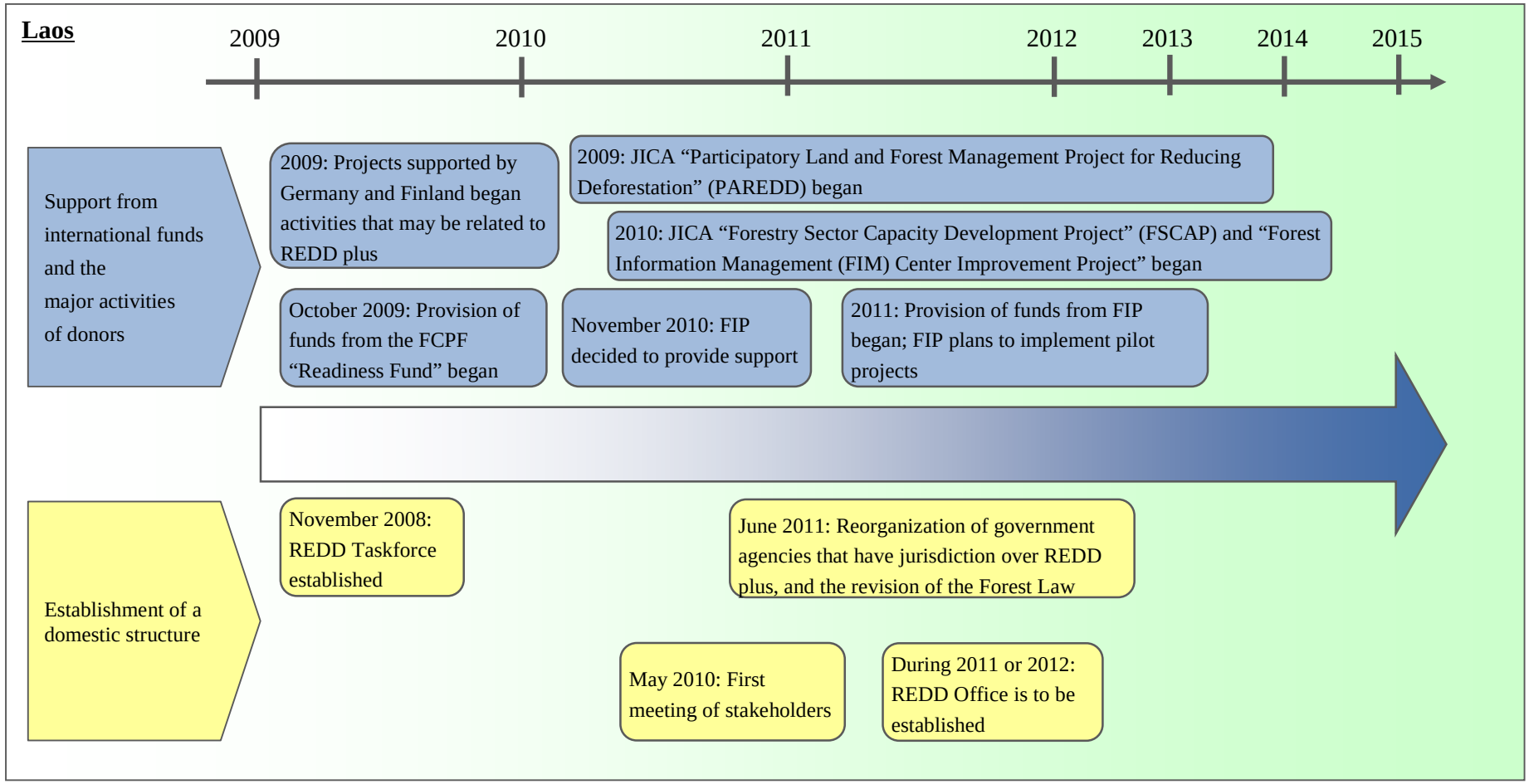


Figure 24 Course of progress toward REDD plus implementation in Laos

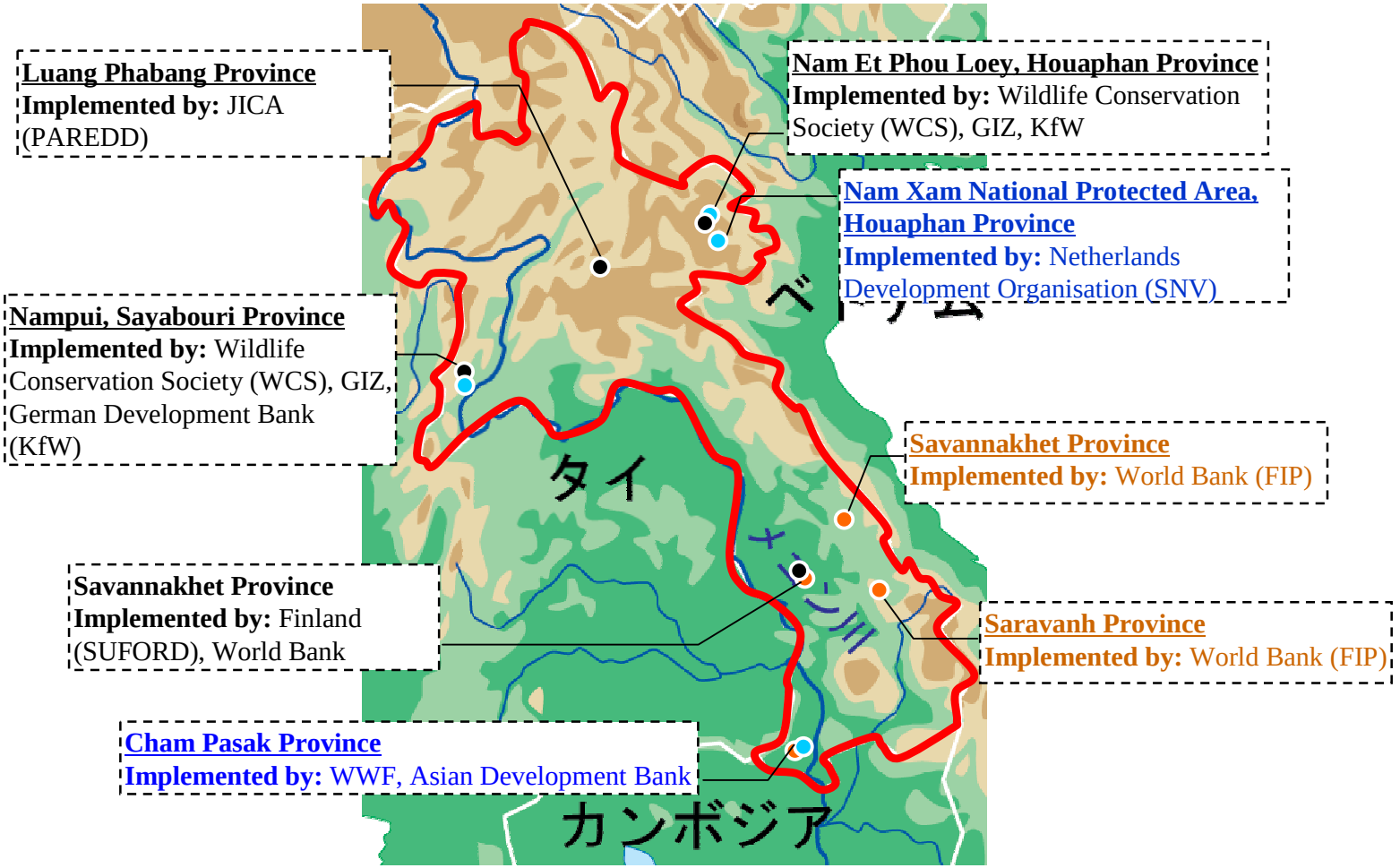


Figure 25 REDD plus demonstration activities in Laos

Table 21: Outline of demonstration activities in Laos

Donor	Implementation Site	Outline of Activities
JICA Participatory Land and Forest Management Project for Reducing Deforestation (PAREDD)	Luang Phabang Province	Started in 2009; focusing on the reduction of deforestation and forest degradation caused by slash-and-burn agriculture in the northern region
WCS, German Agency for International Cooperation (GIZ[56]), German Development Bank (KfW[57])	Nampui, Sayabouri Province	Targeting conservation forests; in Sayabouri Province, activities have started with a view to promoting them as province-based activities and further developing them from project-based to sub-national-based activities. The submission of a PDD for VCS certification is scheduled for June 2012.
Finland Sustainable Forestry and Rural Development (SUFORD) and the World Bank	Savannakhet Province	Activities are promoted for sustainable forest management and rural development. It aims to organize rural development committees in 700 villages and distribute 8,000 USD/village to help develop infrastructure and create a microcredit scheme. In addition, 5% of income from timber goes into the rural fund. Winrock International is involved as a consultant on the monitoring system.
WCS, GIZ, KfW	Nam Et Phou Loey, Houaphan Province	Targeting conservation forests; a project to reduce mosaic deforestation caused by slash-and-burn agriculture; work is under way to obtain VCS certification in several years.
Netherlands Development Organisation (SNV)	Nam Xam National Protected Area, Houaphan Province	No information
World Bank (FIP)	Savannakhet Province	One of the World Bank's programs to support REDD plus; a pilot project corresponding to Phase 2 of the phased approach is implemented in this region. The program has just begun but may have a huge impact on the REDD plus strategy of the Laos government.
	Saravanh Province	Same as above

4.3 Key points of the proposed approach to REDD plus in Laos

4.3.1 REDD plus implementation structure

Current state (problems, etc.):

- The REDD Taskforce has already been established as the REDD plus implementation body, which mainly address the technical issues. The structure for implementing REDD plus in Laos is being established with the Department of Forestry (DOF) playing the central role.
- The REDD Plus Office, which is responsible for the policy aspect of REDD plus implementation, is planned to be established by the end of 2011. This REDD plus implementation structure with REDD the Plus Taskforce and the REDD Plus Office playing the central role is planned to be established both under the central and regional governments. Smooth operation of this structure is the key to REDD plus in Laos.
- In June 2011, the reorganization of the government agencies that have jurisdiction over forests and the

[56] Stands for **G**esellschaft für **I**nternationale **Z**usammenarbeit

[57] Stands for **K**reditanstalt **f**ür **W**iederaufbau

revision of the Forest Law were conducted, and it was decided to establish four new ministries, including the Ministry of Natural Resources and Environment. As a result, the jurisdiction of the Department of Forestry will be limited to production forests, as the jurisdiction over other kinds of forests including forest reserves and conservation forests is planned to be transferred to the Ministry of Natural Resources and Environment (detailed schedule undecided). In addition, the Water Resources and Environment Administration (WREA) and the National Land Management Authority (NLMA) that currently fall under the Prime Minister's office are planned to be incorporated into the Ministry of Natural Resources and Environment. Since it is difficult to predict the impact of reorganization on the REDD plus implementation structure at present, attention needs to be paid to the moves in the government that may affect REDD plus implementation.

Key points of the proposed approach:

- If the reorganization of government offices results in any change in the organizations that have jurisdiction over forests (largely divided into forest reserves, conservation forests, and production forests), it will be necessary to consider the possibility of the change in the counterpart for JICA's technical cooperation project and to respond to the latest situation of forest management. Taking into account that Finland and Germany are deeply involved in REDD plus activities for production forests and conservation forests, respectively, it is important to cooperate and coordinate among donors to seek an effective division of roles.[58]
- It is necessary to pay attention to and take into account how forests are defined under the new Forest Law (to be revised in June 2011 or after) (e.g., whether slash-and-burn agriculture field is classified as forest or agricultural land, etc.) and how the payment for ecosystem service,[59] which is planned to be introduced, will affect the profit allocation of REDD plus when developing REDD plus implementation and support strategies for the future. Since JICA's project in Luang Phabang Province in the north focuses on controlling the expansion of burnt fields, the classification of the slash-and-burn agriculture field is extremely important for REDD plus strategy for the future.
- In the short term, the Laos government is not opposed to a project-based approach to REDD plus aimed at obtaining the certification of the VCS. Therefore, it will be effective to expand and develop the project in Luang Phabang Province in the north supported by JICA into sub-national-based REDD plus activities in the medium to long term.

4.3.2 Safety of the project before the issuance of credits

Current state (problems, etc.):

- Leakage (displacement of emissions), which is a major problem in REDD plus, can be controlled to some extent by expanding the boundaries of the covered area. Therefore, in order to eliminate the concern over leakage as much as possible, it is necessary to seek an approach to REDD plus in extensive forests and a form of REDD plus activities covering forests of different classifications.

[58] The German project in Laos is characterized by its emphasis on cooperation among donors based on the lessons learned from the experience in Indonesia, where too many donors were involved.

[59] Revision of the Forest Law is scheduled for June 2011 or after, and it is unpredictable at present how the payment for ecosystem services will be provided for.

Key points of the proposed approach:

- In implementing REDD plus by a nested approach, it is extremely difficult to control leakage technically. In addition, if the organizations that have jurisdiction over forests do not cooperate in an effective way as a result of abovementioned reorganization of government offices, the concern over leakage (displacement of emissions) will increase. Therefore, it is necessary to advise the central government to consider the expansion of the boundaries of REDD plus in the medium to long term.

4.3.3 Competition and cooperation with other donors

Current state (problems, etc.):

- In Laos, Japan (JICA), Germany (GIZ and KfW), and Finland (SUFORD) have been supporting the REDD implementation structure.
- In the latest movements, Germany is getting a step ahead by proposing the province-based implementation of a project with the aim of obtaining VCS certification. On the other hand, SUFORD is working in close cooperation with the World Bank and seems to have the great advantage of being aligned with the international activities that the World Bank is promoting.

Key points of the proposed approach:

- JICA also needs to take the lead by accelerating activities in Laos while keeping an eye on the movements of other donors. In Laos, only a limited number of government officials are familiar with international trends in REDD plus and it is important to keep close relations with them. In addition, it is necessary for JICA or Japan to make an appeal for its support to the Laos government in an effective manner or present its accomplishment as quickly as possible, in order to avoid a situation where the achievements of the activities of Germany and Finland will lead the development of the REDD plus strategy of all of Laos. It will be important to present the achievements of the activities implemented in Louang Phabang Province on a trial basis (registration of the project and the issuance of credits) to the Laos government and thereby provide significant input to the REDD plus strategy of Laos.

4.3.4 MRV system

Current state (problem, etc.):

- The technical support for the development and management of the forest data infrastructure in Laos is provided by Japan on a national basis,[60] which provides JICA with a great advantage over other donors. Taking the lead on a national basis in this way is considered extremely effective in maintaining consistency and integrity in the issuance of credits after the activities are shifted to sub-national- or national-based activities in the medium to long term.

Key points of the proposed approach:

- JICA or Japan is implementing REDD plus activities in Laos both on a project basis and on a national basis, and provides a good example for full-scale REDD plus implementation in the future. This

[60] Programme for Forest Information Management, on the web at: http://gwweb.jica.go.jp/km/ProjectView.nsf/b7daf2eabe456da849256bdf0038493d/17e324554be7b4734925772a003a8f60?OpenDocument

example will be useful in strategically connecting development support such as forest inventory or monitoring, which JICA is providing in foreign countries, including Papua New Guinea, to REDD plus.

- The JICA project currently underway provides a good opportunity to discuss how to address the issue of consistency in the national-based and project-based estimation of emissions and sinks, which is a major issue for REDD plus. It is expected to accomplish good achievement that will also provide input to the REDD Research and Development Center of Japan and to the United Nations Framework Convention on Climate Change (UNFCCC), etc.

4.3.5 Safeguards

Current state (problems, etc.):

- In Laos, an afforestation project was implemented as a FY2010 FS program of the Ministry of Economy, Trade and Industry.[61] However, because of the Department of Forestry (DOF)'s "policy of not recognizing short-rotation afforestation projects as REDD plus activities," this FS program could not be proceeded into an effective approach to REDD plus.

Key points of the proposed approach:

- The definition of a forest for the purpose of REDD plus has not been agreed on under the UNFCCC, and careful attention needs to be paid. At the same time, in light of the fact that some countries exclude rubber forests and bamboo groves from the definition of forests for the A/R CDM, it is important to take note of the definition of forests as adopted by other countries.
- The feasibility study program of the Ministry of Economy, Trade and Industry is an example where the stance of the Laos government toward REDD plus was not correctly understood. The Japanese side needs to consider the system for not repeating the same failure. For the future, when planning REDD plus activities to be jointly conducted by JICA and private-sector enterprises, improvement measures will be necessary, such as providing opportunities or setting up a contact window for opinion exchange between JICA and private-sector enterprise.

4.3.6 Miscellaneous

- In Laos, many donors, such as the Asian Development Bank, World Bank, UNDP, and JICA, etc., are present to provide REDD plus-related support (investment), and the Laos government cannot deal with them in a comprehensive way. As this situation could have adverse impact on ensuring the transparency of REDD plus funds, the World Bank also keeps careful watch. For full-scale implementation of REDD plus in the future, international organizations and private-sector enterprises will invest funds in Laos. Support to the government organization that receives them will be also necessary.
- In Laos, an FIP administered by the World Bank has been decided to be implemented, and the approach to REDD plus is in transition from Phase 1 to Phase 2 (the implementation site for Phase 2 under the FIP is now under consideration as shown in Figure 25, and cooperation with private-sector enterprises is also being developed). The approach supported by the World Bank will further move from Phase 2 to

[61] Oji Paper Co., Ltd., 2010, FS for Creating a REDD Plus Scheme in Laos; available on the web at: http://www.meti.go.jp/meti_lib/report/2011fy/E001720.pdf

Phase 3. However, JICA has a less close relationship with the World Bank than Germany and Finland[62], and therefore, it is important to exchange information with a view to cooperating with the World Bank.

- In connection with the bilateral offset credit mechanism to be introduced in the future, the Laos government expressed willingness to welcome the active participation of private-sector enterprises, etc. In addition, the Laos side shows great interest in cooperation between JICA and private-sector enterprises. Therefore, it is highly significant to demonstrate an excellent example regarding the project in Luang Phabang Province.

[62] JICA is collaborated with FIP for developing guideline of protected forest management.

5. Results of the field research (Vietnam)

5.1 State of forests

In Vietnam, proper forest management is not conducted due to high population density and the conversion of forests to cultivated fields to cope with the increase in the production of commercial crops, and as a result, the quality of natural forests in general and biodiversity has been deteriorating. People in forested areas (mostly ethnic minorities) are living in poverty. To address this situation, the Vietnamese government launched a nationwide "5 Million Hectares Reforestation Program (661 Program)" in 1998. In addition, "Forestry Development Strategy (2006-2010)" was formulated with the approval of the Prime Minister, and measures have been taken to increase forest area and improve the livelihood of residents. After that, the Vietnamese government actively adopted the opinions of donor organizations including those from Japan and revised the abovementioned strategy into the more comprehensive and advanced "Vietnam Forestry Development Strategy (2006-2020)," under which efforts have been made to recover forests both in terms of quality and quantity. In July 2007, the 661 Program was amended to require the stipulation of the form of forest management, the coordination of the targets of forest management, and the special consideration for the development of non-timber forest products (NTFP) to benefit residents in conservation forests.

As a result of these efforts, the forest coverage rate reported to the FAO increased from 28% in 1990 to 42% in 2010 (Table 22). Still, it is halfway in achieving the targets for 2020 (forest coverage rate of 47%, share of forestry in the gross national product [GNP] of 2-3%, employment generation of 2 million in forestry).

Table 22 General information of Vietnam's forest[63]

Indicators	1990	2000	2005	2010
Land area[64] (1,000ha)	-	-	-	32,932
Forest area (1,000ha)	9,363	11,725	13,077	13,797
Deforestation area (1,000ha/yr) (): Mean deforestation ratio		236 (2.28%)	270 (2.21%)	144 (1.08%)
Primary Forest (1,000ha)	384	187	85	80
Other naturally regenerated forest (1,000ha)				10,205
Planted Forest (1,000ha)	967	2,050	2,794	3,512
Carbon stock in living forest biomass (Mt)	777	927	960	992

5.2 Situation of REDD plus

According to the UNFCCC conference in Bali, Vietnam is one of the most severely affected by negative impact of climate change in the world, with potential extensive economic damage and loss of life. Its extended coastline with land just above sea level houses most of the country's population and harbors most its economic activities, good for some 90% of the GNP. For this reason the country has much to gain when

joining the international struggle against the effects of global warming.

Vietnam is one of the nine countries identified for country programming under the Quick Start Initiative of the UN-REDD Programme, and was one of the first countries to receive approval of the R-PIN under the current FCPF initiative. It therefore is much committed to achieve substantial results in the field of climate change and mitigation.

The forests of Vietnam are under serious threat. Increasing deforestation and rapid degeneration of forests in the country have led to loss of habitat and made entire landscapes susceptible to changing climate conditions. Much forest cover was removed between 1943 and 1993 declining the national coverage from at least 43% to 20%. Since then considerable efforts have been made to increase overall forest cover. According to official statistics Vietnam‘s actual forest area has increased to 13.26 million ha in 2009 (above 39% of the land area). With the Five Million Hectares Reforestation Program it aims to reach 40% by 2010. Much of the increase has been realized through plantations, re-designation and inclusion of previously omitted limestone forests, and natural regeneration - predominately of bamboo forest area. However, albeit some net increase in forests is observed, Vietnam has clear pockets of serious deforestation and extensive degradation occurs. Furthermore, it is generally acknowledged that the quality of natural forests are considered poor or regenerating and continues to be more fragmented and degraded. Lowland forests supporting their full natural biodiversity have been almost entirely lost, while Vietnam‘s mangrove forests have been significantly degraded.

The factors driving deforestation in Vietnam have changed throughout the course of history. Much of this was a result of war and agricultural expansion by people migrating into forested areas. Currently it is the fast economic growth within the country and the drive to export commodities to be the underlying drivers of deforestation and forest degradation. Changing natural forests into alternative land use, such as coffee or rubber, has rapidly changed the landscape. Such opportunities are a serious threat to standing natural forest. It is of much importance that the benefits of REDD plus outweigh the opportunity costs from current land uses.

Government Decree No. 99/2010/ND-CP dated 24th September 2010 on Policy on Payment for Forest Environmental Services (PFES), in which carbon sequestration and conservation are considered as forest services, paid an important legal foundation for the REDD plus implementation in Vietnam. Fully implementing a mechanism on REDD plus is a challenging task and requires cross-sectoral planning and coordination, as well as a revision of policies, programs, laws and institutions. Vietnam has, through its parallel UN-REDD activities, already established a well-defined institutional structure to initiate the REDD plus process. In January 2011, the Vietnam REDD plus Steering Committee is established under authorization of the Prime Minister and chaired by Minister of Ministry of Agriculture and Rural Development (MARD). The Vietnam REDD plus Office is founded to coordinate all the REDD plus -related activities in Vietnam. All participating parties are organized through two established groups: the National REDD Network and the Technical Working Group, each with its clearly defined roles and responsibilities.

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

64 Including Inland Water

5.2.1 REDD Plus Office

As part of the REDD plus implementation structure, the REDD Plus Office has been established under the jurisdiction of the REDD Plus Steering Committee and the Vietnam Administration of Forestry (VNFOREST). As of the time of the field research, however, the REDD Plus Office was not in full operation due to the shortage of personnel and other problems (Figure 26).

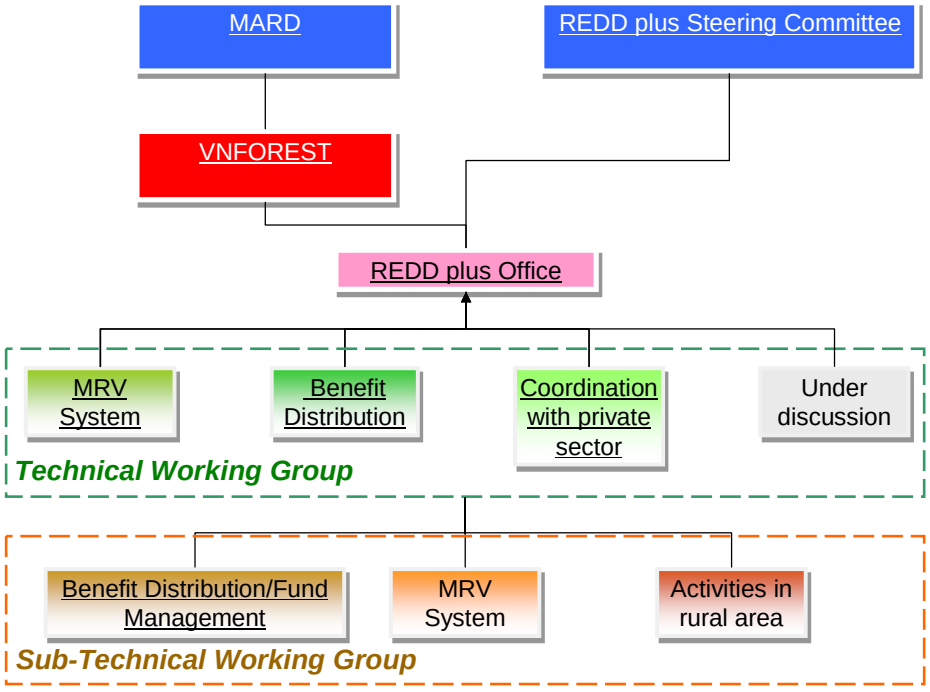


Figure 26 Organization structure of REDD Plus Office[65]

Several government agencies are planned to be involved in the REDD Plus Office as illustrated in Figure 26. Their planned roles are shown in Table 23.

