

New Mechanism Feasibility Study 2011 – Final Report

New Mechanism Feasibility Study for REDD+ through Revegetation at Denuded Lands and Woody Biomass-based Power Generation in Son La Province, Viet Nam

By Sumitomo Forestry Co., Ltd.

1. Study Implementation Structure

Sumitomo Forestry Co., Ltd.		
Environmental Business Department	Forest related business	Research relating to reforestation and forest preservation; business feasibility study
	Biomass business	Research relating to biomass power generation and wood processing
Tsukuba Research Institute		Remote sensing analysis; research relating to reforestation and forest preservation technologies
Contracted Parties		
Vietnam Forestry University		Survey relating to Vietnamese forests; survey of biomass usage
Mitsubishi Research Institute, Inc.		Reference level setting; research on methodology and MRV; consideration of safeguards for biodiversity etc.
Chiba University		Satellite image analysis; research on monitoring technologies

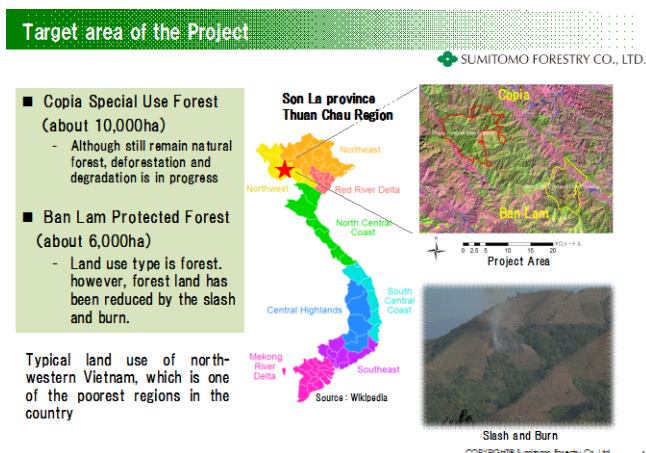
2. Project/Activity Summary

(1) Description of the Project/Activity

Carry out a feasibility study for a reforestation and forest preservation project in Son La Province in northwestern Vietnam, specifically the Ban Lam area of the Thuan Chau Protection Forest (also referred to herein as the Ban Lam Protection Forest—approx. 6,000ha of land classified as forestland that has been denuded by slash-and-burn techniques, with hopes to revegetate non-forested land) and the Copia Special-Use Forest (approx. 10,000ha of natural forest remains, but forest depletion and degradation is progressing; the area has biodiversity preservation significance). Carry out revegetation of land used for slash-and-burn cultivation and denuded land, which make up a large portion of the target area, where land use is typical for northwestern Vietnam. Specifically, carry out development of community forests for use by local people for gathering firewood and building materials, and production forests for the purpose of timber sales to outside parties, as well as regeneration of reserve forests through low-cost methods such as natural regeneration, and provide guidance on sustainable agriculture methods to replace slash-and-burn techniques. Through this establishment of agricultural and forestry business, reduce pressure on existing natural forest, and quantify the resulting increase in carbon accumulation by plantations in order to acquire emissions credits for the reduction in GHG emissions.

This method is expected to be effective throughout northwestern Vietnam. Large volumes of timber could be supplied from the region in the future if large-scale afforestation and revegetation activities were to be implemented through the advancement of the Bilateral Offset Credit Mechanism (BOCM) in conjunction with a Vietnamese policy promoting planting of forests. While the timber will also be used by surrounding farming villages as cooking fuel (wood and charcoal), building materials, and raw material for the timber industry, timber processing businesses will be attracted to manufacture high value-added timber products, and biomass power generation will be undertaken to supply electricity otherwise provided through thermal power generation, thereby reducing GHG emissions.

The aim is to run a project that contributes to sustainable development in the region by developing forests, and thereby helping to enhance their multi-faceted functions, such as cultivation of water resources, national land



conservation, and biodiversity preservation, and by establishing new industry in northwestern Vietnam, one of the country's poorest regions.

(2) Situation in the Host Country

1) Vietnamese Government Forest-Related Measures

While forest depletion continues in many developing nations, the area of forest in Vietnam has increased in recent years due to aggressive afforestation and reforestation efforts. However, in northwestern Vietnam, the target area of this project, forest coverage remains not that high, and depletion and degradation of natural forest are particularly big problems. Given these circumstances, the Vietnamese government's stance is to continue efforts to increase the area of forest, and at the same time actively pursue REDD+ activities with the assistance of international organizations and aid agencies.

Vietnam's climate change countermeasures fall under the jurisdiction of the Ministry of Natural Resources and Environment (MONRE) and are the focus of the United Nations Framework Convention on Climate Change (UNFCCC). However, agriculture and forestry initiatives such as REDD+ activities are coordinated by the Ministry of Agriculture and Rural Development (MARD). In particular, activities relating to forests and the forestry sector fall under the jurisdiction of MARD's Forest Administration Office (VNFOREST), and the Vietnam REDD+ Office was established in March 2011. Biodiversity measures basically fall under the jurisdiction of MONRE and are the focus of the Convention on Biological Diversity (CBD).