65 Prepared based on the R-PP submitted by the Vietnamese government to the World Bank (submitted on January 20, 2011) and on interviews conducted during field research

Table 23 Government agencies involved in the REDD plus implementation body and their roles[66]

Organizations	Role for REDD plus
Ministry of Natural Resources and the Environment: MONRE	・ Taking the lead in overall management of climate change programs. It is also the focal agency of the UNFCCC and CBD.
Ministry of Agriculture and Rural Development: MARD	・ Having is responsibility for government administration in agriculture, forestry, fishery, irrigation, salt production and rural development
Vietnam Administration of Forestry: VNFOREST	・ Key agencies of the MARD and is in charge of the overall development of the Forestry Sector
Ministry of Planning and Investment: MPI	・ Land use plan
Ministry of Finance: MOF	・ Coordination of finance mechanism for REDD plus
Ministry of Science and Technology: MOST	・ No concrete role
Ministry of Foreign Affairs: MOFA	・ No concrete role
National Ethnic Committee: CEMA	・ Coordination with rural people or indigenous people

66 Prepared based on the R-PP submitted by the Vietnamese government to the World Bank (submitted on January 20, 2011) and on interviews conducted during field research

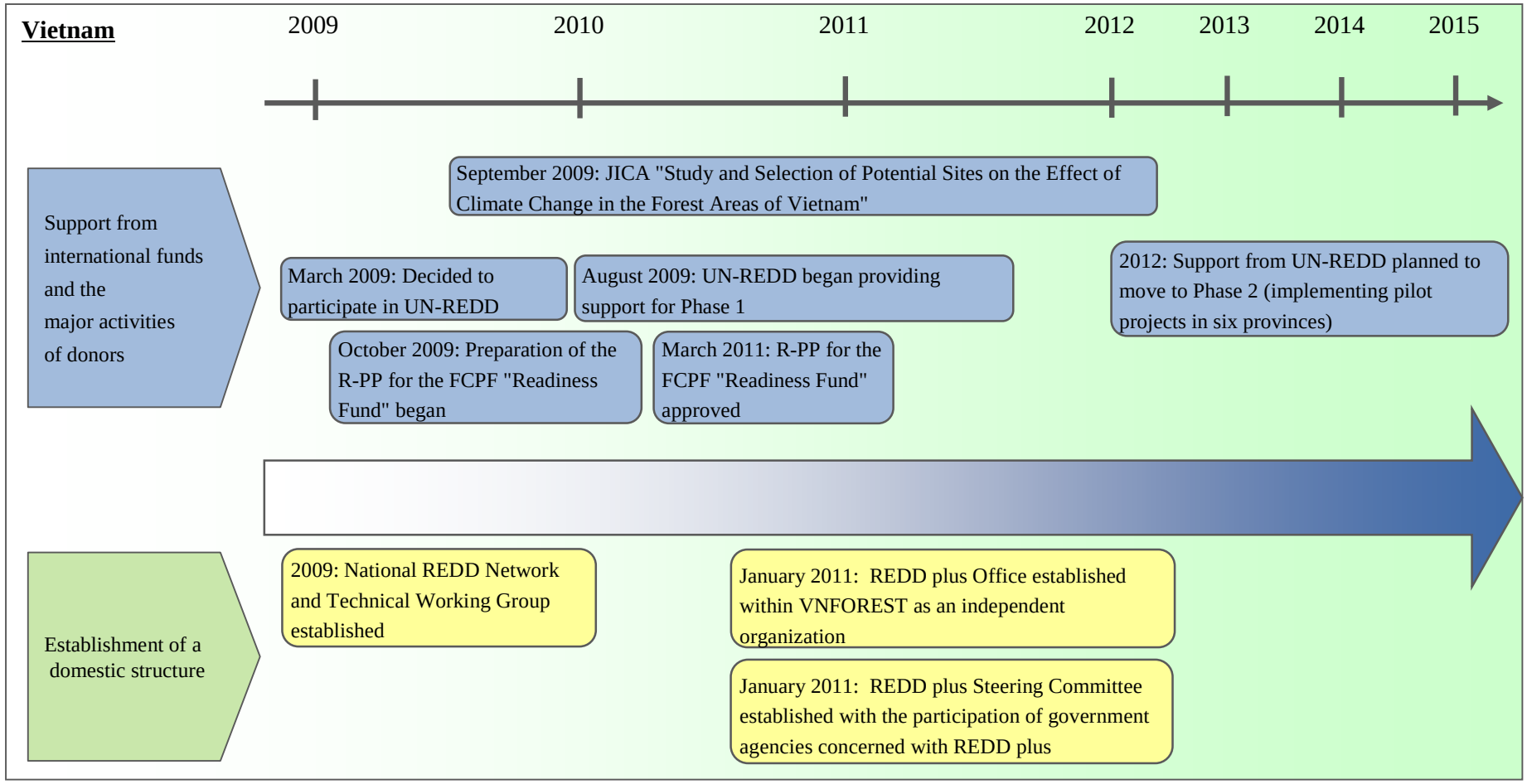


Figure 27 Course of progress toward REDD plus implementation in Vietnam

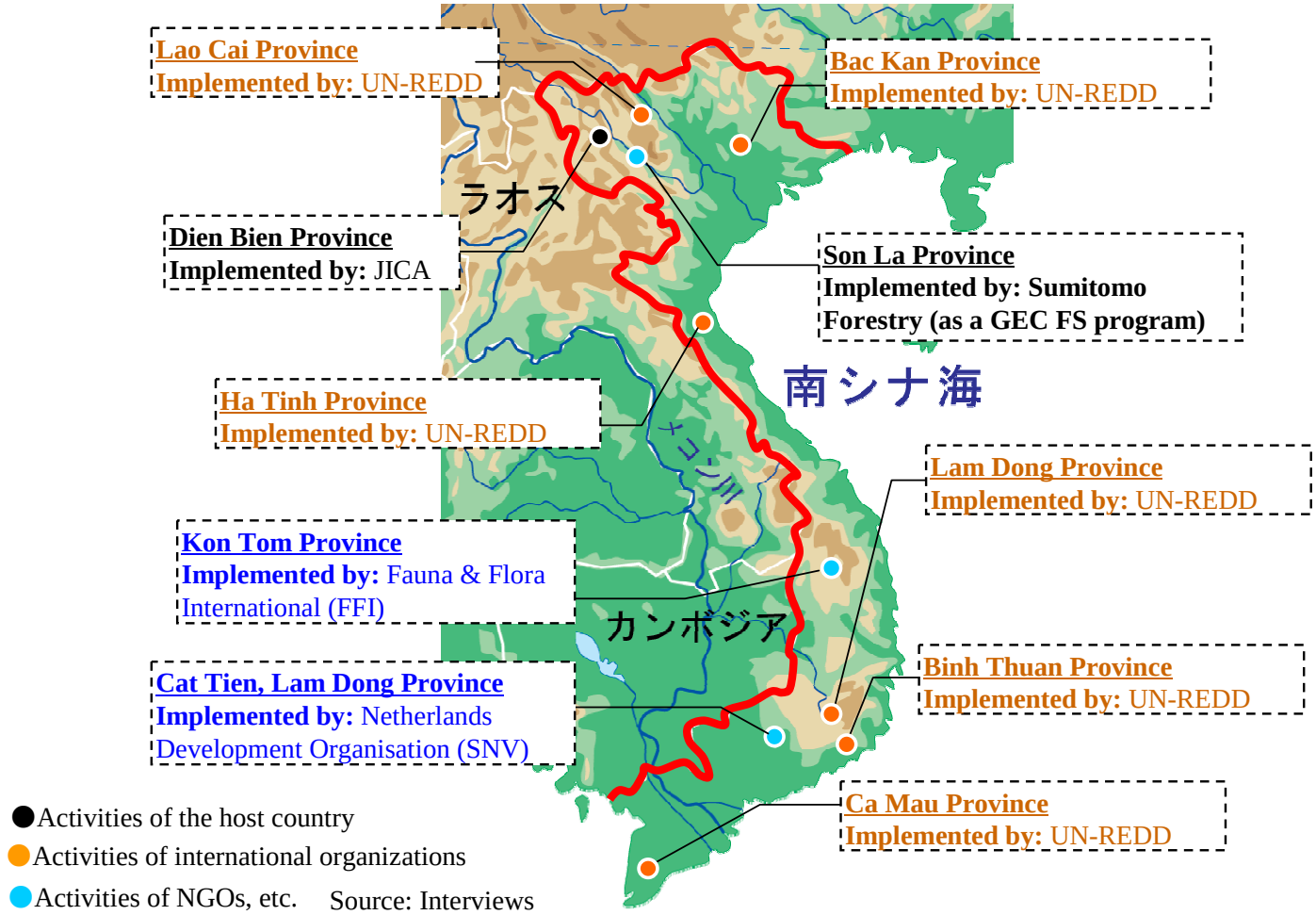


Figure 28 REDD plus demonstration activities in Vietnam

* In many other forest conservation projects that are being implemented, the shift of direction toward REDD plus is discussed.

Table 24 Outline of demonstration activities in Vietnam

Donor	Implementation Site	Outline of Activities
UN-REDD	Lao Cai province	Province-level pilot projects are planned as part of a Phase 2 approach.
	Ha Tinh province	
	Bac Kan province	
	Lam Dong province	
	Binh Thuan province	
	Ca Mau province	
Fauna & Flora International (FFI)	Kon Tom province	A two-year project (2011-2013) is implemented with a total fund of 3 million USD, aiming at preserving biodiversity, and at the same time, establishing a system for allocating profits from REDD plus activities.
Netherlands Development Organisation (SNV)	Cat Tien, Lam Dong province	A project is implemented to reduce deforestation and forest degradation in Cat Tien National Park with the support of the U.K.
Sumitomo Forestry Co., Ltd. (as a GEC FS program)	Son La Province province	A project regarding afforestation and biomass power generation using forestry residue is planned.

5.3 Key point of the proposed approach to REDD plus in Vietnam

5.3.1 REDD plus implementation structure

Current state (problems, etc.):

- The REDD Plus Office was established in January 2011 as the organization in charge of REDD plus (Figure 20), though it was not in full operation at the time of the field research due to the shortage of personnel and other problems. The two organizations that play a central role in the REDD Plus Office, the Ministry of Natural Resources and Environment (MONRE)[67] and the Vietnam Administration of Forestry (VNFOREST),[68] are not cooperating efficiently, leaving many uncertainties regarding the comprehensive REDD plus strategy for the future.
- Reflecting that Vietnam has been receiving continuous support under UN-REDD based on the idea of REDD plus as set forth in the resolution of UNFCCC (sub-national/national-based approach), the project-based approach assuming that credits will be traded on the voluntary market has not been accepted in Vietnam (this stance is softening recently). However, considering that the activities of UN-REDD will move to Phase 2 this year, it is highly likely that activities to supply credits to the voluntary market will start on a trial basis (VNFOREST is not opposed to obtaining VCS certification).[69]

Key points of the proposed approach:

- JICA thinks that it needs to promote the project activity taking the shift to Phase 2 (pilot phase) in Vietnam as a good opportunity. To this end, it is important to figure out how to cooperate with UN-REDD and how to implement new demonstration activities. Detailed discussions will be necessary

67 The Climate Change Office was established (represented by Dr. Phil).

68 It has jurisdiction over the forestry sector in general (mainly REDD plus).

69 At the workshop on REDD plus held during the field research, donors from other countries and the official in charge at VNFOREST expressed strong interest in the voluntary market. This tendency seems to be the result of the impact of the activities in other countries. It was indicated that the project would be actively implemented for the future.

on various issues, including the project plan of the forestry-related project being implemented in Dien Bien Province in the northwest.

5.3.2 Safety of the project before the issuance of credits

Current state (problems, etc.):

- The implementation of REDD plus involves the issue of ownership and the right of use, etc., of the forest owner. The unique system of forest ownership in Vietnam represents a major obstacle to REDD plus implementation. In Vietnam, there are approximately 3 million hectares of privately owned forests (owned by approximately 2 million households) in addition to the forests managed by the central and regional governments, as well as the communes that are regional organizations. It is quite troublesome to gain consensus from all of these stakeholders, and the issue of the mechanism of profit allocation is also an obstacle.
- Vietnam is unique in that the forest area has been increasing on a national scale. Other donors than Japan focus on REDD plus activities in the regions where deforestation and forest degradation are advancing, not the regions where the forest area is increasing. Under these circumstances, some issues that need to be addressed have been found, such as how to handle the sinks in the regions where the forest area and carbon stocks are increasing, or how to demarcate from the existing mechanism (A/R CDM, etc.).

Key points of the proposed approach:

- The experience of a small-scale A/R CDM project that JICA conducted in the past shows that the land ownership system in Vietnam is a big obstacle to the implementation of REDD plus. When implementing REDD plus, it needs to discuss how to allocate profits in advance. Therefore, it is important to actively participate in national-level discussion regarding how to deal with the land ownership system, while seeking cooperation with UN-REDD.
- As the Vietnamese government intends to carry out afforestation not as a REDD plus activity but as an A/R CDM project, there is a possibility that REDD plus projects, which focus on afforestation, will not be approved by the government (which means credits cannot be issued). Therefore, and also from the perspective of promoting cooperation with private-sector enterprises, it is important to initiate coordination with the Vietnamese government in advance.

5.3.3 Competition and cooperation with other donors

Current state (problems, etc.):

- In Vietnam, where the UN-REDD program has been carried out since 2009 with the support of Norway, UN-REDD plays the central role in REDD plus. The activities of UN-REDD are now in the readiness stage, and there is no plan to supply credits to the voluntary market (and obtain VCS certification), even in the medium to long term. However, when the UN-REDD program moves on to Phase 2 and as pilot projects are conducted in six provinces (Figure 28) (on a budget of 100 million USD), it will be highly likely that the supply of credits to the voluntary market will be considered under the influence of the international trends.

- Fauna & Flora International (FFI), an international NGO, has already started activities to obtain VCS certification and is seeking cooperation with private companies from Japan. If a preceding case like this leads to the issuance of credits, its impact on the projects of other donors and NGOs will be significant.

Key points of the proposed approach:

- When discussing REDD plus in Vietnam, UN-REDD cannot be excluded both in terms of support to the central government and project-based demonstrating activities. Although the JICA office is not willing to cooperate with UN-REDD at present, now may be the time to seek cooperation and coordination with UN-REDD in order to restrict UN-REDD from taking the initiative in REDD plus and also to make JICA's activities recognized by VNFOREST and other government agencies of Vietnam.

5.3.4 Safeguards

Current state (problems, etc.):

- Given the complicated forest ownership system in Vietnam, how to allocate profits to local residents is an important issue. In Lam Dong Province and Son La Province, an experimental system of "Payment for Forest Environment Service" (PFES) is introduced. Although this system serves as one example, it has the problem of not making payment in an effective manner so far, and no direction has been set in the medium to long term.

Important points of the proposed approach:

- The system of forest ownership in Vietnam is complicated with ownership and the right of use entangled with each other. Therefore, if credits are generated through the implementation of REDD plus, a big question will arise as to how to allocate profits, and no specific solution to this issue has been proposed so far. First, it will be necessary to review the PFES system to identify its merits and demerits.
- The forest ownership system is particularly complicated in the northern region, and this situation unique to the northern region should be taken into account when conducting demonstration activities.

5.3.5 Miscellaneous

- JICA is planning to implement a pilot project of REDD plus in Dien Bien Province in the northwest to avoid overlapping with the implementation site of Phase 2 of UN-REDD. However, there has been no significant change in the forest area in Dien Bien Province, and as a result, a technical problem arose such that it is difficult to set the reference level for credit issuance. In addition, considering that the land area available for afforestation is limited and as VNFOREST does not consider afforestation as a REDD plus activity, the acquisition of credits cannot be expected in the medium to long term.
- In Dien Bien Province, the introduction of PFES is planned along with a dam development plan. If introduced, the PFES is likely to be a sufficient incentive for forest conservation, and therefore, it will become difficult to demonstrate that REDD plus implementation is additional to the reduction of deforestation and forest degradation, a situation which presents another problem.

- In the northern part of Vietnam, Sumitomo Forestry plans to conduct a FS program of REDD plus.[70] Including such activities of private companies, in order for JICA and private-sector enterprises to cooperate in implementing REDD plus, a strategic structure will be necessary.

[70] For FY2110, “New Mechanism Feasibility Study for REDD+ through Revegetation at Denuded Lands and Woody Biomass-based Power Generation in Son La Province, Vietnam” is planned to be conducted by Sumitomo Forestry Co., Ltd. as a FS program of the Ministry of the Environment. The final report of this research project will mention this case as an example of cooperation with JICA.

6. Results of the field research (Papua New Guinea)

6.1 State of forests

Papua New Guinea (PNG) has the largest tropical rainforest in Oceania. However, according to the report of Researchers of the University of Papua New Guinea, the forest area decreased from 38 million hectares (82% of the total land area) in 1972 to 33 million hectares (71% of the total land area) in 2002, and the continuous decrease and degradation of forest resources is recognized as a major issue (this data is almost the same as the data of the FAO shown in Table 25). The main causes of the change in the state of forests are logging (48.2%), subsistence farming (45.6%) and, which together contribute to over 90% of forest decrease.

Table 25 General information of PNG's forest[71]

Indicators	1990	2000	2005	2010
Land area[72] (1,000ha)	-	-	-	45,286
Forest area (1,000ha)	31,523	30,133	29,437	28,726
Deforestation area (1,000ha/yr) (): Mean deforestation ratio		139 (0.45%)	139 (0.47%)	142 (0.49%)
Primary Forest (1,000ha)				26,210
Other naturally regenerated forest (1,000ha)				2,430
Planted Forest (1,000ha)	63	82	92	86
Carbon stock in living forest biomass (Mt)	2,537	2,423	2,365	2,306

The PNG government outlined its vision for the future in its Vision 2050 report. The report lists climate change policies as one of its 7 pillars. These climate change policies are centered on the reduction of GHG emissions through the construction of REDD plus mechanisms and related funding. Furthermore, in March 2010 the PNG cabinet approved the "Forestry and Climate Change Policy Framework for Action 2009-2015", which sets down key policy with regards to forestry sector climate change. This document specifies how traditional landowners can receive benefits from the implementation of REDD plus projects on land that traditionally belongs to them.

Though PNG has the largest tropical forest area in the world, it is constantly threatened by concerns with regards to deforestation. The forest ecosystem also provides a living for local residents across PNG and provides a wide-range of ecological benefits such as food, fiber (for clothes, etc.), building materials, carbon fixation, river basin preservation, water conservation/preservation, the prevention of soil erosion and the maintenance of soil productivity. Despite this, there is still a lot of uncertainty with regards to forest cover data, the accumulation of commercial timber, the speed of deforestation and the drivers of deforestation. These topics are being hotly debated among NGO's and researchers concerned with how PNG's forest cover is changing.

The Papua New Guinea Forest Authority (PNGFA) estimates that approximately 60% of the total area of

[71] FAO 2010. Global Forest Resources Assessment 2010. avairable at web site of (http://www.fao.org/forestry/fra/fra2010/en/)
[72] Including Inland Water

the country is covered by natural forests, of which 52% are considered production forests (for timber and other products), and 48% are for conservation (not for timber extraction).

6.2 Situation of REDD plus

Papua New Guinea (PNG) is one of the nine pilot countries of the UN-REDD Programme's initial phase. The proposed National Joint Programme (NJP) for PNG builds on the 2009 draft NJP which has received approval in principle by the Policy Board. It aims to support the Government of PNG to further progress its efforts towards REDD readiness and places heavy emphasis on the development of a Measurement, Reporting and Verification (MRV) system for PNG, as an important complement to PNG's domestic climate-change efforts.

PNG has taken a global lead in seeking to combat climate change, particularly by proposing measures to realize the carbon abatement opportunity offered by preserving and sustainably managing tropical forests, i.e. by introducing the concept of REDD plus into international negotiations. Domestically, PNG is also committed to mitigating greenhouse gas emissions. The country's Vision 2050 envisages low-carbon economic development, aiming to increase per capita GDP by a factor of three by 2030, while maintaining an aspirational goal of net carbon neutrality by 2050.

In order to achieve this goal, PNG has made significant efforts in the past year to further the domestic agenda on climate change:

- The newly established Office of Climate Change and Development (OCCD) provides the institutional structure to coordinate action against climate change in PNG. It supports the whole-of-government National Climate Change Committee in steering climate change policy and reports directly to the Prime Minister.
- A Climate-Compatible Development Strategy (CCDS) sets out the strategic direction for PNG's action against climate change domestically, with a strong focus on REDD plus. The main elements of the draft CCDS and the process for multi-stakeholder consultation have been endorsed by the National Executive Council (NEC). The CCDS is envisaged to be finalized and released in its final form later this year.
- An Interim Action Plan sets out the immediate priorities for action over the next 6-12 months while the CCDS is being finalized.

This progress frames the efforts over the coming months and years, during which PNG will move to implement climate-compatible development, specifically including the following actions related to REDD plus readiness:

- Mitigation from REDD plus activities need to be incorporated into national development planning and policies will have to be reviewed to ensure they are climate-compatible.
- Further research and analysis will be required in some areas, such as developing a comprehensive greenhouse gas inventory.
- REDD readiness activities will require the development of new capacities in the institutions involved.
- Pilot programs will be required to enhance the knowledge base, identify the most effective institutional arrangements, test the new policies and build capacity.

- A large-scale consultation exercise will need to be launched to involve local communities and landowners in critical elements of the strategy, especially arrangements for benefit sharing.
- A Measurement, Reporting and Verification (MRV) system, fund disbursement mechanism and benefit-sharing models that ensure benefits accrue equitably to resource owners will have to be developed.

6.2.1 REDD plus taskforce

In PNG, the OCCD has been established to have jurisdiction over REDD plus. However, under the present circumstances it does not seem to cooperate in an effective manner with PNG Forest Authority, which supervises the forestry sector, and the national structure does not function in an effective manner (Figure 29).

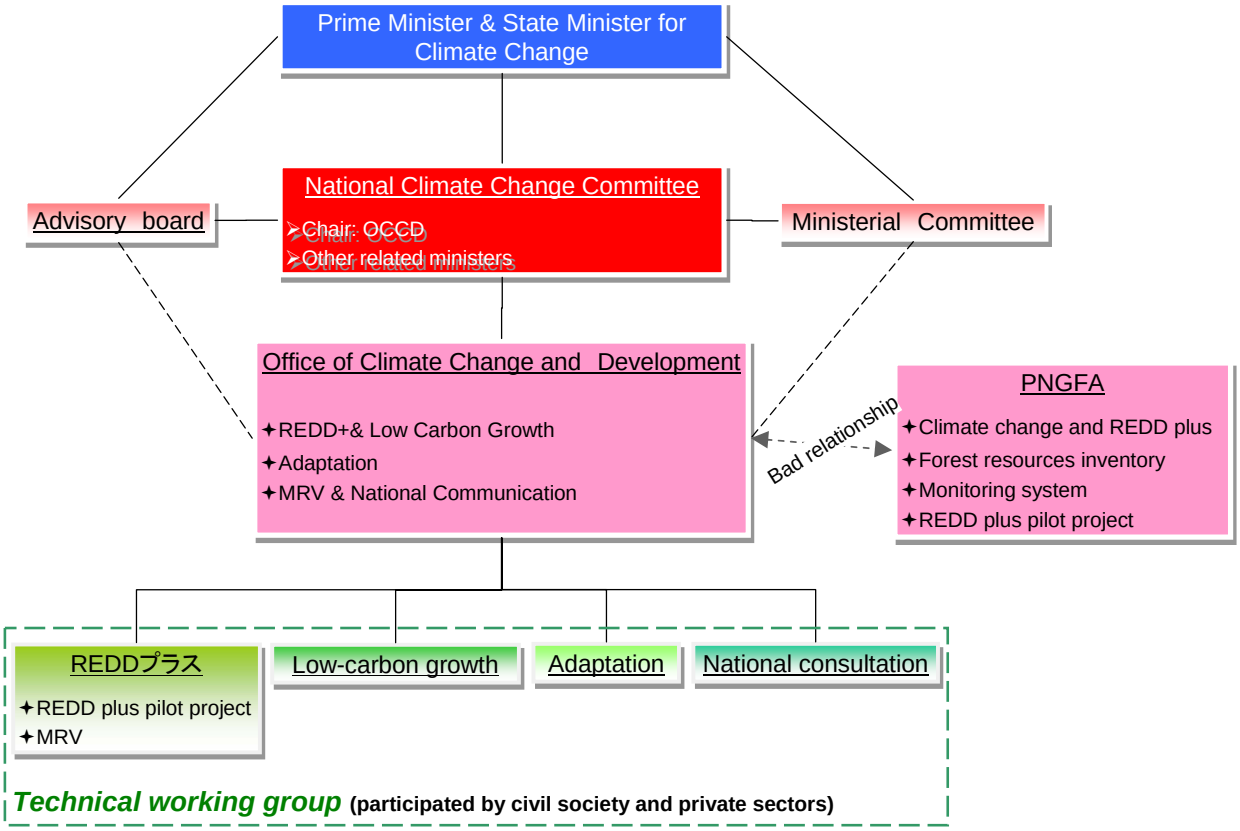


Figure 29 REDD plus implementation structure[73]

Several government agencies are planned to be involved in the organization concerned with REDD plus, as is shown in Figure 29.

[73] Prepared based on the UN-REDD PNG National Programme (prepared on March 28, 2011), submitted by PNG to UN-REDD, as well as on interviews conducted during field research

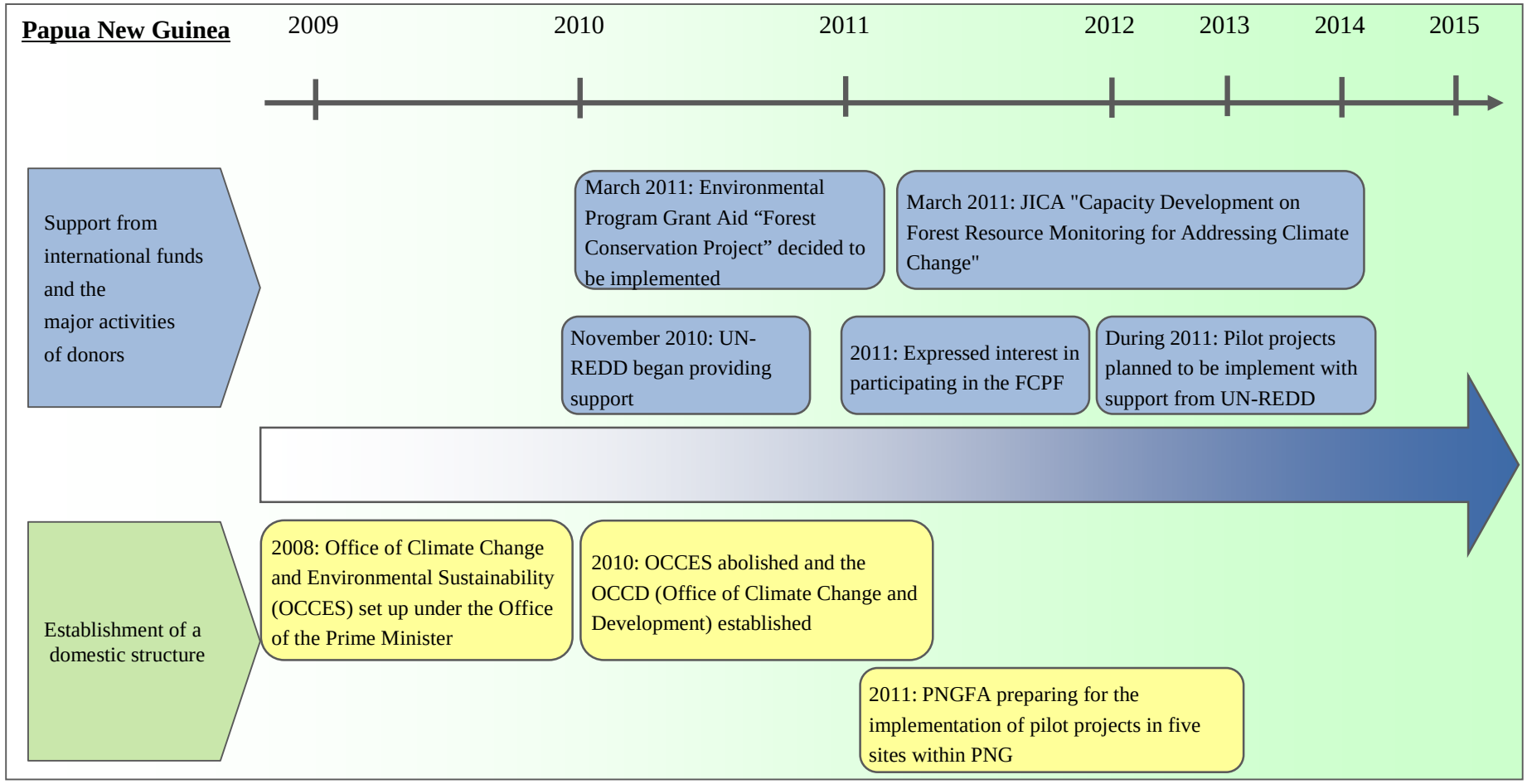


Figure 30 Course of progress toward REDD plus implementation in PNG

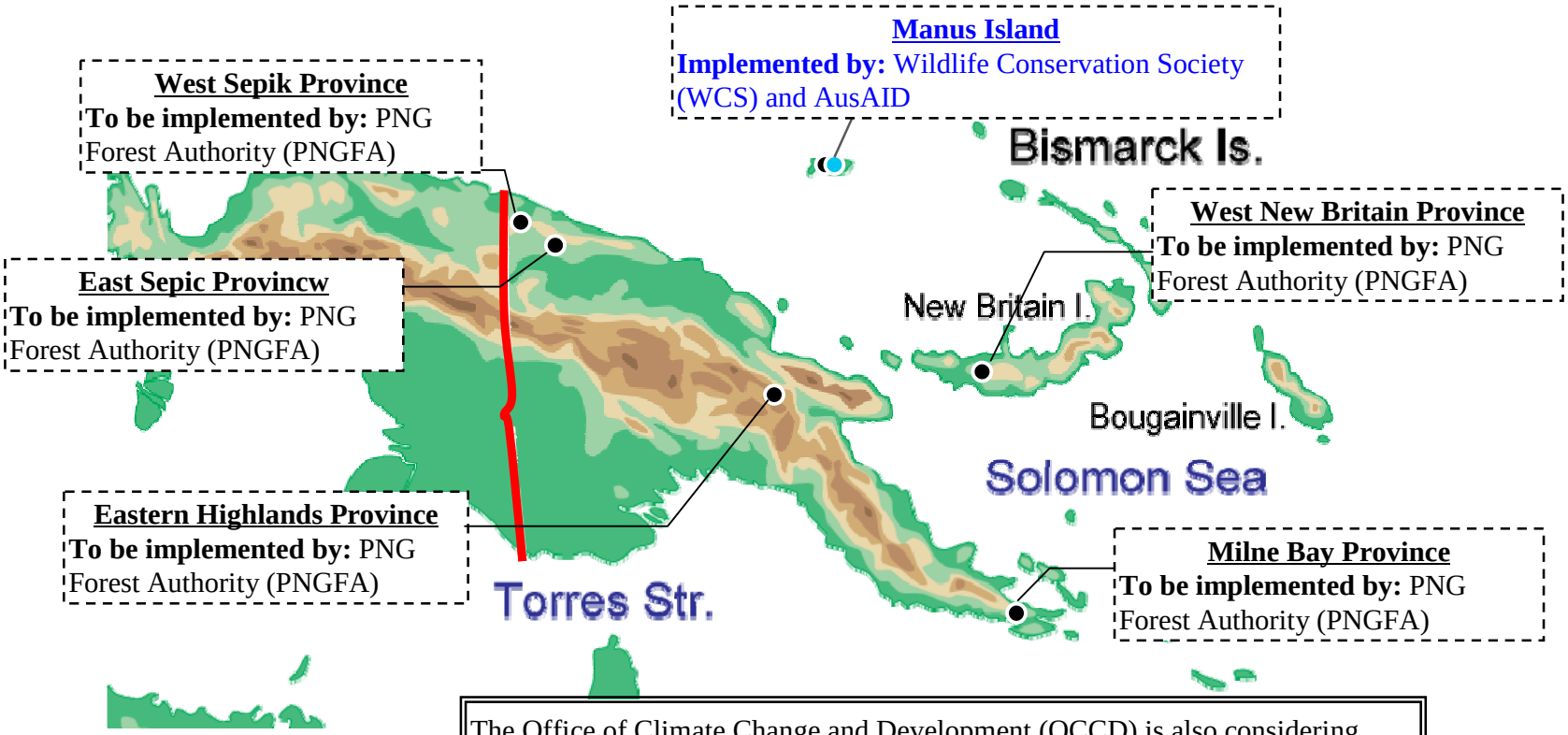


Figure 31 REDD plus demonstration activities in PNG

※ The PNG has decided not to supply carbon credits generated by REDD plus to the voluntary market, and only the supply of credits to the compliance market is discussed at the national level (supply of credits is scheduled for 2020). Therefore, no REDD plus-related activities led by the donors from foreign countries is implemented. Figure 31 above outlines the demonstration activities for REDD plus planned by PNG Forest Authority for the purpose of accumulating experience

Table 26 Outline of demonstration activities in PNG

Donor	Implementation site	Outline of activities
PNG Forest Authority (PNGFA)	Sandaun Province	Discussing activities to implement REDD plus on a trial basis
	East Sepik Province	
	Eastern Highlands Province	Carrying out afforestation in grasslands and increasing carbon stocks through forest management on a trial basis
	West New Britain Province	Planning to carry out an increase in carbon stocks in second-growth forests and an increase in carbon stocks through afforestation/reforestation on a trial basis
	Milne Bay Province	Aiming to reduce emissions by introducing reduced-impact logging; JICA research team visited here
WCS and AusAID	Manus Island	Not aiming to issue credits by REDD plus implementation, but by accumulating experience in the readiness for REDD plus by implementing forest conservation activities
The Office of Climate Change and Development (OCCD) is also considering implementing pilot projects separately from those by the PNGFA with support from UN-REDD. At present, pilot projects are planned to be implemented in four sites.		

6.3 Key points of proposed approach to REDD plus in Papua New Guinea

6.3.1 REDD plus implementation structure and forms of cooperation

Current state (problems, etc.):

- For the implementation of REDD plus, the Office of Climate Change and Development (OCCD) was newly established. However, it does not fully cooperate with the PNG Forest Authority (PNGFA), which has been supervising the forestry sector, and a comprehensive approach has not yet been promoted.[74]
- The PNG government is quite distinctive in that it has decided not to supply carbon credits generated by REDD plus to the voluntary market (as clearly stated in the official documents of the government). Such a stance results in the problem of land ownership that occurred in 2009[75]. Partly due to the impact of this problem, discussions are made at present on the supply of credits to the compliance credits on the national basis. The issuance of credits (national-based) is scheduled for 2020 at the earliest. On the other hand, when other countries begin to issue credits to the voluntary market, PNG will be influenced by such trends and is highly likely to shift its stance to implement similar activities.

Key points of the proposed approach:

- UN-REDD considers the OCCD a counterpart. However, it is uncertain whether the OCCD will continue working as the focal point for REDD plus in the medium to long term or continue the contract with the consulting company for the work related to REDD plus. Therefore, JICA needs to pay attention to the moves of the PNG government not in the short term but also in the medium to

[74] The main operations of the OCCD are carried out by the staff dispatched from a consulting company in the U.S. Such organizational operation by the staff dispatched from outside seems to be an obstacle to cooperating with the PNGFA.

[75] In PNG, it occurred two years ago that land managers in the Western Province and the Highlands Province all together invested in a bogus investment company and paid money, which was overlooked by the OCCES (Office of Climate Change and Environmental Sustainability), the predecessor of the OCCD.

long term. In this regard, as well, it is necessary to keep an eye on the movements within the PNG government when promoting the bilateral offset credit mechanism proposed by Japan.

- The activities for supplying credits to the voluntary market will be strongly affected by the pilot projects (demonstration activities) that are planned to be implemented by the PNGFA and the OCCD. In other words, if the pilot projects smoothly move on to issuing credits, interest in the voluntary market will be expected to grow in PNG. It needs to be considered whether JICA provides support to more than one pilot project and, if doing so, which projects it supports, with an eye to acquiring credits base on the bilateral offset credit mechanism in the future.
- Given that the PNGFA says that the door is open to private companies, etc., for support to the pilot projects, there is room for JICA to consider providing support in cooperation with private-sector enterprises.

6.3.2 Safety of the project before the issuance of credits

Current state (problems, etc.):

- As mentioned above, PNG is different from the other target countries of the field research in that demonstration activities aiming to trade credits on the voluntary market have not been promoted on a full scale, and therefore, little knowledge has been accumulated through "learning by doing." Therefore, theory-led discussions have been made based on activities in other countries and the resolution document of the UNFCCC. It is predicted that when implementing the pilot projects planned for the future, many problems would occur both in the technical aspect (setting of boundaries, etc.) and the policy aspect (allocation of income from credits, etc.).
- With regard to REDD plus implementation capacity, considering the significant difference between the central government and regional governments in the forest governance capacity and the unique land ownership structure in PNG,[76] it is unknown whether the measures against leakage will be taken in an effective manner.

Key points of the proposed approach:

- First, it is important to correctly understand the REDD plus strategy of PNG and to be deeply involved in the roadmap to the issuance of credits. To this end, it is important to participate in the pilot projects and to work with the PNG government in "learning by doing."
- Unlike in Brazil, the National Development Bank of PNG is not involved in the implementation of REDD plus.[77] For the full-scale implementation of REDD plus projects, support for fund management will be also important. It will be important in implementing REDD plus projects in PNG in the medium to long term, in order to develop infrastructure that will not reduce the willingness of investment by private companies through, for example, the development investment and loan scheme

[76] A total of 60–70% of the land area is covered by forest, of which 97% is owned by residents and only 3% is managed by the national and provincial governments.

[77] Under the present system, the OCCD manages all the funds.

that JICA used to provide.[78]

6.3.3 Competition and cooperation with other donors

Current state (problems, etc.):

- Looking at support from donors other than JICA, support for forest monitoring by Australia (the OCCD is the counterpart) has not reported any noticeable achievement (no activity has been conducted) several years after support was expressed. The support from Australia was initially supposed to overlap with JICA's technical cooperation project, etc. (the PNGFA is the counterpart), but such situation has not occurred so far.
- OCCD also has plan to conduct pilot project supported by UN-REDD. Such activities will be related to issuance of credit, therefore it will be necessary to coordinate with OCCD in the near future.

Key points of the proposed approach:

- With respect to climate change measures, AusAid has been continuously providing support. If Japan and PNG enter into a bilateral agreement, coordination with the contents of the agreement between PNG and AusAid would be an important point.
- At present, support from UN-REDD is about to be conducted on a full scale, and pilot projects are planned by the OCCD and the PNGFA, respectively (Figure 31). It is fully expected that donors and NGOs from other countries will participate in these projects, and there it is important for JICA to be actively involved. Supposing that JICA will implement REDD plus activities in cooperation with NGOs, etc., the first choice will be the WCS because it has a good relationship with JICA and the transparency of the project funds will be ensured (WCS is also looking for a financial partner).

6.3.4 MRV system

Current state (problems, etc.):

- In PNG, forest monitoring on the national level is supported by JICA and the Japanese government. Such support is expected to form the foundation for becoming deeply involved in the roadmap to the implementation of REDD plus in PNG in the medium to long term, thus bringing great advantage in implementing REDD plus on a full scale.

Key points of the proposed approach:

- For the future, it will be important to actively promote activities in an effective manner by top-down and bottom-up approaches, i.e., support to the central government and support to pilot projects in provincial areas, by actively helping address the issue of consistency between the pilot projects planned by the OCCD and those by the PNGFA.
- The JICA project currently underway provides a good opportunity to discuss how to address the issue of consistency regarding the national-based and project-based estimation of emissions and sinks, which is a major issue for REDD plus. It is expected to accomplish good achievement that will also provide

[78] The development investment and loan system is JICA's scheme originally designed to provide funds to companies for investment in natural forest development or large-scale afforestation projects involving high risk, for which technologies have not yet been established. In this case, carbon credits, not timber, are the products.

input to the REDD Research and Development Center of Japan and to the UNFCCC, etc.

6.3.5 Safeguards

Current state (problems, etc.):

- In PNG, as mentioned above, people have strong claim for land ownership, and how to involve local residents/indigenous peoples in the implementation of REDD plus is a big question. Regarding the allocation of the credits to be issued by REDD plus projects, in particular, it is important to develop a strategy with the participation of local residents/indigenous peoples, which should be carried out cautiously while promoting cooperation with the central government.

Key points of the proposed approach:

- With respect to the profit allocation system in PNG, the fund management method of the preceding case of the Sovereign Wealth Fund (SWF) (accumulating profits from oil trading in foreign currency and putting its management gain into the national budget) is an example worth studying. Although the SWF has not been fully operated, the process of system construction, etc., may be helpful in considering the method of allocating profits from REDD plus.

6.3.6 Miscellaneous

- The PNGFA intends to implement a pilot project (aimed at emissions reduction by the introduction of reduced-impact logging) in Milne Bay Province, where the JICA research team visited. These regions are waiting for support from donors, and JICA or private companies, etc., can conduct a feasibility study for REDD plus (the expected credit amount and methodologies need to be considered separately). JICA's involvement in pilot projects would be good for acquiring credits based on the bilateral offset credit mechanism to be established in the future.
- In order to provide support to immature forest monitoring (surface study) in PNG, sending senior volunteers would be an effective option. If JICA provides support for pilot projects, it will be important to prepare a manual of forest monitoring, and in this regard, the use of senior volunteers who have expertise will be effective.

7. Results of the field research (Peru)

7.1 State of forests

The area of tropical forests in Peru is the second largest in South America and the fourth largest in the world, and implementing REDD plus is important for Peru from the perspective of the conservation of tropical forests. Although the deforestation rate in Peru has not been officially announced since 2000, the statistics of FAO show a relatively slow decline in the forest coverage rate, from 54.8% (70,156,000 hectares) in 1990 to 53.1% (67,992,000 hectares) in 2010 (Table 27). Major causes of deforestation mentioned in the Second Country Reports of the UNFCCC are grazing by immigrants from the Andes region/small land owners and slash-and-burn agriculture, the government policy of encouraging settlement in forests as a measure to expand cleared land for agriculture from 1940 to 1970, road construction in tropical forests, increases in population in tropical forests, and poverty.

Table 27 General information of Peru's forest[79]

Indicators	1990	2000	2005	2010	Future plan
Land area[80] (1,000ha)	-	-	-	128,000	
Forest area (1,000ha)	70,156	69,213	68,742	67,992	Zero deforestation and conservation of 54 Mha forest
Deforestation area (1,000ha/yr) (): Mean deforestation ratio		94 （0.14%）	94 （0.14%）	150 （0.22%）	
Primary Forest (1,000ha)				60,178	
Other naturally regenerated forest (1,000ha)				6,821	
Planted Forest (1,000ha)	263	715	754	993	
Carbon stock in living forest biomass (Mt)	8,831	8,713	8,654	8,560	

The Peruvian government has announced plans to cut the reduction rate of virgin forests to 0% by 2021 and preserve 54 million ha of forests. These targets are both deeply connected to the implementation of REDD plus. Peru also has a decentralized system of government, with the forestry sector possessing: (1) the authority to grant rights related to natural resources under the jurisdiction of regional governments; (2) rights and responsibilities with regards to the formulation of regional zoning policy; (3) the right to propose conservation frameworks in nature reserves. As a result, the implementation of REDD plus is also deeply connected to the effective running of these kinds of forest management systems.

7.2 Situation of REDD plus

Peru is Latin America's second-largest country in terms of tropical forest area, after Brazil, and ranks fourth worldwide. Peru is known as a country with low rates of deforestation. However, the threats of deforestation and forest degradation have been increasing rapidly in recent years as a consequence of

79 FAO 2010. Global Forest Resources Assessment 2010. available at web site of (http://www.fao.org/forestry/fra/fra2010/en/)
80 Including Inland Water

accelerated economic growth. Changes in land use and practices in the forestry sector are the principal causes of GHG emissions in the country. Although the Peruvian Government, supported by civil society, is promoting and implementing efforts at national, regional and local levels to recover and conserve forest ecosystems, these efforts still require greater technical and financial support to reach the desired targets, especially considering that the current rate of deforestation is expected to increase in the coming decades due to investment plans and the pressure of illicit activities that imply deforestation and forest degradation.

The advent and launch of the REDD plus mechanism constitutes a challenge, added to Peru's status as a developing country that has begun an accelerated process of economic growth, of increased social well-being and rapid poverty reduction. Therefore, it is necessary to provide the country with schemes and standards of institutionally that ensure the proper management of REDD plus in order to make way for fluid implementation without jeopardizing environmental sustainability and social equality in the process to which it should contribute.

The national institutional framework for managing REDD plus is determined by the ongoing processes of institutional reorganization. The creation of the Ministry of Environment (Ministerio de Ambiente, MINAM), the proposed new Forestry and Wildlife Law, the creation of the National Forest Conservation Program for the Mitigation of Climate Change (PNCBMCC[81]) and the formation of forums for dialogue on REDD plus at national and regional levels constitute a great opportunity to integrate the subject of REDD plus in an institutional framework that is in the process of being developed and consolidated. In parallel, the substantial process of decentralization and transfer of duties to sub-national (regional and local) governments that is underway in Peru, is in line with a process of modernization and regulatory adjustment of the national role of the State and the National Government. Likewise, an agency is needed to coordinate REDD, with a sufficient level of influence in terms of coordinating among different sectors and levels of the State and with civil society. For this purpose, the Forests and REDD plus Coordination Agency (Órgano de Coordinación de Bosques y REDD plus: OCBR[82]) has been created; it is assigned to MINAM but answers, through an Intersectoral Management Committee, to the Office of the President of the Council of Ministers (Presidencia del Consejo de Ministros, PCM). This agency receives technical and strategic training from the REDD Technical Group, which conducts ongoing consultations with the Peru REDD Roundtable.

Peru has set a voluntary objective of substantially reducing its GHG emissions, as a contribution to global efforts to mitigate climate change. The National Government, under the leadership of the Ministry of Environment, has created the National Forest Conservation Program for the Mitigation of Climate Change (PNCBMCC), which combines and links the abovementioned priorities with national coverage and international financial support. REDD plus is considered one of the pillars with the PNCBMCC's greatest potential. With this, the aim is to link activities that are being implementing separately in the country with the objective of addressing the direct causes of deforestation and forest degradation through an approach that promotes public and private investment in forest carbon trade.

Peru has unique geographic features, varying levels of capacity and experience, a complex situation of

81 **P**rograma **N**acional de **C**onservación de **B**osques para la **M**itigación del **C**ambio **C**limáticoの略

82 **Ó**rgano de **C**oordinación de **B**osques y **R**EDD+の略

causes and effects of deforestation and forest degradation that affect the adoption of REDD plus strategy options. This, added to the progress of REDD plus projects at local level and the State decentralization process, point toward the need for a flexible, gradual focus, working with a nested approach at all three levels (i. Readiness; ii. implementation, and iii. payment for results), whose precise implementation should be developed during the Readiness phase.

7.2.1 REDD plus implementation structure

In Peru, the coordination agency for REDD plus (OCBR) has been established as the REDD implementation body. The OCBR is an operating organization to which the Management Committee, participated in by ministries concerned, including the Ministry of the Environment and the Ministry of Agriculture, provides directions based on the decided policy. The Management Committee is expected to receive advice from the World Bank and donors from foreign countries, as well as opinions from the Indigenous REDD Roundtable. Thus, a system is being constructed in which REDD plus stakeholders in general participate Figure 20).

For the future, the establishment of the REDD Taskforce as an independent organization to implement REDD plus is considered, though the REDD Taskforce has not been officially organized as of the time of the field research.

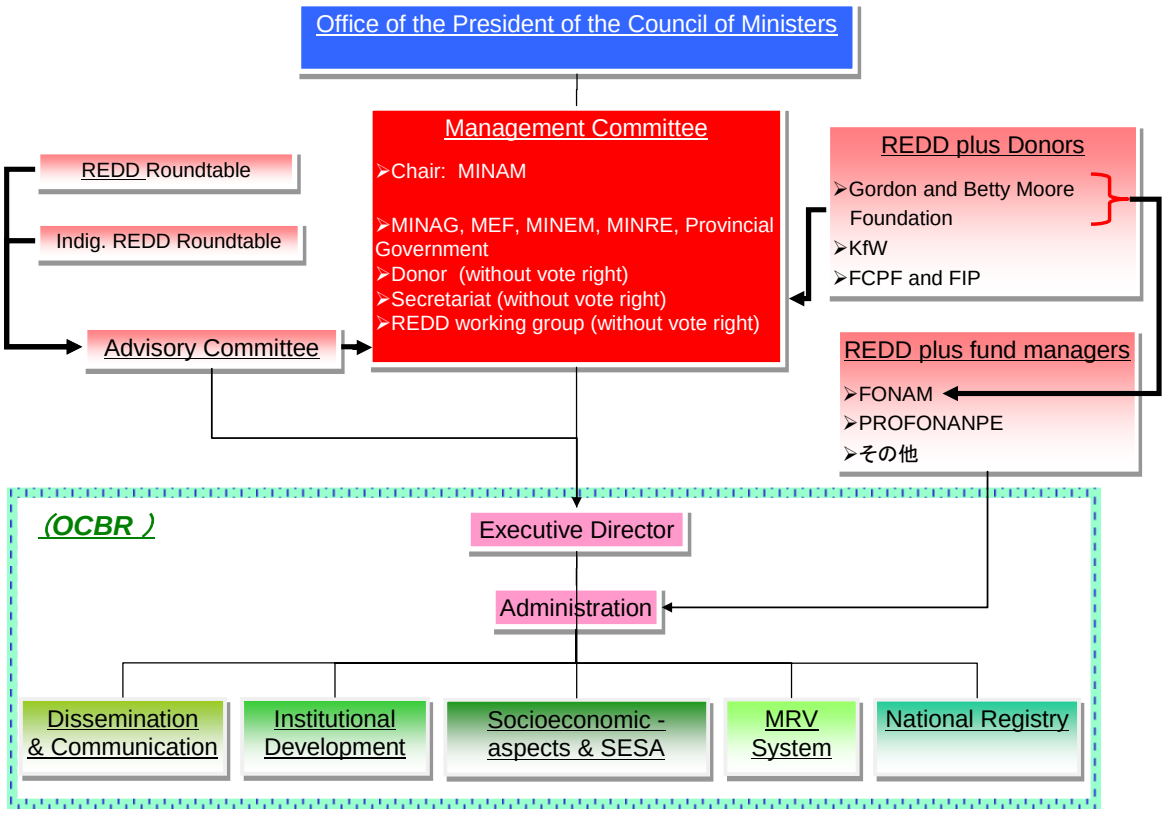


Figure 32 Organization structure of the REDD plus taskforce[83]

[83] Prepared based on the R-PP submitted by the Peruvian government to the World Bank (submitted on March 7, 2011) and on interviews conducted during field research

Several government agencies are planned to be involved in the organization concerned with REDD Plus, as is shown in Figure 32. Their planned roles are shown in Table 28.

Table 28 Government agencies involved in the REDD plus implementation body and their roles[84]

Organizations	Role for REDD plus
Office of the President of the Council of Ministers: PCM	・ Coordinating and monitoring the national and sectoral policies of the Executive Authority
Supervisory Agency for Forest Resources: OSINFOR	・ Supervising the rights granted under the framework of the Forestry and Wildlife Law, as well as environmental services
Ministry of Environment: MINAM	・ Focal point for climate change ・ Policies for the strategic development of natural resources ・ design and establishment of compensation schemes or payments for environmental services, which include the REDD plus mechanism ・ Proposing the technical aspects related to REDD plus ・ Coordinating with relevant national and sub-national (regional), public and private agencies
Ministry of Agriculture: MMINAG	・ Planning, management and supervision of forest and wildlife resources ・ Coordinating with regional forestry and wildlife authorities the effective implementation of these policies, including forestry investments
Ministry of Economy and Finance: MEF	・ Estimating and constantly updating the economic impact of climate change on the country ・ Identifying and promoting the financial tools and economic instruments needed to finance urgent adaptation activities ・ Monitoring the nation's progress in achieving the voluntary national mitigation target
Ministry of Foreign Relations: MINRE	・ Political focal point for the UNFCCC
Ministry of Energy and Mines: MINEM	・ Formulates and evaluates policies of national scope on the sustainable development of mining−energy activities

[84] Prepared based on the R-PP submitted by the Peruvian government to the World Bank (submitted on March 7, 2011) and on interviews conducted during field research

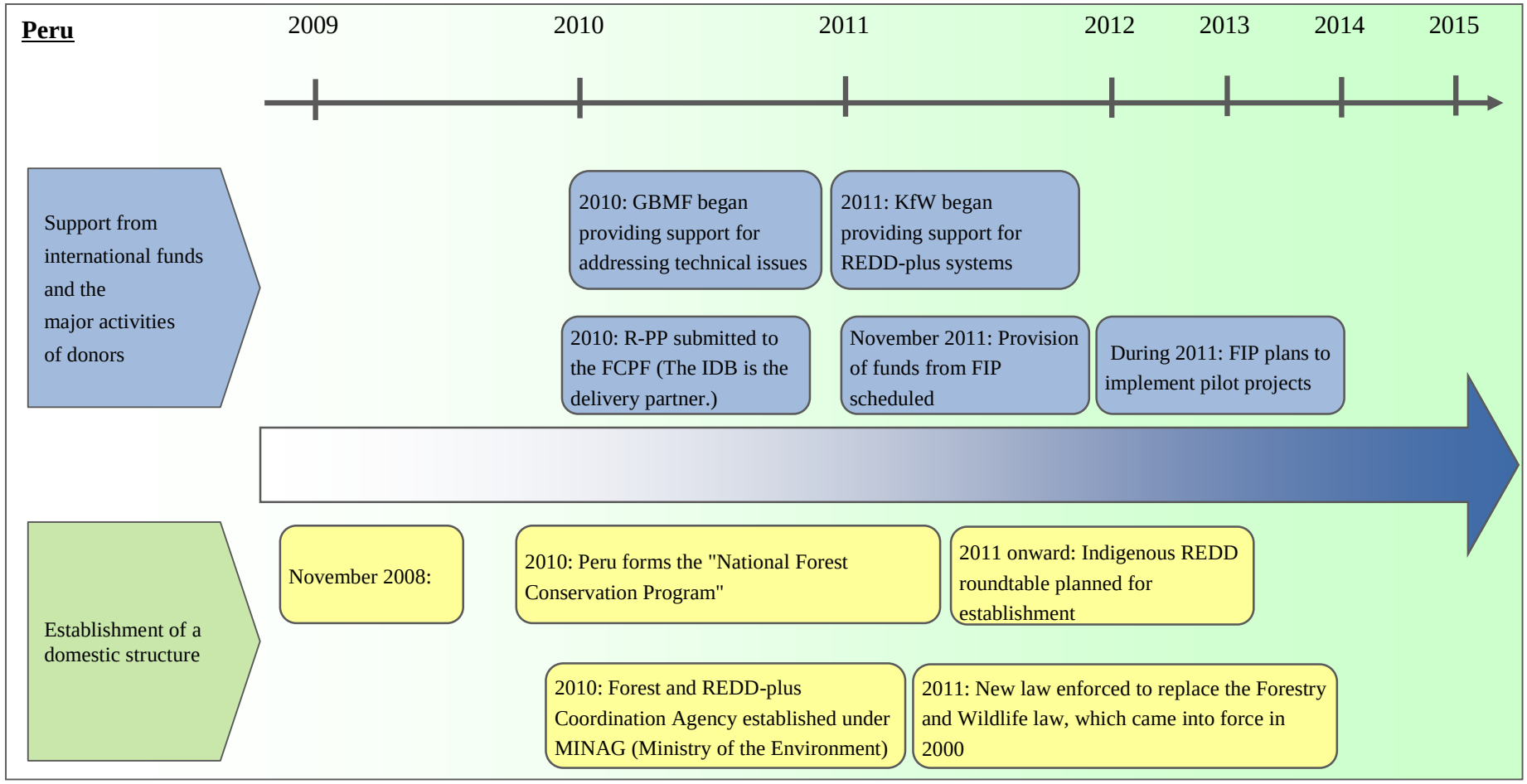
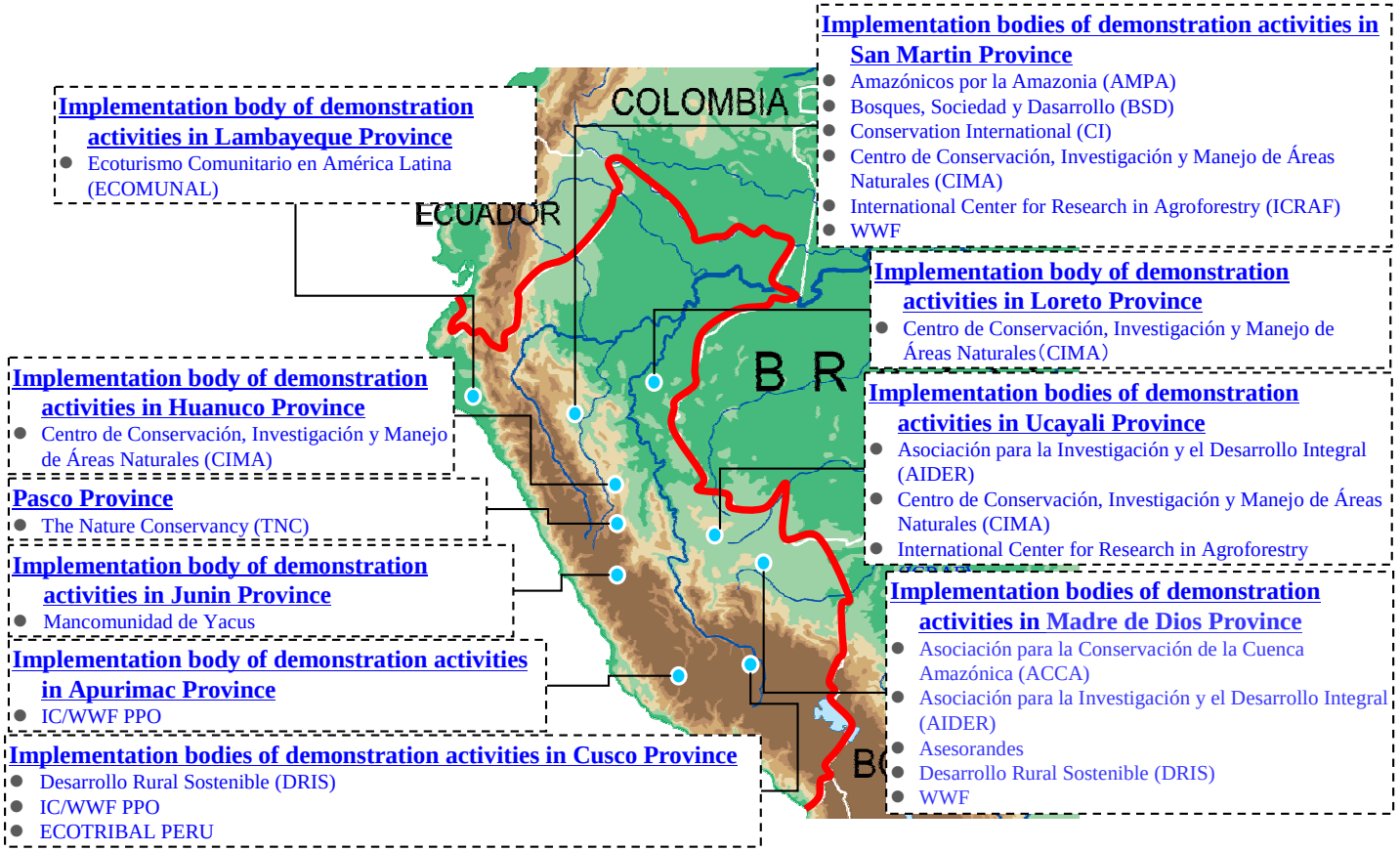


Figure 33 Course of progress toward REDD plus implementation in Peru



Source: Interviews and the materials of MINAM

* Chose the projects implemented by major donors for which a PDD is planned to be prepared for CCB Standards or VCS certification

Figure 34 REDD plus demonstration activities in Peru

- The REDD plus approach in Peru is characteristic in that the provincial governments take the initiative reflecting the decentralization policy.
- For example, some provinces (particularly San Martin Province and Madre de Dios Province) already launched pilot projects for REDD plus in cooperation with NGOs, etc., ahead of other provinces.