2) Donor and International Organization Activities Relating to Vietnamese Forests

As a country targeted by the World Bank's Forest Carbon Partnership Facility (FCPF) and the UN-REDD Programme, Vietnam receives a large amount of technical and financial assistance. UN-REDD allocated USD4.4 million toward development of the central government's organizational and technical capacity for administering and implementing forest management activities, and capacity building at provincial, district and commune levels within Lam Dong Province through two pilot projects, activities undertaken since 2009. Six provinces—Bac Kan, Lao Cai, and Ha Tinh Provinces in the north, Lam Dong and Binh Thuan Provinces in central Vietnam, and Ca Mau Province in the south—have also been selected as pilot provinces, and deliberations on implementation of full-scale REDD+ activities are to be held soon.

Besides UN-REDD, assistance in the area of forest management (and in relation to the forest sector) has been provided to Vietnam by organizations including the Netherlands Development Organisation (SNV), Winrock International, the Government of Finland, the United States Agency for International Development (USAID), the Food and Agriculture Organization of the United Nations (FAO), and the World Agroforestry Centre (ICRAF). The Japan International Cooperation Agency (JICA) also actively provides assistance in the areas of agriculture and forestry, and carries out projects related to REDD+, including a study on potential forests and land related to "climate change and forests," and the Project for Sustainable Forest Management in the Northwest Watershed Area in Dien Bien Province.

3) Electric Power in Vietnam Under the Power Development Master Plan VII

Vietnam's Power Development Master Plan VII (PDP7) outlines a policy for advancing use of renewable energy, stabilization of power supply, fuel diversification, and electrification of rural and mountainous areas. Currently, the electricity price for industry is 5-6 US cents/kWh, but state-run Vietnam Electricity (EVN) claims a sound financial balance would be difficult to maintain with current price levels and plans to raise the electricity retail price to 7.5 US cents/kWh by 2015, and to 9 US cents/kWh by 2020. Prices at which EVN purchases electricity have only been set for wind-generated power—8.8 US cents/kWh (Decision No. 37/2011/QD-TTg). Purchase prices for electricity generated by other means are determined on an individual basis through negotiation with EVN.

4) Timber Supply and Demand in Vietnam

Vietnam produced around 4 million m³ of timber in 2010, and imported around 4 million m³ of logs and processed timber. 90% of products are exported after processing. Wood chips account for around 3 million m³, furniture for around 3 million m³. Nearly 80% of exports from Vietnam, in terms of volume, go to one of four destinations—the United States, Japan, the European Union, or China. Imports come from Asia, North America, South America, Oceania or Africa, depending on the product. Imports account for 70-80% of raw materials used by timber processing mills in Vietnam, and north-central and central coastal areas consume the most imported timber. These areas produce a large amount of outdoor furniture and woodcraft

items mainly for export. Inland areas such as the mountains and Red River area in the north, and the central plains, consume domestic, mainly planted trees.

(3) Eligibility as a New Mechanism

There is sufficient international recognition of the significance of the project's aims, which are to increase carbon dioxide absorption and enhance the multi-faceted functions of forests (e.g. cultivation of water resources, prevention of soil erosion) through revegetation and forest preservation on land denuded by slash-and-burn cultivation. The basic concept of the project can be viewed as appropriate given the Vietnamese government's own strong stance in support of REDD+ activities as effective climate change countermeasures, as mentioned in the previous section, and in light of international discussions and negotiations currently progressing regarding the promotion of REDD+. However, international debate is still continuing about allocation of credits for the additional carbon dioxide absorption that would result from sustainable forest management and revegetation, as well as the format of the BOCM and specific rules, and no clear outcome has been reached. Regarding the use of biomass, the introduction of biomass power generation using materials like logging residue from forestland and waste wood would even contribute to the establishment of a low-carbon society in Vietnam, and at the same time help to alleviate the power shortage in rural areas. Furthermore, promotion of sustainable forestry business and agricultural activities would stimulate the local economy, and potentially lead to a drop in poverty.

The various benefits expected to result from the project, such as carbon dioxide absorption, reduction of emissions, biodiversity preservation, and contribution to sustainable development, are as such added benefits, and therefore it would be considered eligible to implement the project and evaluate its benefits under the BOCM. The efficiency of project implementation will also be improved through communication and collaboration with JICA projects already in progress, for example by ensuring consistency of policies relating to determination of reference levels, and by sharing data and using the same analytical methods. Making the most of the Japanese government's achievements in this manner will make stable and highly feasible project implementation possible.

(4) Plan for Spreading the Project/Activity

It will be important to nurture a common understanding, which will involve making citizens who engage in slash-and-burn agriculture, a primary cause of forest depletion and degradation, sufficiently aware of the necessity of forests and the significance and purpose of forest preservation. At the same time, strong leadership from government authorities will be required. In addition, it will be necessary to provide assistance for the creation of industry, with a focus on highly profitable sustainable agriculture as an alternative to slash-and-burn cultivation, and also financial incentives to engage in forest planting and preservation activities.