7.3 Key points of the proposed approach to REDD plus in Peru

7.3.1 REDD plus implementation structure and forms of cooperation

Current state (problems, etc.):

- In the implementation of REDD plus, the Ministry of Agriculture (MINAG) and the Ministry of the Environment (MINAM) play the central role, though they are not in a good relationship with each other. They have not reached agreement on the authorities of the independent body concerned with REDD plus, causing delay in the establishment of the REDD Taskforce.[85]
- At present, most of the donors including international organizations such as the World Bank and NGOs consider MINAM as the counterpart. However, MINAG has been the competent authority for the forestry management system in Peru, and therefore, donors cannot promote forest policy practically without cooperating with MINAG.
- One of the major characteristics of the governance system in Peru is decentralization. Some provinces (particularly San Martin Province and Madre de Dios Province) have already started demonstration activities ahead of other provinces, and other donors such as NGOs are strengthening ties with the provincial government. In the demonstration activities that international NGOs such as the WWF are conducting in cooperation with provincial governments, a lot of experience has been accumulated, and this experience will likely form the basis for the REDD plus strategy of Peru for the future.

Key points of the proposed approach:

- At present, the Peruvian government does not recognize Japan's support for which negotiations are under way with MINAG as ODA (400,000 USD) as being closely related to REDD plus. In view of this situation, it is important to have the central government recognize that Japan is supporting REDD plus implementation in the first place and to demonstrate the significance of JICA as an organization supporting REDD plus. In doing so, strengthening cooperation with MINAM, which is recognized as the counterpart by the World Bank, etc., will be important because it will help promote information exchange among donors.
- In Peru, regional governments and NGOs are taking the lead in the implementation of REDD plus, and active cooperation (information exchange) with these governments and organizations will be important. For example, a project of the Ministry of Economy, Trade and Industry was conducted by Mitsubishi Corporation in San Martin Province in FY2010. By collaborating in such a project, JICA needs to build relationships with provincial governments.

7.3.2 Safety of the project before the issuance of credits

Current state (problems, etc.):

- In implementing REDD plus, there were no problems found unique to Peru. However, with many donors (mainly NGOs) implementing a number of (project-based) demonstration activities (Figure 34),

[85] As of the time of the field research, MINAM was responsible for matters concerning climate change, and MINAG had jurisdiction over agriculture and forestry in general. However, as the forestry service agency (SERFOR) is established in MINAG under the Forestry and Wildlife Act, enacted in May 2011, the REDD plus implementation structure has not been clearly defined. It should be carefully observed how the new structure is formed after the change of government by about the end of July.

it is definitely difficult to locate a new site for REDD plus.

Key points of the proposed approach:

- When project-based activities develop into sub-national/national-based activities in the future, cooperation among donors or cooperation between the central and regional governments will be indispensable. A major problem in Peru is that such cooperation has not been promoted so far. It is necessary to consider the form of support that JICA should provide from a comprehensive perspective while discussing the technical issues of individual projects, while at the same time keeping an eye on the REDD plus strategy of Peru. For that purpose, first of all, close ties must be built both with the central government and regional governments (or leading NGOs). Not only technical support in forest monitoring, etc., but also policy support for REDD plus will be important.
- When considering short-term and medium- to long-term REDD plus implementation and support, experiences in Laos and Cambodia, where JICA takes the lead in its activities, will be helpful.

7.3.3 Competition and cooperation with other donors

Current state (problem, etc.):

- In Peru, the programs of the World Bank (Forest Carbon Partnership Facility [FCPF] and the Forest Investment Programme [FIP]) [86] are implemented practically through the Inter-American Development Bank (Banco Interamericano de Desarrollo: BID), which provide support to REDD plus strategy at the national level in cooperation with MINAM. These international organizations lead the discussion on REDD plus strategy or the roadmap to REDD plus.
- On the other hand, the experiences of the demonstration activities conducted by international NGOs, such as CI and the WWF, etc., in cooperation with regional governments (provincial governments) seem to play a significant role in facilitating REDD plus in Peru. In particular, the pioneering projects implemented by the governments of San Martine and other provinces have great impact on the central government.

Key points of the proposed approach:

- The selection of the site of the pilot project for FIP (Phase 2 approach) is now underway. In order for JICA to provide support keeping pace with other donors that have already been actively involved, coordination with FIP and other projects (avoiding overlapping, cooperating, etc.) needs to be considered. The first thing that JICA should do in this regard is to exchange information actively with the World Bank and the BID, which have strong influence over the central government.
- In Peru, where dozens of demonstration activities are being implemented by NGOs, etc.), it is difficult to find a new site appropriate for REDD plus. Many NGOs that suffer from gaps between the motivation of the personnel for REDD plus and the financial situation have a strong expectation for Japan to provide financial support. Given these circumstances, cooperation with NGOs should be actively sought in implementing REDD plus.[87] In doing so, it is important to select NGOs that can

[86] Financial assistance of 3.6 million USD is planned for the readiness phase of FCPF, with 40-50 million USD available for the second phase of FIP.

[87] The form of cooperation with NGOs in Cambodia may provide a helpful example.

work together on the medium to long term with an eye to issuing credits in the future, and also it will be necessary to ensure consistency with the REDD plus strategy of JICA or Japan.[88]

7.3.4 MRV system

Current state (problems, etc.):

- At present, JICA's plan to provide support for forest monitoring under ODA (400,000 USD) is recognized by only some officials concerned with REDD plus from the Peruvian government, and how it will lead to support for REDD plus is not understood (it is not recognized as being related to REDD plus).
- Regarding the MRV system supported by other donors, it is unclear how the central and provisional governments of Peru think and what kinds of problems exist concerning consistency with the forest monitoring system in Peru, etc.

Key points of the proposed approach:

- First, when JICA provides support for an MRV, it needs to be clearly stated that the support is related to REDD plus through a Memorandum of Understanding (MoU), etc. (Doing so will change how JICA is mentioned in the FCPF R-PP, etc., to be prepared by the Peruvian government.) JICA needs to have the government and other donors recognize that it is supporting REDD plus and it should establish the basis for cooperation, etc., for the demonstration activities to be conducted in the future.
- Second, considering the present situation in Peru where other donors are already ahead, an MRV system incompatible with the preceding projects is expected to go wrong in the medium to long term. Therefore, it is necessary to propose a MRV system that integrates the preceding projects, and in this regard, information exchange and cooperation with other donors will be important.

7.3.5 Safeguards

Current state (problems, etc.):

- In Peru, taking advantage of the implementation of REDD plus, local residents/indigenous peoples are demanding the reform of the land ownership system, which is a potential social issue. When implementing REDD plus, the project will not succeed in the medium to long term without paying adequate attention to this aspect.

Key points of the proposed approach:

- It is important to address coordination with local residents/indigenous peoples from a medium- to long-term perspective, and in this respect there is a limit to what JICA can do alone. Therefore, a comprehensive approach is needed, including cooperation with other donors (including NGOs) and provincial governments.

[88] For example, the WWF is against the implementation of REDD plus based on the market mechanism. Careful consideration should be given whether it is possible to cooperate with the organizations in alignment with the strategy of Japan.

7.3.6 Miscellaneous

- In medium developed countries like Peru, it would be possible to provide loan assistance for REDD plus activities and receive repayment in carbon credits. Regarding this system, the Peruvian government expressed concern over the risk of fluctuation in the price of carbon credits on the market. However, considering that some countries have already allocated loan assistance to the FIP, the possibility remains that it will be adopted in the future.

Chapter 6 Proposed Approaches to REDD plus

1. Proposed approaches to REDD plus to be implemented by Japan

As it stands now, it is difficult to predict what the international framework for climate change measures will be for 2013 and onward. Whatever it will be like, mitigation measures such as REDD plus will remain important, and mitigation measures need to be implemented through every framework available.

As mentioned earlier[89], Japan does not support the mere extension of the Kyoto Protocol as mitigation measures for 2013 and beyond. However, it maintains the stance that it will take mitigation measures for 2013 and beyond, and adheres to the goal of cutting GHG emissions by 25% from the level of 1990 by 2020.

Under these circumstances, Japan proposes the bilateral offset credit mechanism as a mitigation measure for 2020 and onward. Depending on the development of international negotiations, mitigation measures based on the bilateral offset credit mechanism may play a central role in 2013 and onward (Figure 35).

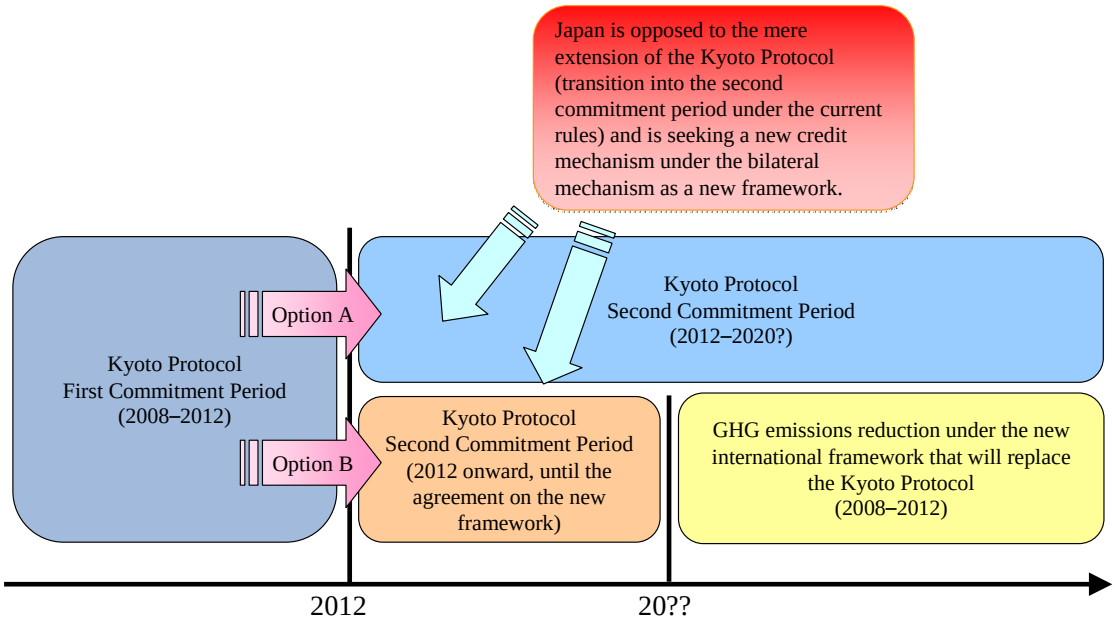


Figure 35 Options for climate change measures for 2013 and beyond, and the role of the bilateral offset credit mechanism

※ Option A: The Second Commitment Period of the Kyoto Protocol commences with the participation of the US and China. This involves the implementation of REDD plus initiatives based on the bilateral offset credit mechanism.

※ Option B: the bilateral offset credit mechanism are introduced from 2013 onwards as mitigation policies during the years until agreement is reached on a new framework. REDD plus initiatives will be implemented based on these mechanisms.

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

2. Future direction of REDD plus based on the bilateral offset credit mechanism

If the mitigations measures for 2013 and beyond are implemented based on the bilateral offset credit mechanism proposed by Japan, most measures will be project-based in the short term, taking into account the current situation, the extent of the area where projects can be implemented, and available funds, etc.

On the other hand, the framework of the UNFCCC clearly articulates that measures should be taken on a national or sub-national basis. Therefore, it is important to take into full consideration that, in the medium to long term, the broader-based REDD plus should be promoted as the mitigation activity.

For this reason, when examining REDD plus approach proposals, it will be necessary to focus comprehensively on both short-term project-level initiatives and mid- to long-term sub-national-level initiatives.

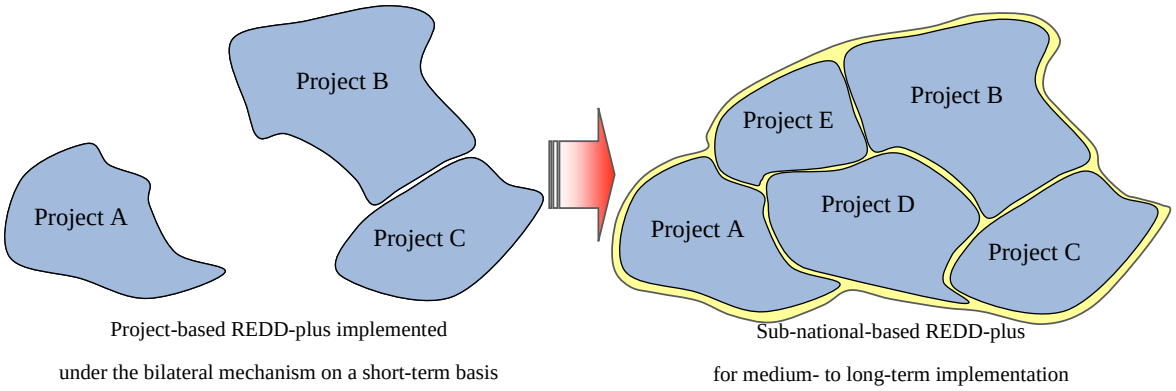


Figure 36 REDD plus implementation models: Short-term implementation under the bilateral offset credit mechanism and medium- to long-term implementation under the UNFCCC

※ Short-term project-based activities are integrated into sub-national-based activities.

※ Therefore, institutional and technical preparations such as the MRV system need to be in place in order to make it possible to acquire credits from REDD plus after the shift to sub-national-based activities.

3. Method of designing the proposed approaches

Based on the trends of REDD plus in Japan and abroad, a proposal has been made for the approaches by which JICA will implement REDD plus effectively and efficiently on a medium- to long-term basis, while cooperating with private-sector enterprises. In designing the proposed approaches, the attitude of private-sector enterprises toward REDD plus, the trends of developing countries where the field research was conducted, the moves of each donor, and JICA's resources were taken into full consideration. The proposed approaches have been studied by the domestic council of experts who have specialized knowledge regarding not only REDD plus but also forest conservation projects in developing countries.

3.1 Discussion about approach method in exploratory committee

When making a proposal for the approaches to REDD, a domestic council was set up where the proposed approaches to REDD plus were studied by the experts who have specialized knowledge regarding not only REDD plus but also forest conservation projects in developing countries in general. The members of the domestic council are listed in Table 29.

Table 29 Members for the exploratory committee

Candidate	Specialty
Dr. Yoshiyuki Kiyono (Forestry and Forest Products Research Institute)	Participates in numerous forest projects, particularly in Cambodia and other Southeast Asian countries; engaged in technical preparations for A/R CDM project implementation; highly knowledgeable in a broad range of forest project issues in developing countries.
Dr. Yasumasa Hirata (Forestry and Forest Products Research Institute)	Extensive knowledge of remote sensing monitoring technologies; deeply involved in the methods for achieving consistency and compatibility between national-level and project-specific monitoring methods to be deployed in developing countries.
Dr. Yasushi Ninomiya (Institute for Global Environmental Strategies)	Deeply involved in the development of carbon offset and J-VER systems at the Ministry of Environment; deep knowledge of emissions trading; in charge of UNFCCC negotiations; expected to provide views in light of international trends.
Ms. Mari Yoshitaka (Mitsubishi UFJ Morgan Stanley Securities)	Long-term involvement with and able to provide deep understanding of CDM/JI. Deeply involved in the bilateral offset credit mechanism of the Ministry of the Environment and the Ministry of Economy, Trade and Industry as a committee member of the REDD Research and Development Center, Forestry, and the Forest Products Research Institute.
Mr. Tsuyoshi Nakao (ERM Japan)	Deeply involved in the development of carbon offset and J-VER systems at the Ministry of the Environment; Long-term involvement and extensive familiarity with CDM/JI; deep knowledge of verification of GHG emission and REDD plus activities in Indonesia.
Dr. Naoki Matsuo (PEAR)	Long-term involvement and extensive familiarity with CDM/JI; conversant with project implementation in developing countries.

3.2 Supposed forms of cooperation between JICA and private-sector enterprises

When JICA and private companies, etc., cooperate in implementing and supporting REDD plus activities, the characteristics of REDD plus need to be taken into full consideration. The proposed implementation process illustrated below is designed based on the approach method mentioned in the resolution of COP 16

(Cancun Agreement) (the so called “phased approach”). In this proposal, the activities to be conducted by JICA and private companies, etc., are divided into Phase 1 to Phase 3 in the order of implementation items or in consecutive order (Figure 37).

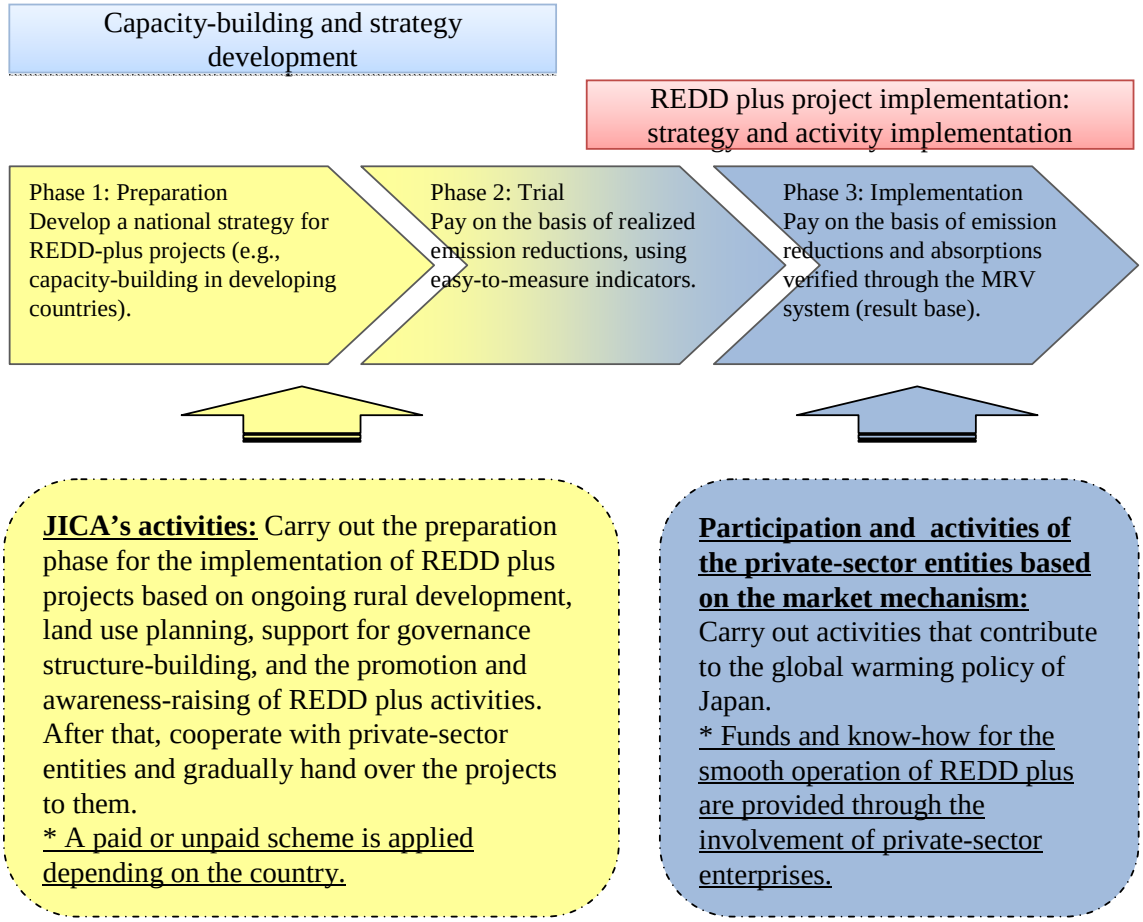


Figure 37 Concept of the implementation of REDD plus by JICA and private-sector enterprises based on the phased approach

※ This process involves a phase of capacity-building with international funds (including ODA) (Phase 1), which is expected to help avoid the concentration of investment in the countries that can issue carbon credits in a short period of time. It is also expected to ensure the fair allocation of the funds necessary for the implementation of REDD plus projects to other countries where medium- and long-term efforts are necessary.

※ In the implementation of A/R CDM projects, investment in capacity-building prior to project implementation was a heavy burden for private-sector enterprises. In addition, it was burdensome for private-sector enterprises to wait about 10 years before making profits from credits after the start of the project implementation.

※ The above process is expected to realize a well-balanced cooperation between JICA and private-sector enterprises utilizing such experience in A/R CDM projects.

4. Proposals for approaching REDD plus activities based on JICA projects

JICA has been involved in forest conservation projects in developing countries for several decades now and has built up knowledge, technologies and contacts in the area of developing-country forest conservation. There are no other institutions within Japan involved in the accumulation of knowledge related to developing-country forest conservation projects, so an effective and efficient strategy for private-sector enterprises would be to cooperate with JICA in REDD plus projects based on JICA's knowledge in this field.

In particular, it would be very difficult for private-sector enterprises to engage in REDD plus initiatives closely connected to land usage or the livelihood of local residents indigenous peoples based on the knowledge of the enterprises only. For this reason, it will be important for JICA to offer support during phases 1 and 2 (as outlined in Figure 30).

Figure 38 Fig. 37 below outlines the flow when examining REDD plus approach proposals aimed at the construction of a system for implementing REDD plus while utilizing JICA resources and cooperating with other organizations. This chapter examines REDD plus approach proposals based on this flow.

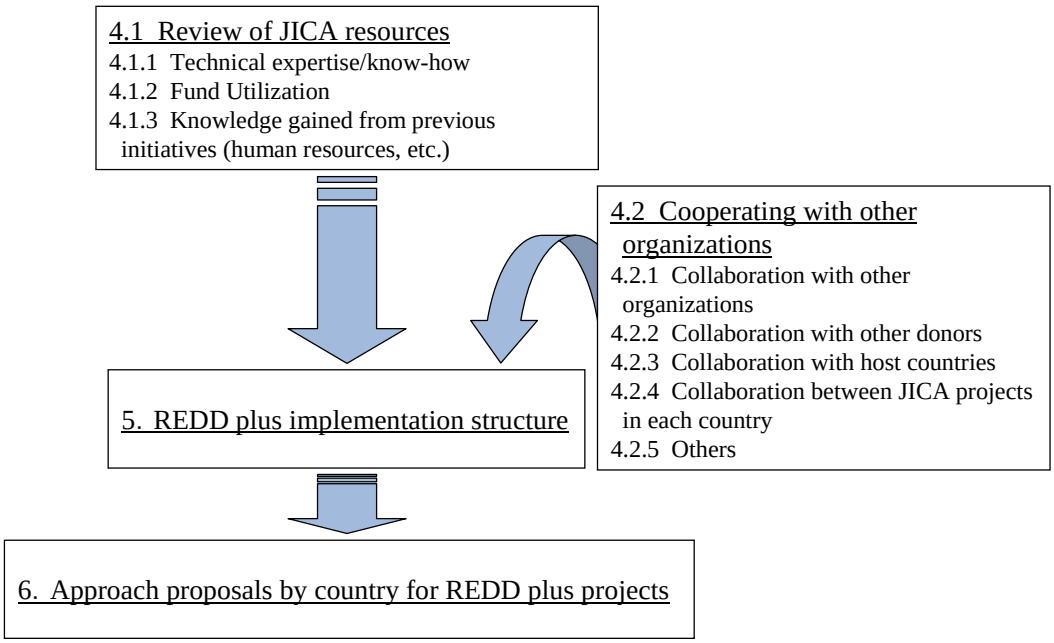


Figure 38 Flow for examining approach proposals for REDD plus initiatives based on JICA projects

4.1 Review of JICA resources

JICA's resources in the area of REDD plus implementation can be categorized overall as follows: (1) knowledge of forest conservation projects in developing countries; (2) technical expertise and know-how; and (3) networks. When implementing REDD plus initiatives, the support required of JICA in these three areas is outlined as follows.

4.1.1 Technical expertise/know-how

JICA has adopted as its Vision the goal of “Inclusive and Dynamic Development.” As part of this Vision, JICA has implemented a number of international cooperation projects in developing countries, covering a wide-range of areas. JICA has also defined environmental preservation as a key sector in the area of international cooperation. Between FY2000-2008, JICA cooperated in the following environmental projection projects: technical cooperation - 73 projects; grant aid - 9 projects; ODA loans - 28 projects.

JICA is also promoting a “Co-Benefit Approach” to the issue of climate change, one that supports the efforts of developing countries in the areas of sustainable development and climate change mitigation. The conservation of forests and other natural resources not only contributes to the fight against global warming, it also contributes in a wide variety of areas such as the preservation of biodiversity and support for the livelihood of local residents through water conservation and so on. JICA has adopted this Co-Benefit Approach and has implemented several projects that provide multiple functions through promotion of the sustainable usage of natural resources by local residents with the aims of (1) maintaining and sustaining the balance between the environment and development in developing countries and (2) preventing global warming.

The technical expertise and know-how accumulated by JICA in the field of forest conservation has been utilized in a number of different projects, such as projects directly related to REDD plus (compiling information related to forestry resources, gaining an understanding of carbon dynamics, etc.) or projects that contribute to the prevention of global warming through forest management and ecosystem conservation while involving local residents.

Either way, this technical expertise and know-how can be applied especially during phases 1 and 2 of REDD plus implementation.

Table 30 JICA projects related to REDD plus[90]

Project title	Detail
Indonesia: Forest Resources Management through Satellite Image Information	Indonesia is third in the world in terms of tropical forest coverage. Many rare species inhabit its 120 million hectares of forest. Indonesia's forests, however, are rapidly being lost due to wildfires and illegal logging. To address this problem, JICA is using information from the Japan Aerospace Exploration Agency's land observation satellite "ALOS"10 to help manage forest resources. The goal of the project is to promote sustainable forest management based on highly accurate and precise data.
Brazil: Utilization of ALOS Images to Support Protection of the Brazilian Amazon Forest and Combat against Illegal Deforestation	Ground monitoring of illegal logging is extremely difficult in the vast Amazon area, and that is why satellite monitoring comes into play in cracking down the illegal logging. In this project, JICA assists the development of system and capacity to utilize satellite date for monitoring illegal logging.
Ethiopia: Participatory Forest Management Project in Belete-Gera Regional Forest Priority Area	Forests in Ethiopia are dwindling, due to excessive logging and the conversion of forests into farmland. In the Belete-Gera Regional Forest Priority Area in the State of Oromia Region, where 174,000 hectares of valuable forest land is still preserved, JICA is cooperating with local authorities and with about 9,000 locals to achieve the dual goals of forest conservation and poverty reduction. In the project, JICA has assisted its partners to acquire certification for- and delivering of wild coffee that grows in region's natural forests. As a result, the coffee grown in the area successfully gained certification from an environmental NGO Rainforest Alliance. The certification has enabled the locals to sell the coffee at high prices, and to realize both forest conservation and the improvement of their livelihood.
Vietnam: The Study on Potential Forests and Land related to "Climate Change and Forests"	In commencing new climate change initiatives such as REDD plus, data-basing the basic information, including the distribution of target areas, is crucial. This project seeks to utilize satellite image analysis and field surveys to gather regional information on areas in which carbon stock enhancement projects will be implemented through A/R CDM, REDD plus, or other schemes. Collected data will then be used to create a distribution map of the surveyed areas and be widely shared, to be utilized for a broad range of climate change initiatives related to forest.
Laos: Participatory Land and Forest Management Project for Reducing Deforestation	Forest coverage of Laos has declined from about 70% in 1960's to 41.5% in 2002, mainly due to logging and conversion of forest to agriculture and other land use. The Government of Laos has begun implementing a programme to regain the forest coverage to the original state. To assist the government, JICA carried out a five-year forest management and community assistance project in six provinces in northern Laos beginning in 2004. The project resulted in the improvement of livelihood of the residents, and in the fewer incidents of slash-and-burn cultivation. The project continues to monitor the activities in the target villages, to establish a comprehensive deforestation prevention programme through participatory land- and forest management.

4.1.2 Fund Utilization

Apart from funds contributed to international institutions, the three bilateral aid schemes of Japan's ODA ("technical cooperation", loan assistance and "grant aid"") are all carried out under the umbrella of JICA. Most REDD plus-related projects currently being implemented in developing countries are based on this kind of bilateral aid. However, REDD plus places importance on the involvement of private-sector enterprises, so structures are being introduced to facilitate funding for overseas investments financing in relation to REDD plus.

[90] JICA 2010. REDD-Plus. Available at Web Site（http://www.jica.go.jp/publication/pamph/pdf/redd.pdf）

These funding structures are being introduced to support the projects of private-sector enterprises in developing nations, with the aim of promoting economic cooperation through support for private-sector activity. There are hopes that the various projects of private-sector enterprises in developing countries will have an economic impact in a number of ways, such as in (1) stimulating economic activity in these countries, (2) creating employment and (3) helping to raise living standards. Other expected benefits include foreign currency acquisition and technology transfers. However, projects in developing countries also face a number of obstacles, such as the high level of risk involved or low profit forecasts, so it is difficult for private-sector enterprises to obtain financing from private-sector financial institutions. The provision of financing for overseas investment provides two kinds of support to private-sector enterprises that seek to implement projects in developing countries under the aforementioned circumstances: "investment" and "loan financing". This is also known as private-sector activity assistance.

Table 31 Outline of Financing for Overseas Investment

Heading	Requirements for the Application of Overseas Investment Financing
Target Sector	・ Millennium Development Goals (MDGs) or poverty reduction goals ・ Infrastructure/growth acceleration ・ Measures to deal with climate change
Conditions that should be met for overseas investment financing projects	・ The project should accord with the development policies of the target country's government and should have a large development impact ・ The project should be achievable ・ It has been recognized that the project is not achievable using pre-existing loan financing or investment by financial institutions
Points to consider	・ JICA's new guidelines for environmental and social considerations are applicable. ・ Project evaluations and post-project evaluations are carried out for each project.

REDD plus involves forest conservation projects in developing countries and as such involve substantial risks for private-sector enterprises. JICA's financing of overseas investments has achieved results before now in the World Bank's Prototype Carbon Fund (PCF) [91], set up to enable players to acquire carbon credits from CDM projects, so there are sufficient reasons for believing that this financing will also cover REDD plus initiatives, which are expected to place a significant role in mitigation measures from 2013 onwards.

4.1.3 Knowledge gained from previous initiatives (human resources, etc.)

The results of field research outlined in Chapter 5 above also confirm the significant reliance of developing-country governments and Japanese private-sector enterprises on JICA-dispatched experts when it comes to ensuring the smooth running of activities aimed at the implementation of REDD plus projects. JICA has accumulated a lot of valuable knowledge in the area of forest conservation activities in developing nations. This knowledge will probably prove extremely useful to many private-sector

[91] The World Bank invests the financing obtained from equity participants (governments, corporations) into projects to reduce GHG emissions in developing countries or countries making the transition to a market economy, with GHG emission cuts obtained through the utilization of the Kyoto mechanism then being allocated to the equity participants.

enterprises as they seek to pursue activities without any problems. Our experts will share knowledge and provide guidance where necessary and it is important that they can play a significant role in the implementation of REDD plus projects that involve cooperation between JICA and private-sector enterprises.

However, JICA's experts are usually dispatched for several years at a time and there have been occasions when the accumulated knowledge or private-sector connections have been impaired following a rotation of experts. It will be important to form an organization that can resolve this problem of the impairment of human-resource-dependent functions. It will be advantageous to devise a structure that can ensure the efficient and effective implementation of REDD plus projects, including cooperation with other organizations, as mentioned below.

4.2 Cooperating with other organizations

From hereon, in order to facilitate effective bilateral mechanism with developing countries, it will be necessary to consider the characteristics of REDD plus (collaboration between ODA and private-sector funding) whilst also considering how to implement REDD plus programs under the umbrella of the bilateral offset credit mechanism. Listed below are some points regarding cooperative methods related to the implementation of REDD plus projects.

It will be important to implement REDD plus projects based on JICA's operations in cooperation with other related organizations. Figure 39 below outlines the problems related to the implementation of REDD plus initiatives as well as the direction JICA needs to take in order to enable smooth cooperation with other organizations.

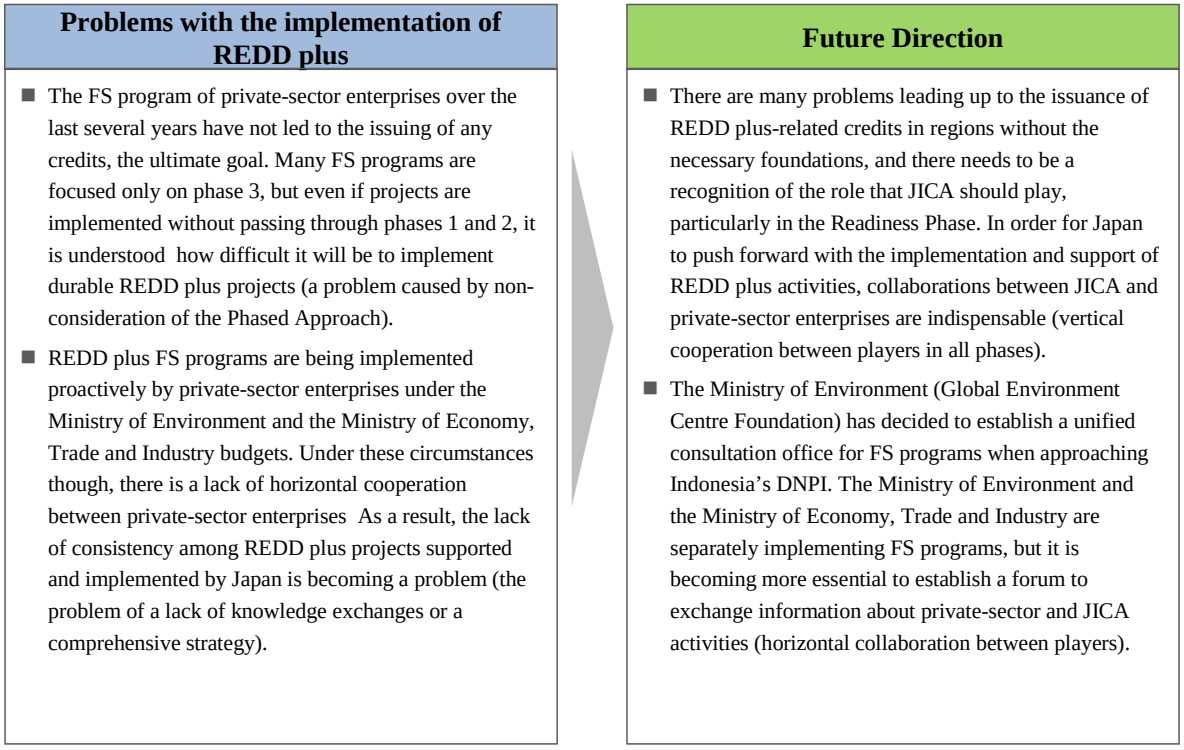


Figure 39 Problems with the implementation of REDD plus and direction JICA should take to ensure smooth cooperation with other organizations

Based on the "Future Direction" outlined above in Figure 39, this report will now discuss (1) "Collaboration with other organizations," (2) "Collaboration with other donors," (3) "Collaboration with host countries," and (4) "Collaboration between JICA projects in each country".

4.2.1 Collaboration with other organizations

Because of the great potential of REDD plus as a mitigation measure, other organizations are also becoming more active in related activities. In Japan, 11 REDD plus projects are being implemented as the feasibility study program of the Ministry of the Environment and the Ministry of Economy, Trade and Industry (Table 32)

Table 32 Feasibility studies for REDD plus conducted by the Ministry of Economy, Trade and Industry and the Ministry of the Environment

Agency that commissioned the project	Implementation body (commissioned company)	Project implementation site, etc.
Global Environment Centre Foundation (Ministry of the Environment)	Mitsubishi UFJ Research & Consulting Co., Ltd.	REDD+ in Central Kalimantan Province, Indonesia
	Kanematsu Corporation	REDD+ and bio-fuel production and utilization in Gorontalo Province, Indonesia
	Shimizu Corporation	Avoidance of peat aerobic degradation by peatland rewetting and rice husk-based power generation associated with rice production increase in Jambi Province, Indonesia
	Sumitomo Forestry, Co., Ltd.	REDD+ through revegetation at denuded lands and woody biomass-based power generation in Son La Province, Viet Nam
	Marubeni Corporation	REDD+ in Acre State, Brazil
	PricewaterhouseCoopers Aarata Sustainability Co., Ltd.	REDD+ through revegetation in derelict commercial forested land and the conversion of woody biomass tips into fuel for cement plants in Angola
	Conservation International Japan	REDD+ in Prey Long Area, Cambodia
Ministry of Economy, Trade and Industry	Marubeni Corporation	REDD plus in Central Kalimantan Province, Indonesia (establishment of safeguard methodology)
	Sumitomo Corporation	REDD plus in Central Kalimantan Province, Indonesia
	Japan Forest Technology Association	REDD plus in Cambodia
	YL Building Co., Ltd.	REDD plus in Sumatra, Indonesia (Mangrove forest conservation/afforestation project)

By sharing JICA's knowledge with private-sector enterprises, it will be possible to carry out initiatives in an efficient and effective manner from hereon. Furthermore, by utilizing JICA's overseas investment financing, it will be possible to incentivize participation in REDD plus projects that carry high levels of investment risk.

Also, there are many organizations within Japan who are vigorously engaged in REDD plus projects, such as REDD Research and Development Center, part of the Forestry and the Forest Products Research Institute, but the knowledge of these organizations is not being shared in an efficient way. It would be advisable to establish a system for cooperation from hereon.

4.2.2 Collaboration with other donors

The results of field research have revealed a tendency for donors from several countries to work together on activities aimed at the implementation of REDD plus projects in countries such as Laos. The efficiency of this kind of trend has been demonstrated. These kinds of collaborations between donors have not been observed in countries like Peru or Indonesia though. As a result, knowledge related to REDD plus projects does not get shared and there have been problems in implementing REDD plus projects that involve cooperation at a national level.

Furthermore, when implementing REDD plus projects, it will also be important to collaborate with NGOs and local consultants who have many years experience working in the local area. It will also be important to collaborate with stakeholders related to REDD plus projects. Developing-country governments will also need to implement REDD plus projects in an efficient manner by arranging conference with donors and working towards reaching some kind of consensus.

4.2.3 Collaboration with host countries

Moves to implement REDD plus projects in developing countries are gathering pace and it will be difficult to deal with these projects from hereon using existing structures, which are centered on technical support. For example, though participation is possible in the REDD plus strategy of the central government in Laos (taskforce), an insufficient understanding of REDD plus implementation structures in Indonesia[92] means it has not been possible to pursue initiatives swiftly in that country.

As outlined above, the governments of developing nations have also set up donor conferences to discuss REDD plus and they are pushing forward with activities aimed at reaching national consensus. JICA also need to build strong cooperative relationships in order to support developing-country REDD plus strategies in an appropriate manner.

4.2.4 Collaboration between JICA projects in each country

Though REDD plus activities differ according to each country's circumstances, they are all based on UNFCCC guidelines or on the guidelines of voluntary market-driven certification systems. Therefore, there are many points related to safeguards that should also be shared between countries, and this should not just be limited to technical matters such as the formulation of reference levels and the construction of MRV systems.

In addition to those countries targeted for field research as part of this investigation project, JICA has

[92] The counterpart in the forest conservation projects was the Department of Forestry, but other ministries were allocated a central role in REDD plus projects.

also carried out initiatives related to REDD plus in Africa and South America. It is thought that these kinds of horizontal collaborations between different projects will prove an effective strategy. At present, experts dispatched to each country do not have many opportunities to share information and there is no adequate system for facilitating such exchanges of information. The active promotion of information sharing and opinion exchanges from hereon will lead to more efficient activities related to the implementation of REDD plus projects.

4.2.5 Others

JICA has opened offices in many countries and is able to offer consultation services to any Japanese private-sector enterprises supporting or implementing REDD plus projects. JICA has also accumulated many years of experience and knowledge in the area of forest conservation projects in developing countries. Japan will be able to implement and support REDD plus projects in an efficient way through the integration of these kinds of JICA initiatives with (1) private-sector knowledge obtained during feasibility studies in developing countries, (2) knowledge obtained by universities and research institutes and (3) the role played by embassies who are collaborating with governmental organizations in developing countries.

5. REDD plus implementation structure

Based on (1) trends observed when private-sector enterprises have approached REDD plus projects heretofore, (2) JICA's accumulated results in the area of developing-country forest conservation projects and (3) other domestic and overseas trends in relation to REDD plus projects, it seems that Japan needs to put together a comprehensive system to facilitate the sharing of knowledge for the purpose of approaching REDD plus projects in an efficient and effective manner.

In order to do this, the first step should be the establishment of a central organization, a structure whereby other related organizations can support this central unit. The following table provides an image of the kind of national structure needed to implement and support REDD plus projects.

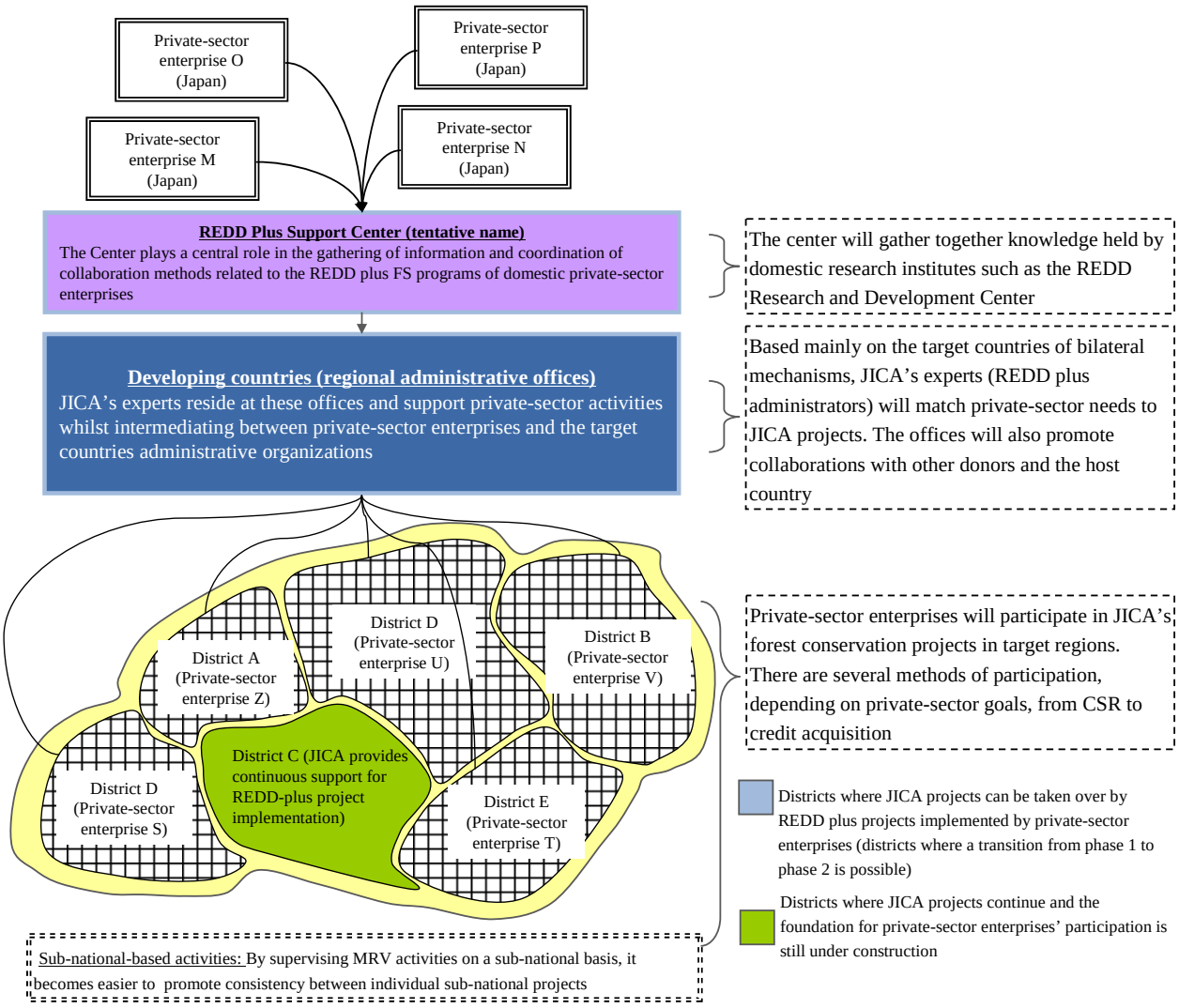


Figure 40 Proposed structure for promoting REDD plus projects

JICA specialists actually residing in developing nations will oversee the management of several projects when implementing REDD plus initiatives. In these cases though, it will be necessary to allocate REDD plus specialists to the local area while at the same time nurturing and developing expertise.

Furthermore, there will be need to be a One Stop Center within Japan for the purposes of implementing and supporting REDD plus activities, and this Center needs to cooperate closely and harmoniously with other organizations engaged in REDD plus activities (such as the REDD Research and Development Center). It will be important to take a comprehensive view of REDD plus when establishing the One Stop Center and leadership will be needed to gather together domestic knowledge and experience on the subject.

【The roles of JICA and private-sector enterprises when implementing REDD plus projects】

Based also on the views of the private-sector enterprises mentioned above in "Chapter 4: Moves of Private Enterprises, etc., Involved in REDD Plus Implementation", the most problematic aspect for private-sector enterprises is thought to be activities aiming at Readiness, a key phase in the implementation of REDD plus projects. It is particularly difficult to construct relations with developing-country governments over a short period of time, just as it is to create a system for collaborating with local residents/indigenous peoples, so it would be advisable for private-sector enterprises to adopt a phased approach in collaboration with JICA when implementing REDD plus projects.

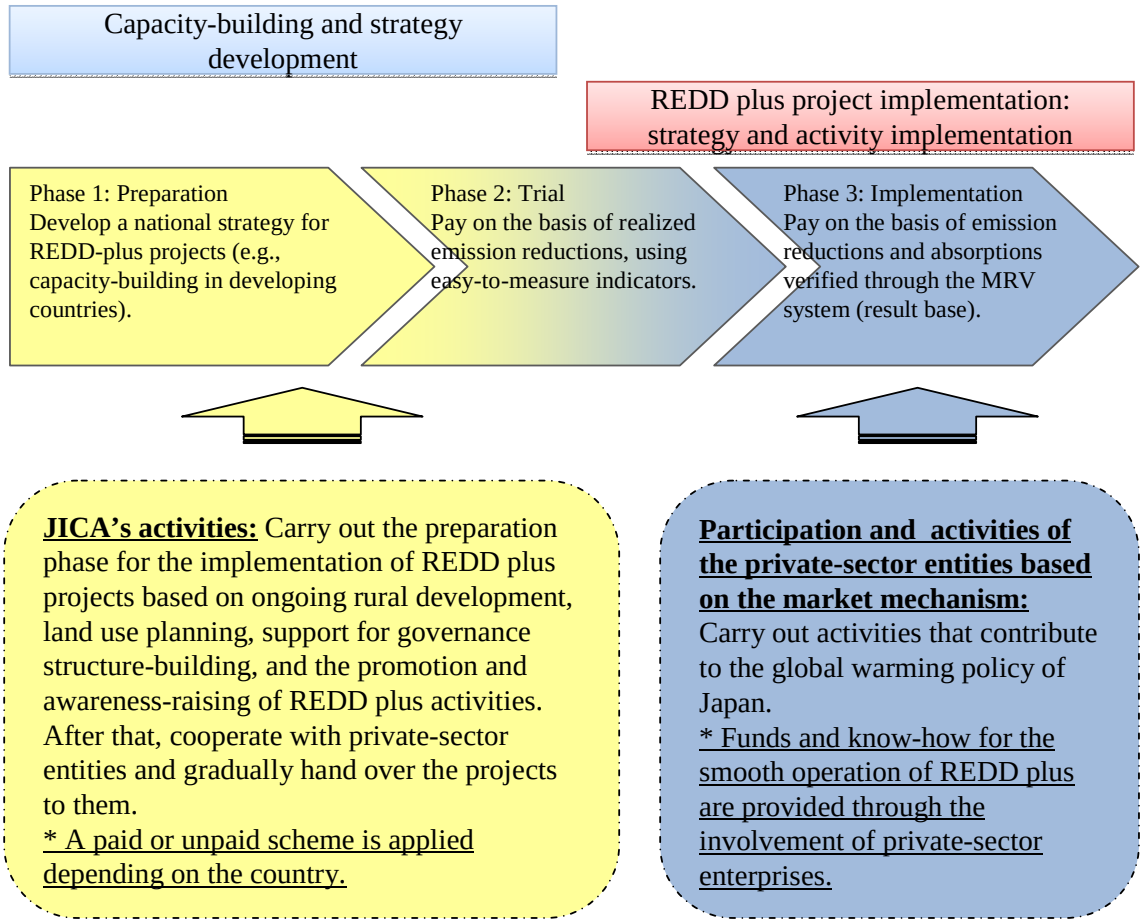


Figure 41 Concept of the implementation of REDD plus by JICA and private-sector enterprises based on the phased approach (*again*)

However, when implementing REDD plus projects related to forest conservation projects in developing countries, private-sector enterprises will also need to formulate a clear mid- to long-term implementation policy while at the same time aligning their REDD plus related goals with JICA policies.

For this reason, JICA can be expected to pursue a number of collaborative methods, depending on the policies of private-sector enterprises and so on (Table 36).

Table 33 Examples of collaborations with private-sector enterprises

Positioning of private companies	JICA's methods of collaboration
Private-sector enterprises with CSR goals	When collaborating with private-sector enterprises whose primary goal is CSR related, it will be favorable in many cases where the companies seek to collaborate in specific JICA projects related to preserving biodiversity, etc. rather than to gain credits (amounts in particular) generated by REDD plus projects. Therefore, JICA could seek a method of collaboration that fits in with the policies and goals of the private companies, etc.
Private-sector enterprises planning feasibility studies.	When conducting a feasibility study, it is first of all extremely important to choose the implementation site. Therefore, JICA could provide core material related to candidate sites (information about the region's residents or an overview of the area's forestry) and support the private-sector enterprises.
Private-sector enterprises involved in the concrete implementation of REDD plus projects	For private-sector enterprises who already have knowledge about REDD plus and who have already made adequate preparation for the implementation of REDD plus projects, JICA should adopt a collaborative method that carries on from JICA's own projects (based on a phased approach).

When implementing REDD plus activities, it will be necessary to form deeper cooperative ties with private-sector enterprises. It will be important to iron out any differences between JICA and private-sector viewpoints when undertaking REDD projects in the mid- to long-term. It will also be important to examine collaborative structures after gaining a clear understanding of private-sector viewpoints.

6. Approach proposals by country for REDD plus projects

In light of (1) observed trends of private-sector enterprises heretofore, (2) JICA's accumulated results and (3) other domestic and overseas trends in relation to REDD plus, the following REDD plus approach proposals have been formulated for each country based on the state of REDD plus activities in each country, as revealed in field research.

When putting together approach proposals, it is important to transition from short-term project-level activities to mid- to long-term sub-national-level activities. This should include sufficient consideration of technical issues (such as how to maintain consistent MRV systems).

For this reason, when examining REDD plus approach proposals, it will be necessary to focus comprehensively on both short-term project-level initiatives and mid- to long-term sub-national-level initiatives.

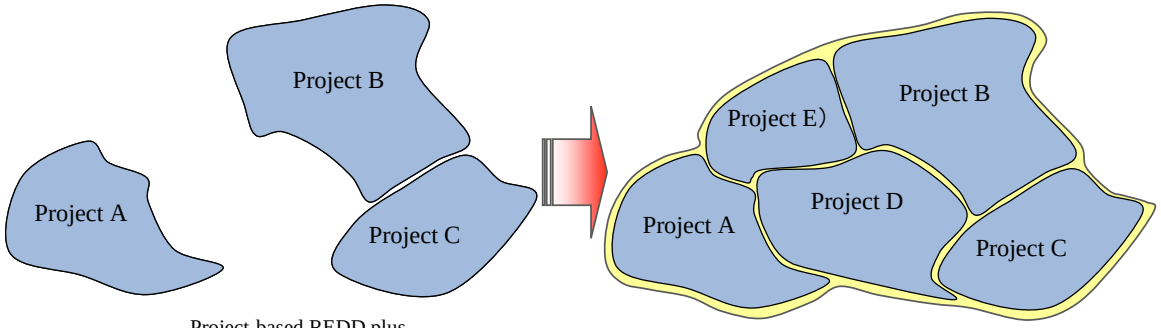


Figure 42 REDD plus implementation models: short-term implementation under the bilateral offset credit mechanism and medium- to long-term implementation under UNFCCC (*again*)

※ Short-term project-based activities are integrated into sub-national-based activities.

※ Therefore, institutional and technical preparations such as MRV system need to be in place in order to make it possible to acquire credits from REDD plus after the shift to sub-national-based activities.

When promoting REDD plus activities based on the implementation models established by Japan and with JICA/private-sector cooperation, a number of REDD plus approach proposals have been formulated for each of the countries discussed above in "Chapter 5: Results of Field Research". These approaches are outlined below.

6.1 Proposed approach to REDD plus in Cambodia

The status of REDD plus approaches in Cambodia are outlined below. This is based on the status of REDD plus related activities in Cambodia and the direction that Japan's REDD plus projects should take in the mid- to long-term.

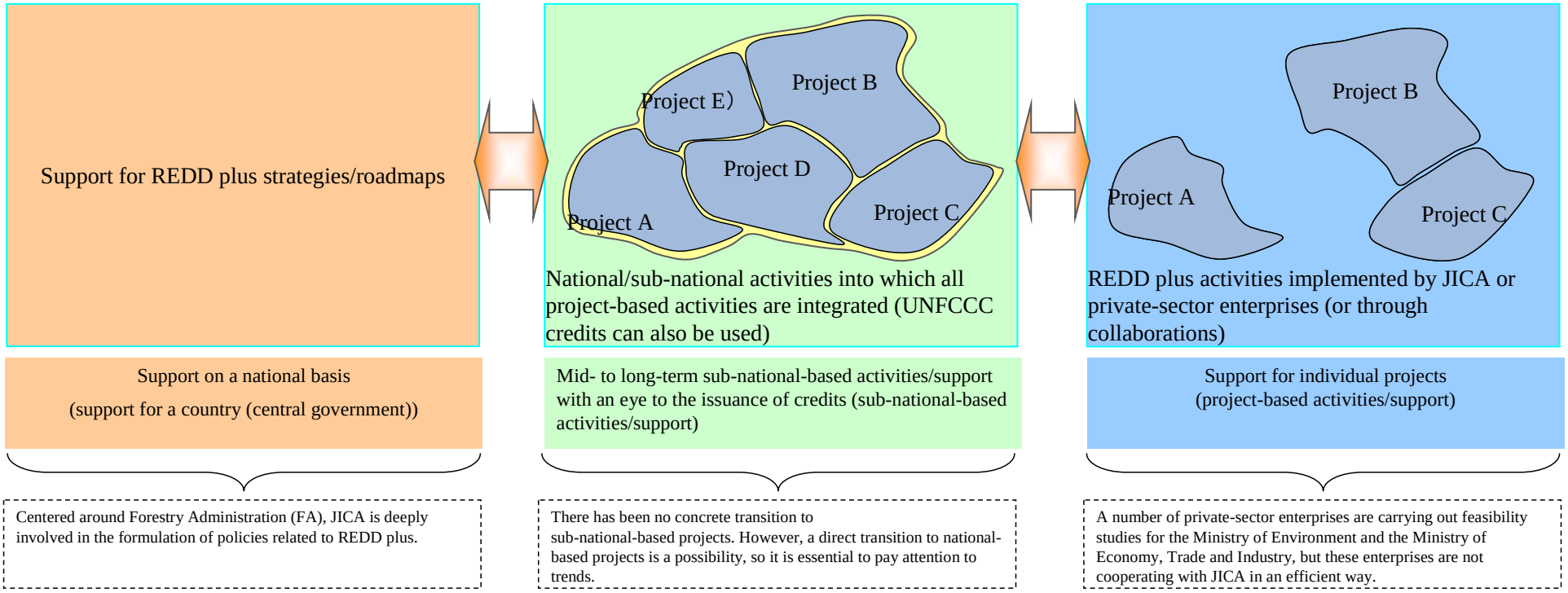
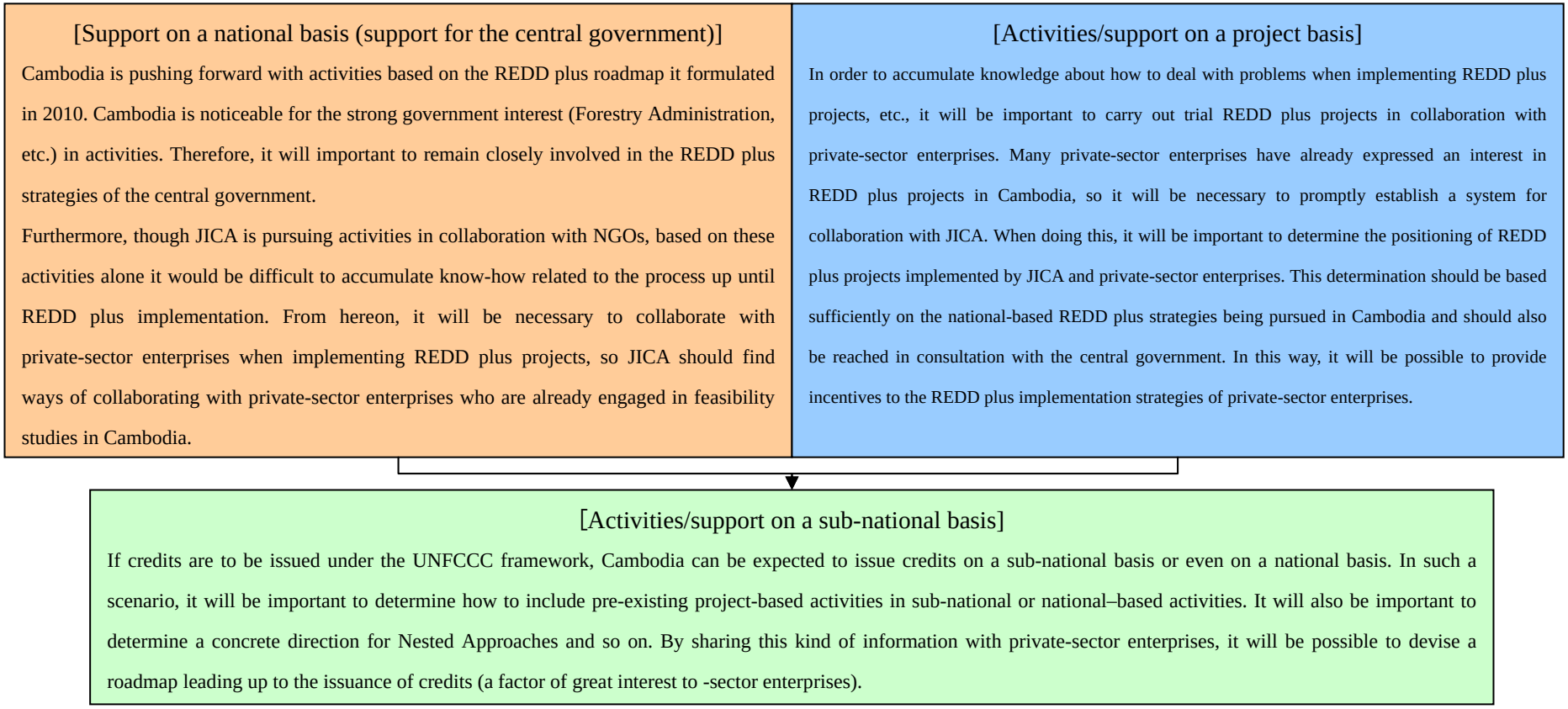


Figure 43 Outline of status of REDD plus approaches in Cambodia

Furthermore, based on this review of the approach status, listed below is an outline of the direction JICA should take from hereon in order to form collaborations with private-sector enterprises, acquire REDD plus credits from a mid- to long-term perspective and implement REDD plus projects in a more effective manner.

6.1.1 Proposed approach: Key items

- In order to promote mitigation measures from 2013 onwards, Japan is actively working towards the construction of the bilateral offset credit mechanism with Cambodia. Like Laos, a large percentage of Cambodia's total GHG emissions come from forests, so the effective implementation of REDD plus projects will have a substantial impact on the bilateral offset credit mechanism.
- The central government has a huge influence on the implementation of REDD plus projects, so it is necessary to construct a method of collaboration with private-sector enterprises while implementing projects based around support for the Forestry Administration (FA) as usual.



6.2 Proposed approach to REDD plus in Laos

The status of REDD plus approaches in Laos are outlined below. This is based on the status of REDD plus related activities in Laos and the direction that Japan's REDD plus projects should take in the mid- to long-term.

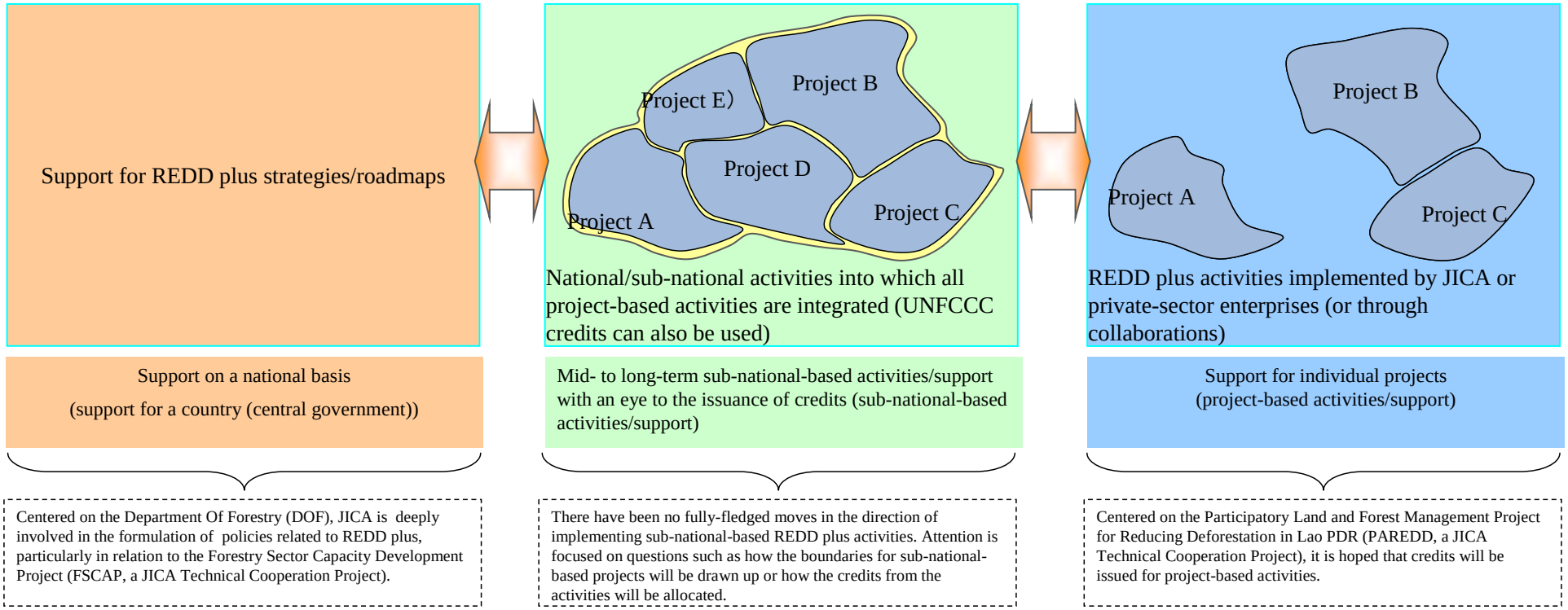


Figure 44 Outline of status of REDD plus approaches in Laos

Furthermore, based on this review of the approach status, listed below is an outline of the direction JICA should take from hereon in order to form collaborations with private-sector enterprises acquire REDD plus credits from a mid- to long-term perspective and implement REDD plus projects in a more effective manner.

6.2.1 Proposed approach: Key items

- In order to promote mitigation measures from 2013 onwards, Japan is actively working towards the construction of the bilateral offset credit mechanism with Laos. A large percentage of Laos's total GHG emissions come from forests, so the effective implementation of REDD plus projects will have a substantial impact on the bilateral offset credit mechanism.
- JICA is in charge of support for national-based forest monitoring in Laos, while project-based activities are also being implemented as part of the PAREDD approach. These activities both on a national basis and project basis offer a good opportunity to examine ways of dealing with the problems associated with REDD plus projects. They will also provide valuable information, not just for Laos but for other countries facing the same kinds of problems as Laos.

[Support on a national basis (support for the central government)]

The government of Laos has been undergoing a departmental restructuring from June 2011 and there is a strong possibility that the agency in charge of forests will also change. Revisions to the Forest Law are likely to lead to the promotion of new policies related to forestry management. During this period of change, JICA will need to deepen its collaborative activities in order to ensure the smooth passage of the REDD plus projects that it is trying to implement.

For example, PAREDD is aiming to reduce deforestation and forest degradation due to slash-and-burn agriculture. It will be necessary to make good use of JICA support when implementing REDD plus projects (for example, to support proposals to define slash-and-burn land as forests not farmland).

[Activities/support on a project basis]

In order to implement REDD plus projects in the short term in collaboration with private-sector enterprises, it will be important not just to offer support to the central government but also to carry out trial activities on a project-level basis to begin with. Some private-sector enterprises have already expressed an interest in REDD plus projects in Laos, so it will be necessary to promptly establish a system for collaboration.

In doing so, JICA and private-sector enterprises will need to discuss how to allocate credits generated from REDD plus projects in future, for example, and it will be important to gain a clear understanding of what private-sector enterprises hope to gain from REDD plus projects. It would be a good idea to establish a forum for sharing ideas, as mentioned in X.

[Activities/support on a sub-national basis]

If credits are to be issued under the UNFCCC framework in the mid- to long-term, it will be necessary to devise a clear roadmap leading to the issuance of credits while ensuring that national-based and project-based activities remain consistent with each other. JICA is in charge of support for national-based forest monitoring in Laos, so it will be easy to discuss ways of shifting up to a sub-national basis while maintaining consistency between several project-based activities. It will be necessary to utilize this strength whilst pushing forward with activities in a trial manner.

6.3 Proposed approach to REDD plus in Vietnam

The status of REDD plus approaches in Vietnam are outlined below. This is based on the status of REDD plus related activities in Vietnam and the direction that Japan's REDD plus projects should take in the mid- to long-term.

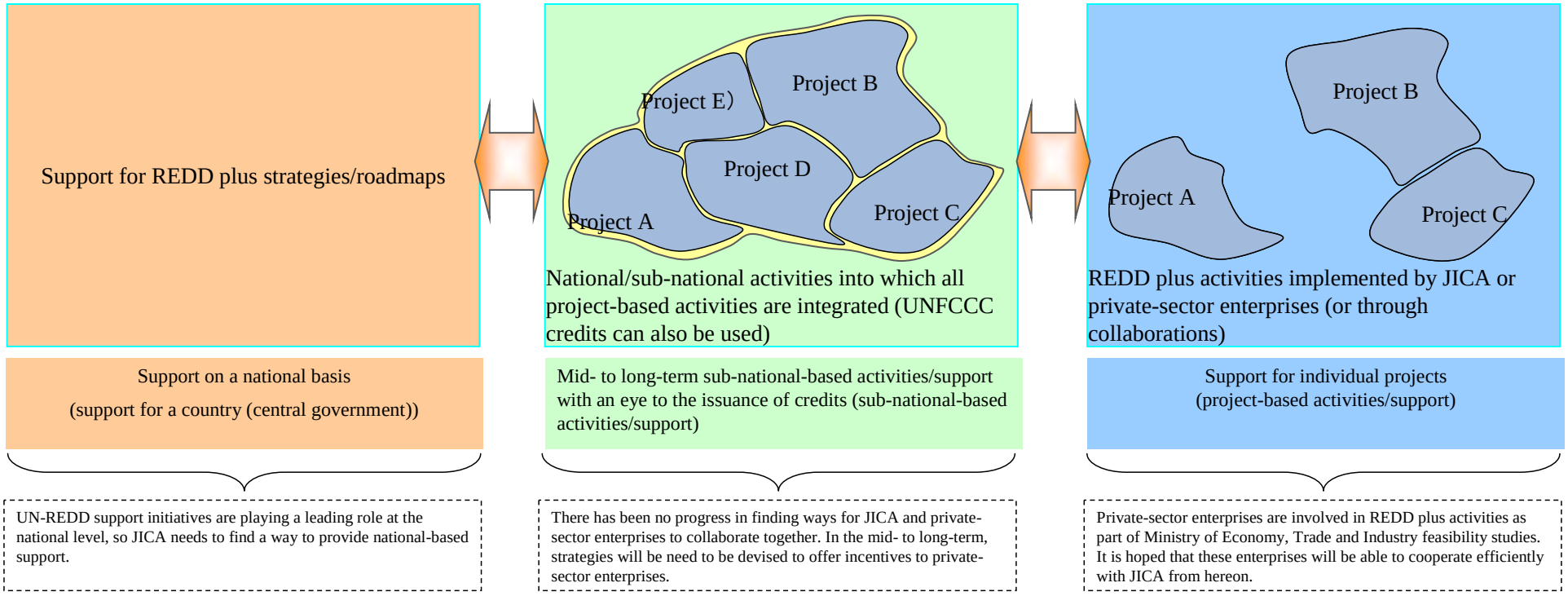
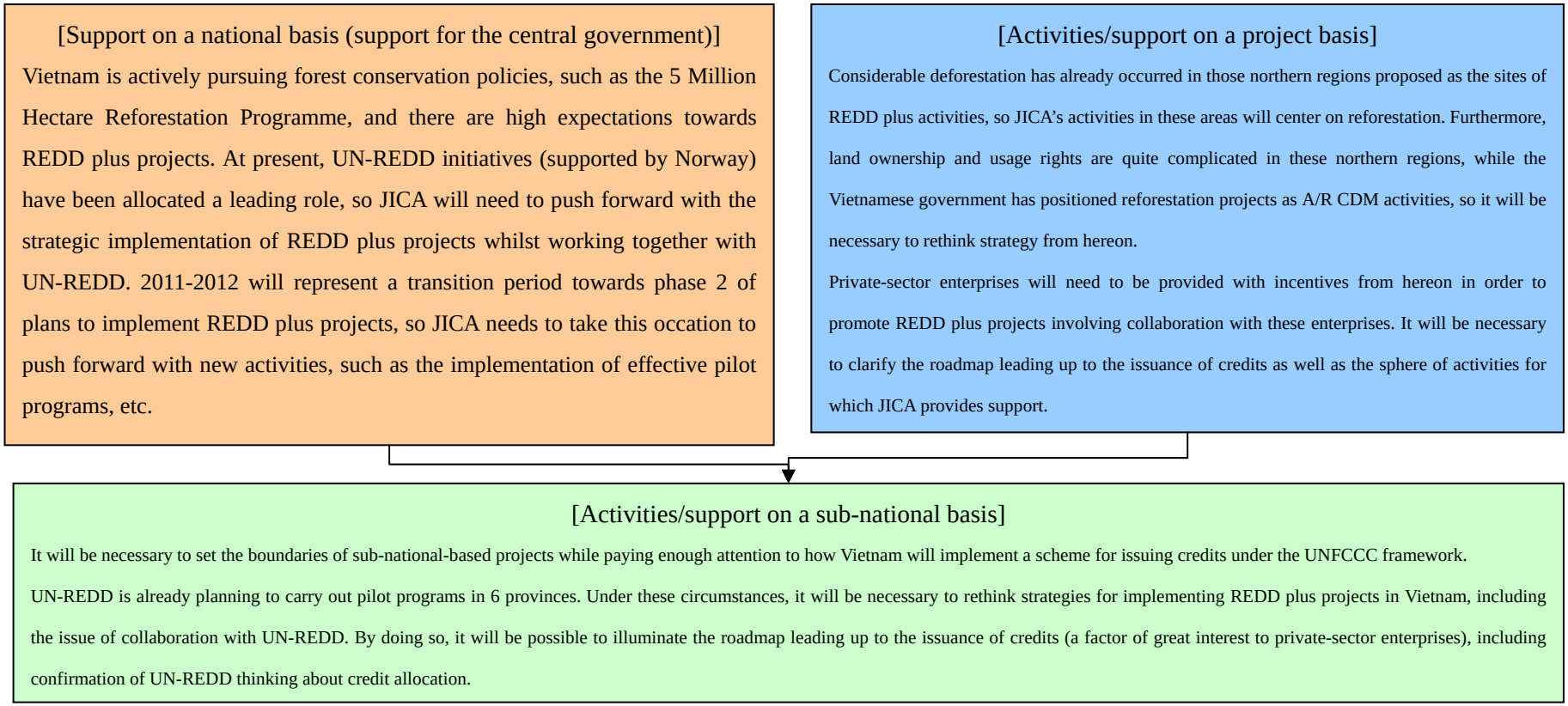


Figure 45 Outline of status of REDD plus approaches in Vietnam

Furthermore, based on this review of the approach status, listed below is an outline of the direction JICA should take from hereon in order to form collaborations with private-sector enterprises, acquire REDD plus credits from a mid- to long-term perspective and implement REDD plus projects in a more effective manner.

6.3.1 Proposed approach: Key items

- In order to promote mitigation measures from 2013 onwards, Japan is actively working towards the construction of the bilateral offset credit mechanism with Vietnam. A large percentage of Vietnam's GHG emissions come from the industry sector, while moves are already afoot to curb deforestation and forest degradation, so the positioning of REDD plus projects within the bilateral offset credit mechanism is becoming a significant issue.



6.4 Proposed approach to REDD plus in Papua New Guinea

The status of REDD plus approaches in Papua New Guinea are outlined below. This is based on the status of REDD plus related initiatives in PNG and the direction that Japan's REDD plus projects should take in the mid- to long-term.

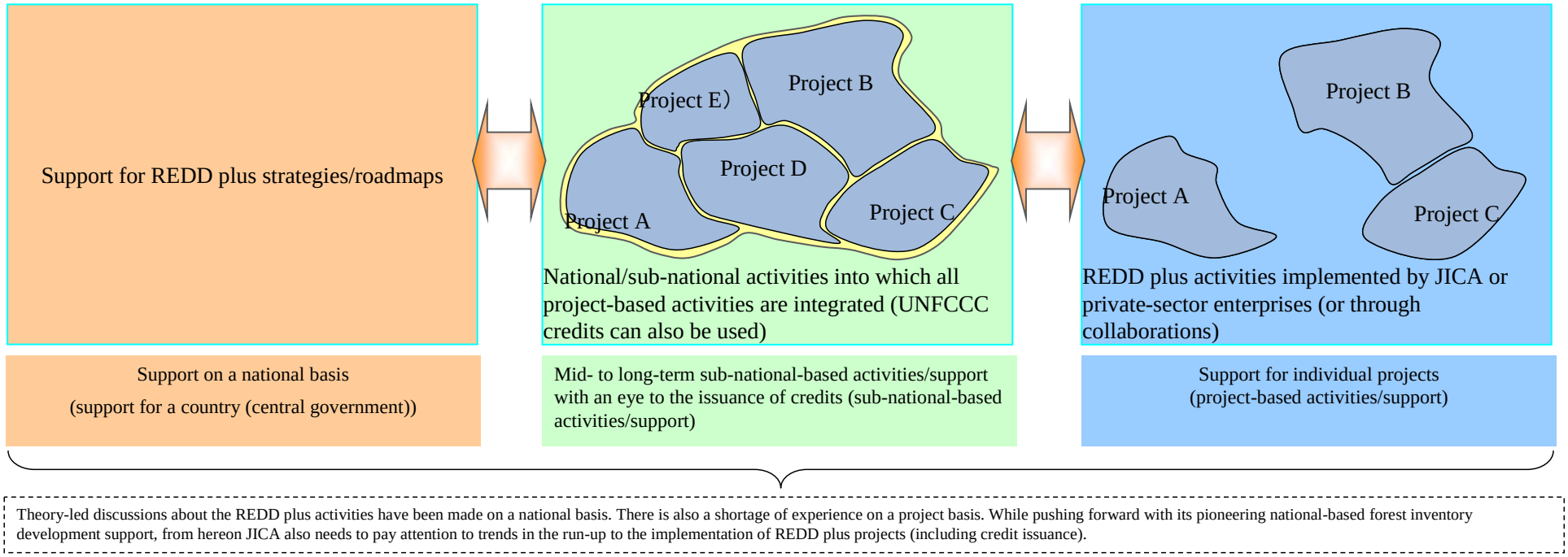


Figure 46 Outline of status of REDD plus approaches in PNG

Furthermore, based on this review of the approach status, listed below is an outline of the direction JICA should take from hereon in order to form collaborations with private-sector enterprises acquire REDD plus credits from a mid- to long-term perspective and implement REDD plus projects in a more effective manner.

6.4.1 Proposed approach: Key items

- PNG is known as the nation which proposed REDD plus to the UNFCCC, but the country has faced domestic strife and has not yet managed to push forward with any concrete activities related to REDD plus. From hereon, it will be important to devise policies for moving forward with REDD plus projects in the mid- to long-term in collaboration with private-sector enterprises. For this reason, it will be important to remain deeply involved with the PNG Forest Authority, etc.

[Support on a national basis (support for the central government)]

In the short term, it is unlikely that credits generated from REDD plus will be provided to voluntary markets (outside UNFCCC), in part due to central government policy. Depending on trends in other countries though, the PNG government may well revise its policies and it will be important to prepare for such a scenario.

Japan is supporting national-based monitoring systems in PNG, just like in Laos, so it will be important to utilize this strength whilst participating fully in PNG REDD plus strategy.

[Activities/support on a project basis]

There are no concrete project-based activities taking place in PNG. Based on central government policy, it would be difficult to implement any pioneering activities.

However, the PNG Forest Authority is planning to accumulate knowledge though the implementation of pilot projects, so JICA should also participate and should review the issues involved in transitioning from project-based to sub-national-based activities.

[Activities/support on a sub-national basis]

At present, it is difficult to foresee how the PNG government is going to transition to national or sub-national-based activities. Based on JICA projects currently underway, it will first all be necessary to attain a precise understanding of PNG government trends and it will then be important to contribute fully to the implementation of pilot projects or the planning of rules for issuing credits. Collaboration of private-sector enterprises will be key in this case, so it will be important to work through JICA's head office to find methods of collaboration that meet the goals of the private-sector enterprises.

6.5 Proposed approach to REDD plus in Peru

The status of REDD plus approaches in Peru are outlined below. This is based on the status of REDD plus related initiatives in Peru and the direction that Japan's REDD plus projects should take in the mid- to long-term.

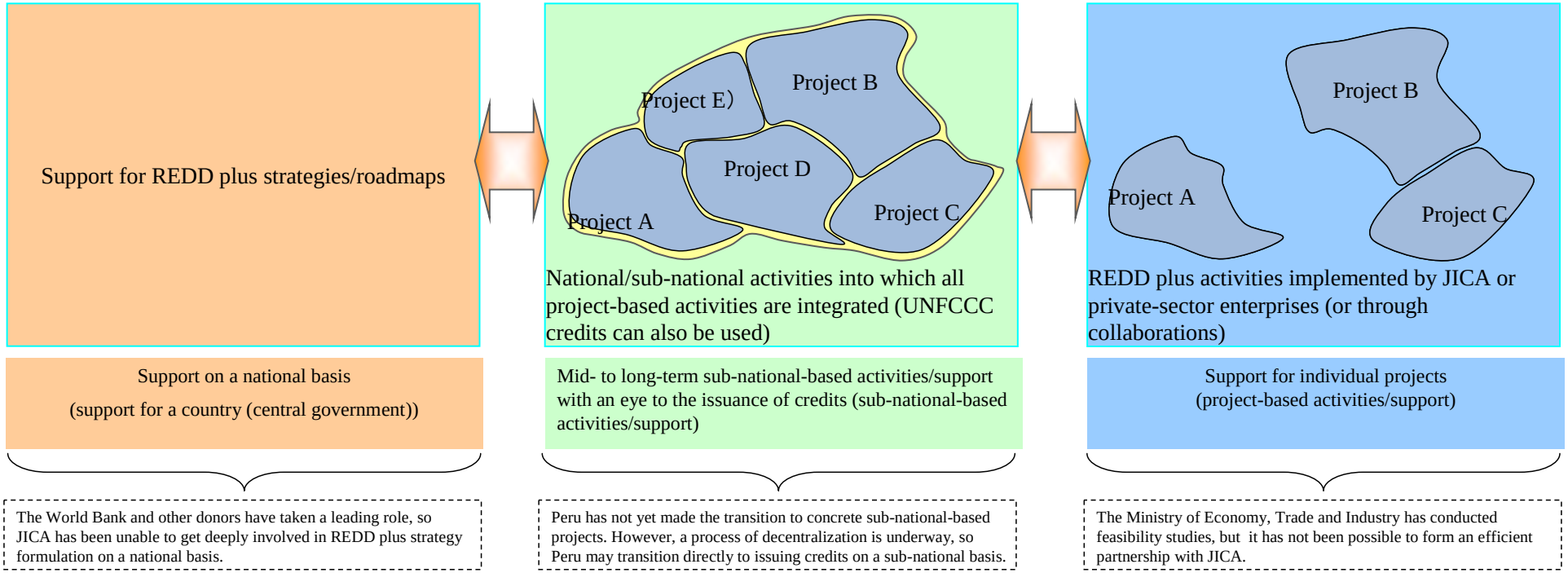
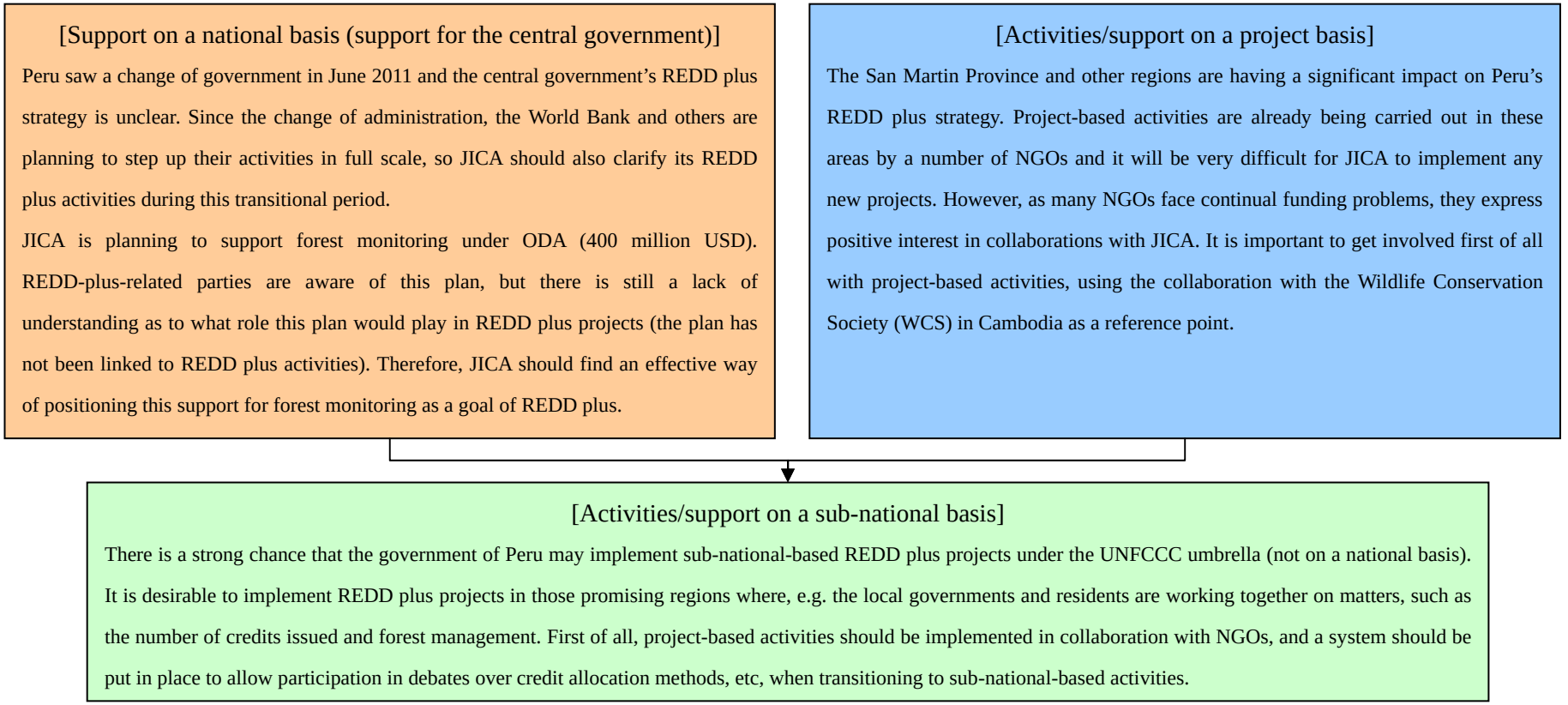


Figure 47 Outline of status of REDD plus approaches in Peru

Furthermore, based on this review of the approach status, listed below is an outline of the direction JICA should take from hereon in order to form collaborations with private companies, etc., acquire REDD plus credits from a mid- to long-term perspective and implement REDD plus projects in a more effective manner.

6.5.1 Proposed approach: Key items

- Peru has been undergoing a process of decentralization and, unlike other countries that were the focus of field studies, the actions of regional governments have become a major factor in the implementation of REDD plus projects. Under these circumstances, NGOs and international institutions engaged in pioneering REDD plus activities will wield a lot of influence. From hereon, it will be important to consider collaborations with these organizations when examining strategies.



6.6 Proposed approach to REDD plus in Indonesia

Though Indonesia was not included as subject of field research as part of this study, the country has a huge potential for mitigation through REDD plus projects, so from a strategic and technical point of view, Indonesia will play an important role in the direction of REDD plus projects from hereon. Furthermore, JICA has been involved continually in the implementation of forest conservation projects in Indonesia for some time now, so from hereon it will be required to formulate strategies aimed at the implementation of REDD plus projects.

Based on the above, a review was made of how REDD plus projects should be approached in mitigation policies from 2013 onwards, based on a survey of REDD plus trends in Indonesia.

6.6.1 Outline of the forestry situation in Indonesia

In 2005, Indonesia's GHG emissions stood at about 2 billion t-CO_2. This was roughly 5% of total global emissions and around 1.6 times higher than Japan's amount. These GHG emissions are on an upward trend and are expected to reach 3.26 billion t-CO_2 by 2030. Under these circumstances, it has been reported that REDD plus activities could lead to emission cuts in the region of 1.8 billion t-CO_2 by 2030 (around 80%), so there are high hopes with regards to the huge mitigation potential and cost-effectiveness of REDD plus. Even among designated forest land, reports state that REDD plus activities have particularly huge mitigation potential with regards to reducing GHG emissions from the underground part (organic soil) of forests located in peat dog (peat forests). These initiatives are becoming a pressing issue.

6.6.2 Trends in REDD plus activities in Indonesia

Indonesia already established REDD Task Force and now preparing National REDD Strategy under LOI which is agreement with Norway (budged is 1 billion USD). In addition, Indonesia has a plan to establish REDD Agency and MRV Agency. There are already many NGOs and other donors involved in REDD plus-related activities in Indonesia, but these donors are not working in concert and have been unable to put together any forecasts for mid- to long-term REDD plus strategies. The central government has also been slow to coordinate with other REDD plus-related departments and agencies (the Forestry Ministry, UKP4 and BAPPENAS), so it has met with a number of problems, such as a delay of several months in the setting up of the REDD Plus Agency.

In light of the aforementioned circumstances, it is becoming difficult to select new target areas for REDD plus projects in regions expected to issue a large number of credits (such as land with peat forests, etc.) Furthermore, the lack of any specific mechanism for consultation makes it difficult to proceed smoothly when trying to reach agreement with the central government as to how JICA is going to implement REDD plus-related projects.

6.6.3 Proposed approach from hereon

There are already several regions which are implementing Readiness activities on a province level. It is important to recognize that Japan is lagging behind in these regions. Even if an enterprise or organization focuses on activities with the sole aim of issuing credits (phase 3 activities) in these areas and issues credits in this way, it will difficult to ensure consistency with credits issued at province level. There is a lack of support for phase 1 and 2 initiatives (especially Readiness initiatives), so it is unclear as to how these credits would be allocated sufficiently. Therefore, the best option would be to implement REDD plus projects in sectors outside of those areas where other donors are already engaged. In regions like Central Kalimantan, for example, where pioneering projects are already being carried out by Norway, Australia and several NGOs, there will be substantial problems when it comes to issuing credits in future.

Furthermore, collaboration between JICA and private-sector enterprises will be key when it comes to the implementation of REDD plus activities in the mid- to long-term. In these cases, it will be necessary to place importance on private-sector goals such as the cost-effective, large-scale issuance of credits. For example, regions where deforestation has not been taking place cannot be expected to yield many credits from REDD plus activities, so these regions will lack incentives for private-sector enterprises.

Based on the above, it will be important to select regions where it would be possible to implement support activities on a province level, and it will be also be important to set up a structure that entices private-sector enterprises to take part in individual projects in these regions. According to reviews of available literature, although no province-level activities are being undertaken in West Kalimantan, this region is also home to peat forests, so it can be expected to issue a considerable number of credits. Activities in this region can also be expected to help preserve biodiversity through efforts to conserve mangrove forests. As a result, this region is a promising target for JICA support.

Chapter 7 Conclusions

This study has reviewed some of the proposed approaches to REDD plus projects from hereon, based on (1) REDD plus-related activities within Japan and overseas, (2) the results of JICA's forest conservation projects in developing nations and (3) expectations of private-sector enterprises with regards to REDD plus. This review also focused on (a) trends in those countries subjected to the field research, which are pioneering REDD plus-related activities and (b) trends among donors from other nations. The study was undertaken with the aim of arriving at realistic and effective proposed approaches.

REDD plus has been a continual topic for debate since the UNFCCC COP11 conference in 2005 and has become a high-priority issue in discussions over mitigation measures from 2013 onwards. After years of international negotiations, international agreement was reached at the COP 16 conference at the end of 2010 with regards to the framework for the implementation of REDD plus. On this occasion it was agreed that importance should be placed on new activities based on market mechanisms and on methods of local land utilization in those developing countries targeted for REDD plus projects, with the conference also clarifying the adoption of a phased-approach method.

Activities by the World Bank, already proceeding outside the UNFCCC framework, are also based on this phased approach. As part of Readiness preparation, a system has been devised for shifting to market-based mechanisms that provide incentives for the staged participation of private-sector enterprises while at the same time making effective use of ODA.

Japan was involved in JICA-centered forest conservation projects in developing countries even before the implementation of REDD plus-related activities, so it has accumulated a lot of experience, knowledge and networks. REDD plus is expected to mitigate the impact of global warming, leading to substantial cost-effective results. As a result, private-sector enterprises are also getting actively involved in REDD plus projects. In FY2011, a total of 11 projects are being carried out as part of feasibility studies conducted by the Ministry of Environment and the Ministry of Economy, Trade and Industry.

However, the experience and knowledge accumulated by JICA is not currently being put to good use in the feasibility studies conducted by private-sector enterprises, and it is not easy for private-sector enterprises to utilize JICA's experience and knowledge.

Based on the aforementioned (1) phased approach adopted for REDD plus activities both within and without the UNFCCC and (2) the activities of JICA and Japanese private-sector enterprises, this study proposed a REDD plus implementation structure based on the phased approach, which should be set up within Japan. This system would contribute to the efficient implementation of REDD plus-related mitigation measures. This would be a boon for Japan, which has committed itself to reducing GHG emissions by 25% on 1990 levels by 2020. Also, Japan would be able to maximize the impact of aid to developing nations by transferring the effects of JICA's already-implemented forest conservation projects over to REDD plus activities that involve private-sector enterprises.

Furthermore, in order to link (1) the phased-approach-based collaborations between JICA and private-sector enterprises with (2) concrete REDD plus activities in developing nations, this study formulated some approach proposals that sufficiently considered the situation in the developing countries as well as the technical problems involved in implementing REDD plus activities.

When putting together these approach proposals, the study considered the different characteristics of (1) those countries already receiving prior support from donors from other nations (such as Peru or Indonesia) and (2) those countries receiving prior JICA-centered support from Japan (such as Cambodia and Laos). For example, we carefully considered national and sub-national-based viewpoints and the positioning of forest governance (including forest monitoring systems), with the aim of maximizing Japan's support for REDD plus activities in a way that corresponds to the situation in each developing country.

From hereon, we expect concrete policies to be formulated with regards to (1) the domestic system outlined in this study and (2) individual REDD plus proposed approaches for each country. It is hoped that REDD plus can be pursued smoothly and effectively as a measure to tackle global warming from 2013 onwards. It is also hoped that REDD plus will help to mitigate deforestation and forest degradation in developing countries, which currently accounts for around 20% of man-made GHG emissions.

Appendix 1 Satellite Imagery for REDD plus

Table 34 Satellite Imagery Comparison

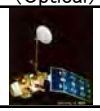
Satellite	Terra (Aqua)		LANDSAT(5/7)		ALOS			SPOT(2/4/5)	RapidEye
Sensor	MODIS (Optical)	ASTER (Optical)	TM (Optical)	ETM+ (Optical)	PRISM (Optical)	AVNIR-2 (Optical)	PALSAR (Radar (SAR))	HRVIR (Optical)	RapidEye (Optical)
Overview									
Resolution	250m (Visible – Near-infrared) 500m (Visible – Shortwave infrared) 1,000m (Visible – Thermal infrared)	15m (Visible – Near-infrared) 30m (Shortwave infrared) 90m (Thermal infrared)	30m (Visible – Short-wave infrared) 120m (Thermal infrared)	15m (Panchromatic) 30m (Visible – Shortwave infrared) 60m (Thermal infrared)	2.5m (Panchromatic)	10 m (Visible – Near-infrared)	10m (High resolution) 25m (Multi polrizations) 100m (Wide area observation)	2.5m/5 m (Panchromatic) 10m (Visible – Near-infrared) 20m (Mid-infrared)	6.5m (Multi spectral) 5m (After resampling)
Swath width	2,330km	60km	185km	185km	70km (Nadir) 35km (Triplet)	70 km (Nadir)	70km (High resolution) 20km (Multiple polarizations) 250～350km (Wide observation area)	60km	78km
Revisit cycle /Frequency	16 days /Daily	16 days	16 days	16 days	46 days	46 days /Within 3 days	46 days	26 days /Within 3 days	5 days
Providing Agency	JAXA	ERSDAC	USGS		RESTEC			Tokyo SPOT Image K.K.	Japan Space Imaging Co.
Web site	http://kuroshio.eorc.jaxa.jp/ADEOS/mod_nrt/index.html	http://imsweb.aster.ersdac.or.jp/ims/html/MainMenu/MainMenu_j.ht	http://earthexplorer.usgs.gov		https://cross.restec.or.jp/			http://sirius.spotimage.fr/PageSearch.aspx?language=UK	http://www.spaceimaging.co.jp/
Features	Able to make observations on a daily basis.	Equipped with a number of bands. Have proven past results in resource exploraion and vegetation analysis.	Able to make observations for a relatively wide area with high resolution. Have proven past results in land-use map development.	Equipped with TM and panchromatic sensors.	Able to conduct Triplet/Nadir & Backward stereo observations.	Able to make observations for emergent situations using pointing function.	Equipped with an all-weather sensor.	Commercializatio n in combination with DEM. Guarantee of quality.	Equipped with Red edge band, which is highly reactive to chlorophyll.
Notes				Data gaps are included because the sensor was broken in July, 2003.				Prices are high because satellites are commercial.	

Table 35 Satellite & Airborne Characteristic

Type	Satellite/Sensor	Advantage	Disadvantage	Usage
Mid Resolution	LANDSAT	Free, archive, wide coverage	Limitation of interpretation/classify	Analysis in the past
High Resolution	ALOS/ PRISM&AVNIR2	Good panchro resolution, value added service	Pan & MS are different sensor	National level development
	SPOT5	Comparing with past, abundant archive	Expensive (cmp. to ALOS), No blue band	National level development /partly update
	RapidEye	Quick collection, Good MS resolution, RedEdge band	No Pan imagery, few archive imagery, no experiences, sub-distributor system	Urgent/Short term development (new tasking)
Very High Resolution (VHR)	QuickBird、GeoEye 等	Possible to interpret tree kinds, village roads	Expensive, impossible to cover national level	Field survey complement, modeling validation
Airborne	LiDAR	DSM & DTM, high accuracy	Hilly area or high density area	Contribution for tree stand volume table
Radar/SAR	ALOS/ PALSAR	Regularly, assured collection, strong for change detection	Limitation for using in mountain area	Regularly change monitoring

Appendix 2 REDD plus mentioned in Cancn Accord (COP 16)

Table 36 REDD plus mentioned in Cancn Accord (COP 16)

Paragraph	Details
Main text	REDD plus mitigation actions are following; (a) Reducing emissions from deforestation; (b) Reducing emissions from forest degradation; (c) Conservation of forest carbon stocks; (d) Sustainable management of forest; (e) Enhancement of forest carbon stocks.
	Developing country Parties are requested as follows; (a) A national strategy or action plan; (b) A national forest reference emission level and/or forest reference level; (c) A robust and transparent national forest monitoring system; (d) A system for providing information on how the safeguards referred to in Annex I.
	REDD plus should be implemented in phases beginning with the development of national strategies or action plans, policies and measures, and capacity-building (as for Phased Approach).
	In addition Cancn Accord includes; ・ UNFCCC Parties should collectively aim to slow, halt and reverse forest cover and carbon loss. ・ UNFCCC Parties to find effective ways to reduce the human pressure on forests that results in greenhouse gas emissions, including actions to address drivers of deforestation. ・ UNFCCC Parties, in particular developed country Parties, to support, through multilateral and bilateral channels, the development of national strategies or action plans, policies and measures and capacity-building, followed by the implementation of national policies and measures, and national strategies or action plans. ※Financing options for the full implementation of the results-based actions of REDD plus will be explored until the Conference of the Parties at its seventeenth session.
Annex I	Guidance and safeguards for policy approaches and positive incentives on issues relating to REDD plus (including environmental integrity etc.), safeguards include; Respect for the knowledge and rights of indigenous peoples and members of local communities; conservation of biological diversity; Actions to address the risks of reversals; Actions to reduce displacement of emissions.
Annex II	SBSTA is requested as follows; ・ (a) Identify land use, land-use change and forestry activities in developing countries, in particular those that are linked to the drivers of deforestation and forest degradation, to identify the associated methodological issues to estimate emissions and removals resulting from these activities, and to assess their potential contribution to the mitigation of climate change, and report on the findings to the Conference of the Parties at its eighteenth session on the outcomes of the work referred to in this paragraph; ・ (b) Develop modalities of A national forest reference emission level and/or forest reference level and A robust and transparent national forest monitoring system, and guidance of safeguards for consideration by the Conference of the Parties at its seventeenth session; ・ (c) Develop as necessary, modalities for measuring, reporting and verifying anthropogenic forest-related emissions by sources and removals by sinks, forest carbon stocks, forest carbon stock and forest area changes resulting from the implementation of activities of REDD plus, consistent with any guidance for measuring, reporting and verification of nationally appropriate mitigation actions by developing country Parties agreed by the Conference of the Parties, taking into account methodological guidance in accordance with decision 4/CP.15, for consideration by the Conference of the Parties at its seventeenth session.

Appendix 3 Overseas emissions trading systems and voluntary schemes

1. Overview of main emissions trading systems

Some of the overseas emissions trading systems do not allow the trading of credits from forest carbon stock, as shown in Table 1. Among such systems, the major ones are outlined in Table 37 and Table 38.

Table 37 Major global emissions trading systems (in operation)

Name	Outline (in particular, the handling of the credits from forest carbon stock)
EU Emission Trading System (EU-ETS) EU-level scheme[93]	・ This system is leading carbon markets globally with its large trading volume. ・ Credits from forest carbon stock are currently not traded.
NZ-ETS (New Zealand Emission Trading Scheme) New Zealand's domestic scheme[94]	・ This is a system used to allocate emission allowances to the forestry sector (failure to achieve the target will be subject to a fine and penalty). ・ Forest owners are required to maintain data on forest management for 20 years (seven years for other sectors) and to report on forestry activities on a quarterly basis as part of measures introduced to address the non-permanence of forest carbon stock.
Chicago Climate Exchange (CCX) Voluntary scheme in North America[95]	・ The emissions trading period ended in 2010. A new offset scheme is planned for establishment in the future. ・ The former scheme was the first in the world to establish a mechanism for offsetting emissions with forest carbon stock and actually traded forestry credits. ・ The forest projects covered by the scheme were afforestation/reforestation, sustainable forests, and long-lived wood products. The reliability and transparency of forest projects was ensured by setting up a subcommittee for the verification of forest projects.
RGGI (Regional Greenhouse Gas Initiative) Regional-level scheme in the U.S.[96]	・ An auction system is introduced to sell some portion of emission allowances. ・ The credits from forest carbon stock are allowed to be used to offset emissions in reforestation projects as part of the Offset Project.

[93] EU Commission Web Site（http://ec.europa.eu/clima/policies/ets/index_en.htm）

[94] EU Commission Web Site（http://ec.europa.eu/clima/policies/ets/index_en.htm）

[95] CCX Web Site（http://www.chicagoclimatex.com/）

[96] RGGI Web Site（http://www.rggi.org/home）

Table 38 Other major emissions trading schemes (yet to be established)

Name	Outline
Emissions trading under consideration in Canada[97]	・ In April 2007, the Government of Canada announced a domestic GHG emissions reduction plan (“Turning the Corner”) and made a commitment to reduce the total GHG emissions, relative to 2006 levels, by 20% by 2020 and by 60–70% by 2050. At the same time, emissions regulations for industry and the transportation sector as well as consumer and commercial products and the utilization of the pricing mechanism were announced as a means to achieve these targets. The details of the framework for that purpose were unveiled in March 2008. ・ It has not been made clear how forest carbon stock would be treated.
Emissions trading under consideration in Australia[98]	・ In June 2007, then-Prime Minister Howard announced the introduction of a domestic emissions trading scheme by 2012 at the latest. However, the prospect of the introduction of such scheme is unclear at the present stage. ・ Since then, the introduction of emissions trading has been discussed, though the credits from forest carbon stock are not included at present. However, the government states that, after the transition to a cap-and-trade system, the use of overseas credits that meet the standards for volume and quality will be allowed.
Emissions trading under consideration in the ROK[99]	・ In August 2008, the South Korean government declared “Low Carbon, Green Growth” as a new national vision for 60 years to come, and in January 2010, the “Framework Act on Low Carbon, Green Growth” was enacted to set forth measures to realize this vision. In addition, Article 46 of the Act provides for the “introduction of an emissions cap-and-trade system.” In February 2011, the Office of the Prime Minister and the Green Growth Committee established under the President’s Office amended the bill on the greenhouse gas emissions cap-and-trade system (draft), which was initially announced to be submitted in November 2011, taking into account opinions from industry, etc., and it again announced the submission of the bill for enactment. ・ Although there is no provision concerning credits from forest carbon stock at present, it is provided that the use of external credits are allowed with certain qualitative and quantitative restrictions, and therefore, forestry credits may be traded in the future.
Emissions trading under consideration in China[100]	・ In 2008, the China Beijing Environment Exchange (CBEEX), Shanghai Environment and Energy Exchange, and Tianjin Emissions Exchange, etc., were established one after another. ・ At COP 15 in 2009, China announced the establishment of the Panda Standard, a VER standard applied exclusively to the markets in China (established by CBEEX and Winrock International). ・ The Panda Standard intends to issue forest carbon credits. All projects covered by this system are implemented in China, and a buffer pool is created to ensure permanence. The aim is to develop new methodologies in the agriculture and forestry sector with a focus on rural regions in China.

97 Environment Canada Web Site（http://www.ec.gc.ca/default.asp?lang=En&n=4891B242-1）

98 Australian Government Web Site（http://www.climatechange.gov.au/en/government/initiatives/multi-party-committee.aspx）

99 Ministry of the Environment, Japan Web Site（http://www.env.go.jp/earth/ondanka/det/os-info/index.html）

100 Ministry of the Environment, Japan Web Site（http://www.env.go.jp/earth/ondanka/det/os-info/index.html）

2. Overview of domestic systems (voluntary markets)

2.1 Japan's voluntary Emissions Trading Scheme (J-VETS) [101] (Ministry of the Environment)

Outline	To business operators who intend to tackle GHG emissions reductions voluntarily and actively, a subsidy for the installation of facilities for reducing CO_2 emissions through energy saving, etc., is granted in exchange for a commitment to reduce a certain amount of emissions. Emissions trading is allowed as a flexible measure to achieve emission reduction commitment. The objective is to ensure GHG reduction in a cost-effective way and to accumulate knowledge and experience in the domestic emissions trading scheme.
Started from	FY2005
Applies to	Voluntary participants. 289 companies have set their targets (as of July 6, 2009)
Gas covered	・ Energy-related CO_2 ・ Non energy-related CO_2 (waste, industrial process)
Commitment period	The first phase is the three-year period from FY2005, and subsequent phases begin every three years.
Target-setting	Type A (participants with subsidy) ・ Set the target emissions that are the base year emissions (average emissions of the preceding three years) minus the expected emissions reduction (including reduction by investment in facilities with the subsidy and other measures). Type B and C (participants without subsidy) ・ Set the target emissions that are at least 1% less than the base year emissions (when setting the target for FY2011 and after, participants are required to make a commitment to reduce total emissions by at least 1% from the target emissions set for the preceding year).
Allocation method	Allocated in advance
Compliance option	Use of Kyoto credits (iCER)
Calculation reporting	・ Monitoring and calculation are conducted according to the unified guidelines. ・ Verification is conducted by third-party verifiers according to the unified guidelines.
Penalty	Type A: Return the subsidies corresponding to the amount of emissions that failed to be reduced Type B and C: The name of the company or the name of the plant or the workshop is announced.
Handling of forest carbon credits	Not traded

[101] Japan's voluntary Emissions Trading Scheme Web Site（http://www.jvets.jp/jvets/files/jvets_outline_2010.pdf）

Achievements[102]

			First Period 2005	Second Period FY2006	Third Period FY2007	Fourth Period FY2008	Fifth Period FY2009	Sixth Period FY2010
Participants	Participants with target	Type A	31 companies	58 companies	55 companies	69 companies	63 companies	55 companies
		Type B	-	-	3 companies	12 companies	6 companies	-
		Type C	-	3 companies	3 companies	-	-	-
	Participants for trading		7 companies	12 companies	25 companies	Not invited applications	Not invited applications	Not invited applications
	Total		38 companies	73 companies	86 companies	81 companies	69 companies	55 companies
Emissions verifiers			12 companies	18 companies	20 companies	20 companies	21 companies	22 companies
Total base year emissions ($t\text{-}CO_2$)			1,665,599	1,122,593	1,661,251	3,368,915	639,306	To be fixed January 2011
Total emission in the fiscal year when reduction measures were taken ($t\text{-}CO_2$)			1,288,543	842,401	1,278,626	2,418,618	To be fixed June 2011	To be fixed June 2012
Achieved reduction from the base year emissions ($t\text{-}CO_2$) (percentage reduction from base year)			377,056 (29%)	280,192 (25%)	382,625 (23%)	950,297 (28%)	Same as above	Same as above
Total committed emissions reduction ($t\text{-}CO_2$) (percentage reduction from base year)			273,076 (21%)	217,167 (19%)	134,961 (8%)	334,617 (10%)	100,536 (16%)	84,263
Number of emissions transactions			24	51	23	Not confirmed yet	Not confirmed yet	Not confirmed yet
Emissions traded ($t\text{-}CO_2$)			82,464	54,643	34,277	Same as above	Same as above	Same as above
Average transaction price (yen/$t\text{-}CO_2$)			1,200	1,250	800	Same as above	Same as above	Same as above

102 J-VETS Web Site（http://www.jvets.jp/jvets/files/jvets_outline_2010.pdf）

2.2 Outline of the Domestic Credit System (domestic credit certification system)[103] (Ministry of Economy, Trade and Industry)

Outline		The system is set forth in the Kyoto Protocol Target Achievement Plan (decided by the Cabinet on March 28, 2008). It aims to certify credits for GHG emissions reduction realized by small and medium-size enterprises using technologies and funds provided by large enterprises. The certified credits can be used for the achievement of the target of the voluntary action plan or the pilot emissions trading scheme.
Start date		October 21, 2008
Gases covered		CO_2 and N_2O
Type of project		・Enhancement of energy efficiency through facility improvement ・Use of renewable energy ・Agriculture and livestock sector (reduction of N_2O emissions from livestock excreta treatment through the use of low-protein compound feed), etc. ・In principle, emissions reduction projects that started after October 21, 2008
Certification period		Ends on March 31, 2013
Methodologies		A total of 52 methodologies of 37 types have been approved (as of July 27, 2011).
Results to date	Number of projects	A total of 833 emissions reduction projects and 40 program-based emissions reduction projects have been approved (as of July 27, 2011)
	Amount of credits	A total of 404 projects received certification, and the total credits issued have amounted to 227,812 t-CO_2 (as of August 1, 2011).
	Price of credits	To be determined in direct trading
Handling of forest carbon stock		Not handled
Ensuring the transparency and credibility of credits		As a third-party certification body consisting of experts, the Domestic Credit Certification Committee was established and is operated to deal with the approval of methodologies, approval of projects, certification and management of emissions reduction, and the registration and management of examination bodies and examiners, etc.

[103] the Domestic Credit System Web Site（http://jcdm.jp/index.html）and various interviews

2.3 Offset Credit (J-VER) Scheme[104] (Ministry of Environment)

Outline		This is a system used to certify the projects that have been validated and verified according to the standards developed by the Ministry of Environment as reliable "Offset Credit (J-VER)" projects. It also issues carbon credits for such projects.
Start date		・November 14, 2008: Establishment of the scheme ・December 2009: Announcement and start of the certification of prefectural J-VER programs ・July 2010: Start of validation by external entities
Gases covered		CO_2 and N_2O
Type of project		・Enhancement of energy efficiency through facility improvement ・Use of renewable energy ・Forest carbon stock (accelerated thinning, accelerated sustainable forest management, forestation activity) ・Reduction of N_2O emissions through the management of livestock excreta, etc.
Methodologies		A total of 28 for emission-reduction types and three for forestry sector types (as of August 4, 2011)
Results to date	Number of projects	・A total of 154 projects are registered—60 more than in FY2010. ・Among them, 81 projects are for forest carbon stock (as of August 31, 2011).
	Amount of credits	・A total of 95 projects received certification, and the total credits issued have amounted to 138,905 t-CO_2. ・Among them, 58 projects are for forestry sector, and the total credits issued for these projects have amounted to 124,714 t-CO_2 (including buffer credits for 3,752 t-CO_2) (as of August 31, 2011).
	Price of credits	・To be determined in direct trading ・Forestry credits are currently traded at high prices, at around 10,000 yen/t-CO_2, due to their regional and unique nature. ・Emissions reduction credits are traded at 3,000–5,000 yen/t-CO_2, almost comparable with the sales prices of CER credits.
Handling of forest carbon stock		・ Forestry credits account for nearly 80% of the credits issued. ・ Forestry credits are traded at prices higher than emissions reduction credits. This is probably because companies purchasing carbon credits for CSR purposes choose forestry credits, which give a favorable impression, and municipalities, etc., purchase forestry credits generated in their local regions as part of regional contribution. ・Forestry credits of the J-VER Scheme are issued as credits to be traded in voluntary markets and are intended to be double-counted with Removal Unit (RMU), which is traded in compliance markets under Kyoto Protocol.
Ensuring the transparency and credibility of credits		・ After the completion of a project plan, public comments on the project are invited on the web, and validation is conducted by a third-party entity. After the registration and implementation of the project, verification is conducted by a third-party entity. ・ Third-party entities that conduct validation and verification are those certified under the scheme (14 entities, as of April 1, 2011). Certification is given according to ISO 14065 standards (however, only one entity obtained ISO 14065 certification, as of April 2011). ・ In order to ensure the permanence of CO_2 removal, 3% of the issued forestry credits are managed by the secretariat as buffer credits. A certain portion of the buffer credits are cancelled for a certain period each year to compensate the loss of carbon stock effect due to natural disturbance, the changeover of land use, etc.

104 the Offset Credit (J-VER) Scheme Web Site（http://www.4cj.org/jver/）and various interviews

2.4 Kochi Prefecture Offset Credit (Kochi J-VER) Program[105]

2.4.1 Outline

This is a program by Kochi Prefecture that aims to certify and issue credits for GHG emissions reduction and removal that are certified as conforming to J-VER standards by the J-VER Certification and Steering Committee (Prefectural J-VER Program Certification).

2.4.2 Handling of forest carbon stock

- Forestry credits are traded at prices higher than emissions reduction credits. It is pointed out that the market prices are stuck at a high level because Kochi Prefecture makes the credit prices public.
- The Kochi Prefectural Government charges no fees for the application and registration of credits and the issuance of certification, in order to help promote this program with the aims of expanding the program to all the forests in the prefecture through certification by the prefectural government and promoting the development of industry with the funds earned through the trading of Kochi J-VER credits.
- In Kochi Prefecture, businesses and communities work together to maintain forests in the “Forest Maintenance in Cooperation with Environmentally Advanced Companies” project, in which credits issued are given to companies, thereby encouraging corporate participation.

2.4.3 Ensuring the credibility and transparency of credits

- The prefectural government states that the precision of this program is ensured at the same level as the J-VER Scheme by the central government by the fact that this program received J-VER program certification and complies with the J-VER Scheme.

2.5 Niigata Prefecture Offset Credit (Niigata J-VER) Program[106]

2.5.1 Outline

This is a program by Niigata Prefecture that aims to certify and issue credits for GHG emissions reduction and removal that are certified as conforming to J-VER standards by the J-VER Certification and Steering Committee.

2.5.2 Handling of forest carbon stock

- Forestry credits are traded at higher prices than other credits. The prefectural government promotes the sale of these credits by emphasizing that purchasing them will contribute to the conservation of forests and ecosystems.

105 Kochi Prefecture Web Site（http://www.pref.kochi.lg.jp/soshiki/030701/j-ver.html）and various interviews

106 Niigata Prefecture Web Site（http://www.pref.niigata.lg.jp/kankyokikaku/1242256673958.html）and various interviews

2.5.3 Ensuring the credibility and transparency of credits

- By complying with the Offset Credit (J-VER) Scheme by the Ministry of Environment, the same level of credibility and transparency as the scheme itself is ensured.

3. Overview of domestic systems (compliance markets)

3.1 Tokyo Cap-and-trade Program (emissions trading scheme)[107]

Outline		GHG emissions reduction obligation for large-scale facilities and emissions trading as a means to fulfill the obligation (cap and trade)
Started from		FY 2010 (emissions trading started from FY2011)
Applies to		Facilities that consumed at least 1,500 kl of fuel, heat, and electricity in total (crude oil equivalent) in the previous year
Gases covered		・ Gases subject to emissions reduction obligation: energy-related CO_2 ・ Gases subject to emission reporting: Six gases
Target setting/ compliance period		・ First compliance period: FY2010–FY2014 ・ Second compliance period: FY2015–FY2019 ・ The reduction target for the first compliance period is 6% below the base year emissions (or 8% for office buildings, etc., that receive less than 20% of the total energy consumed from district cooling and heating systems and for district cooling and heating plants). ・ The base year emissions are the average of any consecutive three years between 2002 and 2007.
Emissions trading scheme	Tradable emissions	・ Excess reductions: Reductions achieved by the facilities in excess of the reduction obligation ・ Credits from small and medium-size facilities in Tokyo (reductions in the Tokyo area): Emissions reductions achieved by small and medium-size facilities in the Tokyo area ・ Renewable energy credits: Environmental value equivalent and other equivalents (green energy certificates, electricity equivalent to new energy, etc., under the RPS Act) ・ Credits from outside the Tokyo area
	Form of trading	In principle, direct trading
	Trading price	・ To be determined through negotiation and agreement between trading parties ・ No upper and lower limits on the trading prices ・ Sales prices of the offset credits supplied by the metropolitan government are made public.
	Miscellaneous	・ Credits for photovoltaic and solar thermal, wind, and geothermal power generation and hydroelectric power generation of up to 1,000 kW are counted 1.5 times. ・ The use of emissions certified by the Domestic Credit System and other systems requires approval in accordance with the rules for calculation and verification separately established under the Tokyo system. (The environmental value of renewable energy consumed cannot be used.)
Handling of forest carbon stock		・ Forestry credits are not handled at present because forest carbon stock is difficult to quantify and because there are not so many forests in the Tokyo area.
Outlook on REDD plus credits (use of overseas credits)		・ This program is designed to reduce emissions from facilities in Tokyo. Expansion on a global scale (use of overseas credits) has not been considered so far.

[107] Tokyo Metropolitan Government Web Site（http://www.kankyo.metro.tokyo.jp/climate/large_scale/index.html）及びヒアリング調査結果に基づき作成

3.2 Saitama Prefecture Target-setting Emissions Trading Program[108]

Outline		GHG emissions reduction obligation for large-scale facilities and emissions trading as a means to fulfill the obligation (cap and trade)
Started from		FY 2011 (emissions trading to start from FY2012)
Applies to		Facilities that consumed at least 1,500 kl of energy (crude oil equivalent) for three consecutive years
Gases covered		・ Six gases (CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6) ・ Only energy-related CO_2 can be used for emissions trading.
Target setting/ compliance period		・ First compliance period: FY2011–FY2014, and every five years afterward ・ The reduction target for the first compliance period is 6% below the base year emissions (or 8% for office buildings, etc., that receive less than 20% of total energy consumed from district cooling and heating systems and for district cooling and heating plants). ・ The base year emissions are the average of any consecutive three years between 2002 and 2007.
Emissions trading scheme	Tradable emissions	・ Excess reductions ・ Credits from small and medium-size facilities in the prefecture (reductions in the prefecture) ・ Renewable energy credits ・ Credits from outside the prefecture (reductions outside the prefecture) ・ Forestry credits
	Form of trading	In principle, direct trading
	Trading prices	To be determined through negotiation and agreement between the trading parties
	Miscellaneous	・ The renewable energy credits specified by the governor are counted 1.5 times. ・ Forestry credits from within the prefecture are counted 1.5 times.
Handing of forest carbon stock and ensuring credibility and transparency		・ Existing systems (the Saitama Prefecture Forest CO_2 Certification System and the Offset Credit [J-VER] Scheme) are used to ensure the transparency and credibility of forestry credits. ・ The "Saitama Prefecture Forest CO_2 Certification System" is for prefectures, enterprises, and municipalities that signed the "Saitama Prefecture Forestry Agreement." A certain level of transparency is ensured by including prefectures. ・ In order to promote activities in the prefecture, forestry credits from within the prefecture are counted 1.5 times. ・ Guidelines, etc., for the calculation of forestry credits were planned to be developed by the end of FY2010. However, they have not been developed as of May 2011.

108 Saitama Prefecture Web Site（http://www.pref.saitama.lg.jp/page/haisyututorihiki.html）and various interviews

Appendix 4 Estimated readiness costs for REDD plus implementation in the target countries of the field research

1. Estimated readiness costs in Cambodia

In Cambodia, the cost required for readiness (Phase 1) is estimated at approximately 1.5 million USD, and the share of funding from each donor including Japan has already been systematically determined.

The financial assistance to REDD plus including readiness activities that have been announced include five million USD in total from the FCPF Readiness Fund, 15 million USD (2012–2015) from UN-REDD, three million USD (2010) from the U.S., and eight million USD (2010–2012) from Japan.

Table 39 Estimated readiness costs for REDD plus in Cambodia[109]

Activity		Estimated Cost (in thousands USD)				
Main Activity	Sub-Activity	2011	2012	2013	2014	Total
National REDD plus Readiness Coordination Mechanism established	Establishment of multi-government agency Taskforce responsible for overall management of REDD plus Readiness with approved ToR	5	150	-	-	155
	Regular meetings of Cambodia REDD plus Taskforce, dissemination of minutes and reports	25	50	50	25	150
	Draft National REDD plus management arrangements and/or RGC policy statement	-	-	-	-	-
Support to National REDD plus Readiness process	Establishment of Taskforce Secretariat for day-to-day management of Readiness process	80	220	70	40	410
	Regular meetings of Advisory and Consultation Groups, including meetings with REDD plus Taskforce	20	30	30	10	90
	Training and Capacity-building to Taskforce, Secretariat and Government Agencies	20	30	30	10	90
	Hire advisor to the Taskforce to be based in the Taskforce Secretariat	100	200	200	100	600
Total		**250**	**670**	**370**	**205**	**1,495**
Domestic Government		30	60	60	30	180
FCPF		-	-	160	145	325
UN-REDD Programme (if applicable)		210	300	140	-	650
Other Development Partner 1 (Government of Japan)		-	300	-	-	300
Other Development Partner 2 (JICA)		10	10	10	10	40
Other Development Partner 3 (name)		-	-	-	-	-

[109] Prepared based on the R-PP submitted by the Cambodian government to the World Bank (submitted on March 4, 2011) and on interviews conducted during field research

2. Estimated readiness costs in Laos

In Laos, the cost required for readiness (Phase 1) is estimated at approximately 1.3 million USD (Table 40), and, in addition to the funds provided by other countries, the allocation of its own budget is considered.

The financial assistance to REDD plus including readiness activities that have been announced include 12 million USD (2010–2012) from Japan, 18 million USD (2009-2012) from Germany, and one million USD (2008–2012) from Finland. In addition, support under the FCPF and FIP of the World Bank is to be provided.

Table 40 Estimated readiness costs for REDD plus in Laos[110]

Activity		Estimated Cost (in thousands USD)				
Main Activity	Sub-Activity	2010	2011	2012	2013	Total
REDD Office	Veh. And Equ		100	20	20	140
	Operating costs		50	50	50	150
	Staff costs		44	44	44	132
	TWG Meetings		20	20	20	60
	Staff training		50	50		100
	Consultation W'shops	50	20			70
	Technical support	150	160	160	160	630
	Provincial REDD office		32	32	32	96
	Capacity building		90	60	60	210
	Attendance at International meetings		40	40	20	100
合計		**200**	**444**	**344**	**294**	**1,282**
Domestic Government						
FCPF						
UN-REDD Programme						
GIZ						
JICA						
Wrld bank						

※1: yellow includes CLiPAD project activities

※2: Following projects and program contributes to R-PP activities mentioned above, with covering all of each item or partly. These allocation will be made clear with a detail work plan and time schedule to be developed.

110 Prepared based on the R-PP submitted by the Lao government to the World Bank (submitted on November 11, 2010) and on interviews conducted during field research

3. Estimated readiness costs in Vietnam

In Vietnam, the cost required for readiness (Phase 1) is estimated at approximately 0.79 million USD as of January 2011 (Table 41), and, in addition to the funds provided by other countries, the allocation of its own budget is considered.

The financial assistance to REDD plus including readiness activities that have been announced include 4.4 million USD (2009–2011) from UN-REDD and other support from the World Bank and other countries.

Table 41 Estimated readiness costs for REDD plus in Vietnam[111]

Activity		Estimated Cost (in thousands USD)			
Main Activity	Sub-Activity	2011	2012	2013	Total
Support mechanisms to enable other stakeholders to participate in the REDD Network		30	40	40	110
Outreach activities to GoV ministries and departments		300	30	-	330
Technical Working Group management	Meetings (e.g. travel for stakeholders on TWG)	20	40	30	90
	Dissemination of reports	10	10	10	30
Technical Working Group support	Info/outreach specialist	24	24	-	48
	Technical specialist	24	24	-	48
Establish sub-national Working Group	Identify structure and implement required logistics	20	20	-	40
	Engage (inter)national stakeholders	70	20	-	90
Total		**498**	**198**	**60**	**786**
Domestic Government※1					
FCPF		168	198	60	426
UN-REDD Programme※2		330	10	20	360

※1: The Government of Viet Nam is contributing on a large number of levels to the implementation of the National REDD plus Strategy

※2: All UN-REDD Viet Nam Programme contributions reflect only relevant activities in the context of this proposal (workshops, material, procurement, etc). Staff time and other forms of overhead are not included, but consultant fees are.

111 Prepared based on the R-PP submitted by the Vietnamese government to the World Bank (submitted on January 20, 2011) and on interviews conducted during field research

4. Estimated readiness costs in Papua New Guinea

In PNG, the portion of the costs required for readiness (Phase 1) to be funded by the support from UN-REDD is estimated at approximately 0.32 million USD (Table 42).

In addition, other countries including Japan and Australia are planning to provide funds. However, there is no documented information on how the funds provided by donors will be used for readiness.

Table 42 Estimated readiness costs for REDD plus in PNG[112]

Activity		UN Agency	Partner	Estimated Cost (in thousands USD)			
Main Activity	Sub-Activity			2011	2012 -2013	Total	Support by UNREDD
Management arrangements between GoPNG and Development Partners strengthened	Assist the OCCD in liaising with other REDD initiatives, in particular the PNG-Australia Forest Carbon Partnership	UNDP	OCCD	30	70	100	100
	Assist the OCCD in carrying out PEB and PMC meetings						
Joint Programme Implementation strengthened	Provide support through NJP Manager	UNDP	OCCD	180	40	220	220
	Facilitate knowledge sharing with UN-REDD countries including other regional and international experiences						
Total				**210**	**110**	**320**	**320**

Caution: Estimated cost in the table is not total cost for the readiness. Estimated cost means requested values to the UN-REDD. Actual cost for the readiness will be more and more because of issues including land use system in PNG

[112] Prepared based on the UN-REDD PNG National Programme submitted by the PNG government to UN-REDD (submitted on March 28, 2011) and on interviews conducted during field research

5. Estimated readiness costs in Peru

In Peru, the cost required for readiness (Phase 1) is estimated at approximately 3.2 million USD, and the FCPF, Gordon and Betty Moore Foundation (MOORE), and the German Development Bank (KfW) are recognized as major donors. The information provided by the Peruvian government shows the items required for readiness activities, which will serve as the basic information for the discussion of the support for REDD plus for the future.

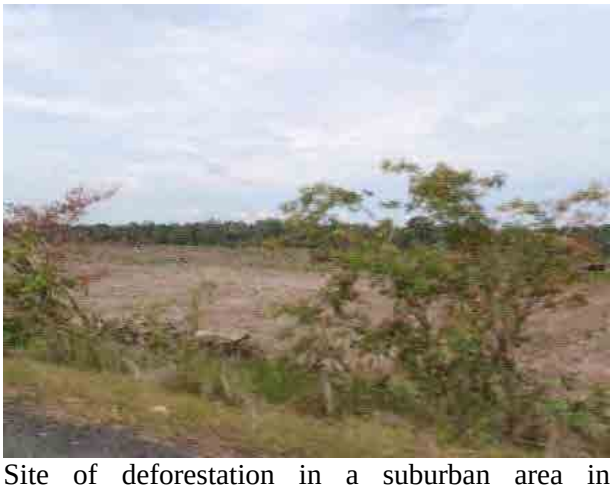
Table 43 Estimated readiness costs for REDD plus in Peru[113]

Activity		Source			Estimated Cost (in thousands USD)				
Main Activity	Sub-Activity	FCPF	MOORE	KfW	2011	2012	2013	2014	Total
Design and implement Forests and REDD Coordination Agency (OCBR)	Analysis of political, legal and institutional viability of the various existing options to host the Forests and REDD Coordination Unit	14			14				14
	Adequate institutionally to host OCBR	14			14				14
	Operation of Forests and REDD Coordination Agency		515	2,119	757	832	544	500	2,634
	Sub-total	**28**	**515**	**2,119**	**786**	**832**	**544**	**500**	**2,662**
Strengthening of current GTREDD and promotion of the effective participation of institutions and key stakeholders at national and regional levels	Creation of databases of information relevant to REDD plus	14			14				
	Updating of mapping of key stakeholders for REDD plus	7			7				
	Promotion of participation of key stakeholders, identified in mapping of stakeholders interested in REDD (GTREDD, Indigenous REDD Roundtable and REDD Roundtable) by organizing workshops and training session on REDD plus at national level	320			80	80	80	80	320
	Sub-total	**341**			**101**	**80**	**80**	**80**	**341**
Strengthening of REDD Roundtables and Indigenous REDD Roundtable at regional level and strengthening of capacities for REDD plus	Organization of regional workshops with the participation of key stakeholders on the potential of the REDD plus mechanism (Loreto, Ucayali, Cusco, San Martín, Amazonas)	128			128				128
	Capacity strengthening program for national and region governmental and Nongovernmental organizations	7			7				7
		32			32				32
	Sub-total	**167**			**167**				**167**
Total		537	515	2,119	1,054	912	624	580	3,170

[113] Prepared based on the R-PP submitted by the Peruvian government to the World Bank (submitted on March 7, 2011) and on interviews conducted during field research

Appendix 5 Photographs of field research

1. Photographs of field research in Cambodia



Site of deforestation in a suburban area in Mondulkiri Province

Vehicle used by the illegal loggers arrested in Seima Forest Reserve in Mondulkiri Province

Illegal land conversion in Seima Forest Reserve in Mondulkiri Province (forest into farmland)

Natural forests in Seima Forest Reserve in Mondulkiri Province (containing second-growth forests)

Hearing of opinions of stakeholders conducted in Seima Forest Reserve in Mondulkiri Province

Tree sap collected in Seima Forest Reserve in Mondulkiri Province (supporting the livelihoods of residents)

2. Photographs of field research in Laos

Burnt field in Luang Phabang Province

Burnt field in Luang Phabang Province

Upland rice planted on a burnt field in Luang Phabang Province

Forest road leading to the mountainous area in Luang Phabang Province

Fuel wood for charcoal stored in a house located in the mountainous area of Luang Phabang Province

Natural forests located in Luang Phabang Province (containing second-growth forests)

3. Photographs of field research in Vietnam

Burnt field in Dien Bien Province

Seminar held at VNFOREST

Burnt field in Dien Bien Province (devastated by slash-and-burn agriculture over a large area, little forest is left)

Burnt field in Dien Bien Province (devastated by slash-and-burn agriculture over a large area, little forest is left)

4. Photographs of field research in PNG

Workshop on MRV that the research team participated in at PNG

Workshop on MRV that the research team participated in at PNG

Appendix 6 Interview Material for Field Research (for Japanese people)

二国間メカニズムの位置付け

二国間援助における森林クレジットの制度設計に係る調査の概要
JICA調査チーム（2011年7月8日）

- 2010年12月にメキシコで開催された国連気候変動枠組条約（UNFCCC）の第16回締約国会合（COP 16）において、従来のクリーン開発メカニズム（CDM）等とは別に、2013年以降の新たなクレジットメカニズムとして、**「新しい市場メカニズムの構築を検討することを決定する」**ことがCOP決定（カンクン合意）に盛り込まれた。
- このカンクン合意に基づき、日本では外務省、経済産業省、そして環境省を中心に、二国間メカニズムの活用に向けた取組が進められている。
- 2011年度には、環境省及び経済産業省が大規模に実現可能性調査（FS）事業を実施予定であり、**2013年以降の地球温暖化対策において、二国間メカニズムの実施が官民から注目されている。**

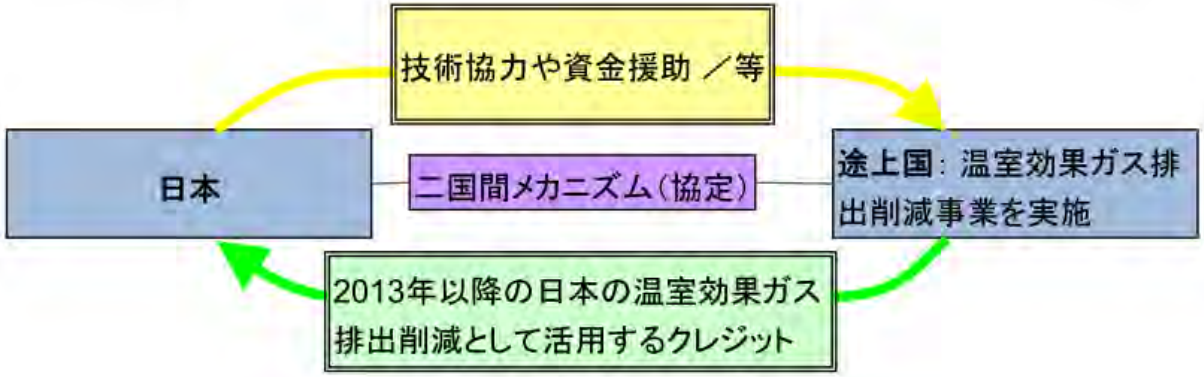


図　二国間メカニズムの概念

REDDプラス実施によるクレジット獲得に向けた取組

- こうした二国間メカニズムを進めるにあたり、**東南アジアにおいては、森林減少・劣化の抑制によるCO2排出削減への取組（REDDプラス）が、その多大な排出削減ポテンシャルからも大きな期待を集めている。**
- JICAでは、我が国では唯一、組織的に途上国での森林保全事業を実施してきており、中南米地域においても、REDDプラス実施に関する基礎的な知見を十分に有している。したがって、**こうしたJICAが有している森林保全・村落開発実績を拡大・発展させることで、我が国がREDDプラスを推進する上で、効果的かつ効率的なREDDプラスへの実施体制だと考えられる**

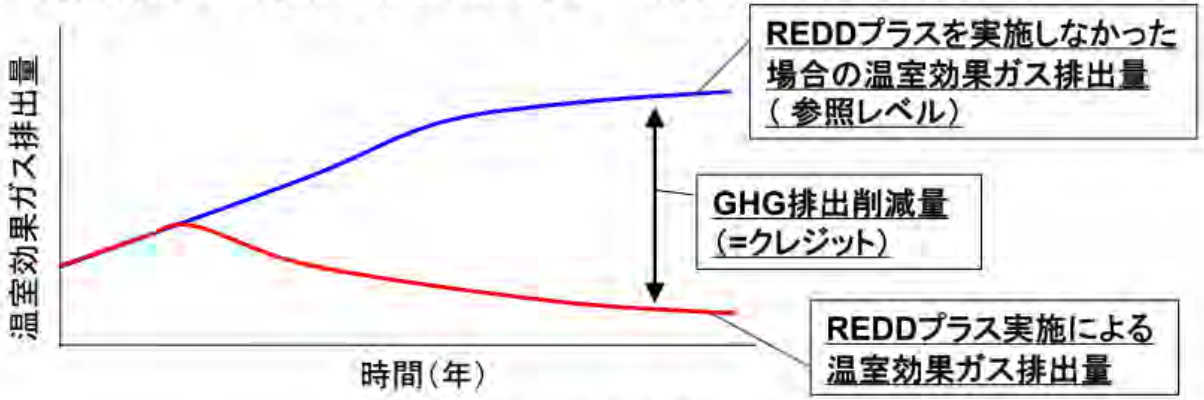
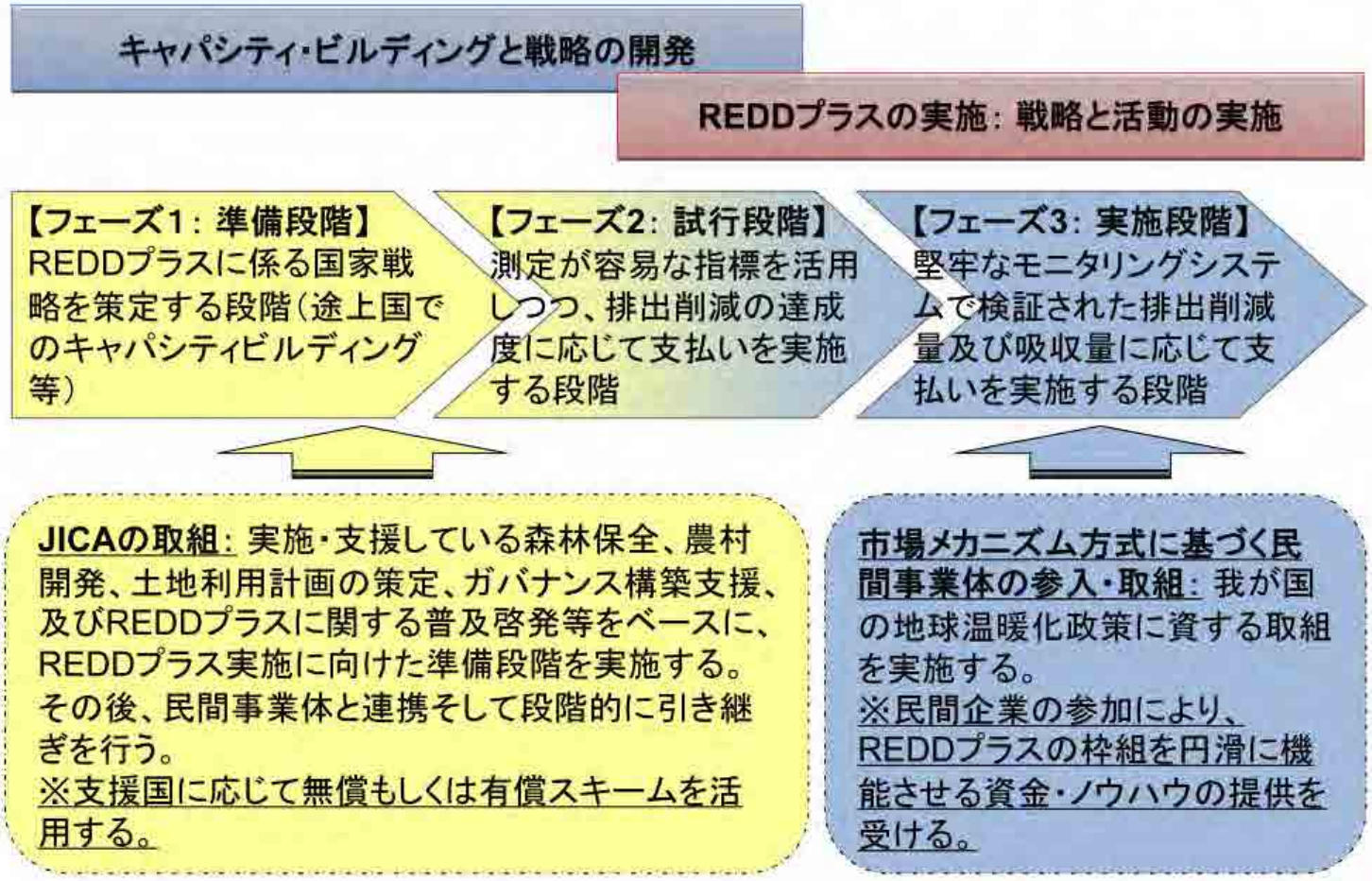


図 REDDプラスの概念

※REDDプラス実施は、温室効果ガス排出削減だけではなく、森林管理による生物多様性の保全等（Co-benefits）も期待される。

2

JICAと民間企業等の連携によるREDDプラスへのアプローチ（案）



二国間メカニズムの位置付け及びREDDプラス実施の枠組(想定)

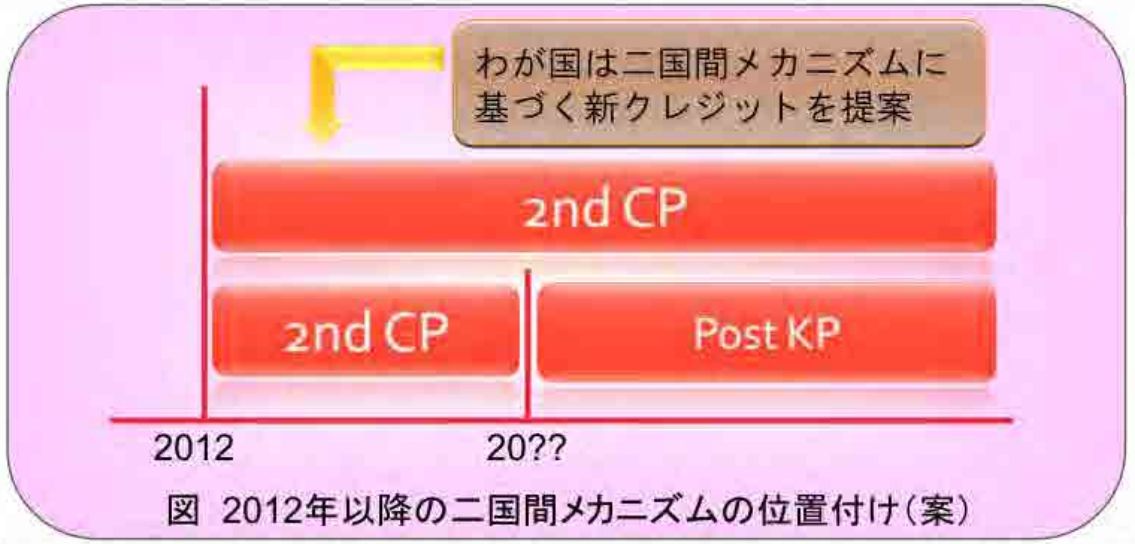


図 2012年以降の二国間メカニズムの位置付け(案)

日本と途上国の間での二国間メカニズム推進のための協定を締結する(例えば、日本とインドネシアは既に合意済)。

二国間メカニズムで政府機関(JICA等)、民間企業等が温室効果ガス排出削減・吸収事業を実施し、クレジットを創出する(既にベトナムでのREDDプラス実施を検討内の民間企業あり)。

日本の温室効果ガス排出削減目標達成に寄与できるクレジットを獲得する。

4

Appendix 7 Interview Material for Field Research (for oversea people)

Study on Potential REDD+ Credits in the Context of Bilateral Framework

Concept of the Bilateral Framework

- Under the UNFCCC, international negotiation has not reached the agreement of framework for the handling of REDD plus. However Governments in many developing and developed countries, enterprises, and NGOs have already initiated REDD plus activities on their own initiative.
- Japan's Government is also aggressive to promote REDD plus as one of the mitigation activities after 2013, and now promoting the bilateral framework as following;

Fig. Concept of the Bilateral Framework

Study Points

Study Objectives

■ We are gathering, reviewing, and analyzing existing situation of REDD plus in Vietnam.

Study Points	Details
REDD plus or Forestry strategy	■ Institution to implement REDD plus activities (REDD plus strategy and policies) ■ Progress of the technical issues: methodologies to establish reference level, MRV System and so on.
REDD plus situation	■ Experiences in the country (Pros and Cons experienced by REDD plus demonstration activities). ■ Collaboration between International Organization and each donor.
Finance situation	■ Management system of the budget for REDD plus. ■ Benefits allocation of the credits earned by REDD plus (how to distribute to local people?).