On the island of Java, Indonesia, where Sumitomo Forestry carries out timber processing business, agroforestry using fast-growing tree species and afforestation of low-productivity agricultural land have taken off in recent years. One reason for this is that a stable timber market is created, which allows (or is expected to allow) citizens to earn sufficient income at the time of harvesting. In the same way, if this scenario provides sufficient economic benefits for citizens and encourages self-initiated participation (i.e. a land use proposal providing genuine benefits for local people living on the land), spatial or temporal leakage is unlikely to occur, and if the project as a whole has business feasibility and appeal in terms of "carbon revenue (revenue from carbon fixation and emissions reduction) + business revenue," it is expected that continuity of REDD+ activities can be maintained.

3. Description of the Study

(1) Study Themes:

It is necessary to understand about the following to determine the feasibility of this project.

- The current state and future direction of forests and forestry in Son La Province
- Forest preservation activities reflecting local resident and community needs
- Matters relating to reference levels, GHG calculations and MRV
 - The current progress of deliberations on methods for setting the most favorable reference scenarios and reference levels, even though Vietnam's forest area is increasing
 - The practicality of ascertaining the extent of forest depletion and degradation using satellite image analysis
 - Information about state-run planting programs, planting programs of other donors, and rubber

plantations, etc.

- Matters relating to safeguards and environmental integrity
 - Safeguards in terms of biodiversity considerations and considerations toward local communities, and systems of participation
- Vietnam's electric power industry
 - Use of biomass power generation in Vietnam
 - Fuel price guideline for the power generation project
- Timber processing business in northwestern Vietnam
 - Timber processing business trends
 - Son La Province timber processing business environment

(2) Details of the Study:

1) Local Surveys (Incl. Preliminary Surveys)

1st Local Survey (Aug. 7 – 16, 2011)	
Visited parties	Vietnam Forestry University, JICA, Thuan Chau Protection Forest management board, Copia Special-Use Forest management board, Ministry of Agriculture and Rural Development (MARD)
Survey details	<ul style="list-style-type: none"> • Research relating to reference scenarios • Research relating to eligibility • Research relating to measures for ensuring environmental integrity • Research relating to other indirect effects • Research relating to comments from interested parties • Research relating to the contribution to host country sustainable development
2nd Local Survey (Aug. 28 – Sept. 4, 2011)	
Visited parties	Vina Eco Board Co., Ltd., Megatec Co., Ltd., Japan External Trade Organization (JETRO), IBC, JICA, Vietnam Forestry University, Copia Special-Use Forest
Survey details	<ul style="list-style-type: none"> • Research on the host country's legal system and policies, etc. • Gathering of information and data about REDD+ and biomass power generation business activities • Gathering of information about developments in international talks on new mechanisms • Research relating to methodology for demonstrating GHG emission reduction benefits • Research relating to reference scenarios • Research relating to monitoring methods and MRV
3rd Local Survey (Sept. 14 – 18, 2011)	
Visited parties	JICA, Vietnam Forestry University, Ken Green Farm (Japanese green tea production), Son La Province Department of Agriculture and Rural Development (DARD)
Survey details	<ul style="list-style-type: none"> • Research relating to methodology for demonstrating GHG emission reduction benefits • Research relating to reference scenarios • Research relating to methods for measuring, reporting and verifying (MRV) GHG emission reduction benefits • Research relating to eligibility • Research relating to measures for ensuring environmental integrity • Research relating to comments from interested parties • Research relating to evaluation of co-benefits • Research relating to the contribution to host country sustainable development
4th Local Survey (Oct. 30 – Nov. 14, 2011)	
Visited parties	Vietnam Forestry University, JETRO Hanoi, Ministry of Natural Resources and Environment (MONRE) (Biodiversity Conservation Agency), Vietnam Rubber Group, MARD, FAO, MONRE (Department of Meteorology and Climate Change), Japan Overseas Forestry Consultants Association (JOFCA)
Survey details	<ul style="list-style-type: none"> • Research relating to methodology for demonstrating GHG emission reduction

	<ul style="list-style-type: none"> benefits • Research relating to reference scenarios • Research relating to quantification of GHG emissions and reductions • Research relating to methods for measuring, reporting and verifying (MRV) GHG emission reduction benefits • Research relating to eligibility • Research relating to measures for ensuring environmental integrity • Research relating to other indirect effects • Research relating to comments from interested parties • Research relating to evaluation of co-benefits • Research relating to the contribution to host country sustainable development
5th Local Survey (Nov. 13 – 22, 2011)	
Visited parties	JETRO, Sojitz Corporation, FAO, Vietnam Timber & Forest Product Association, timber processing mills
Survey details	<ul style="list-style-type: none"> • Research on the host country’s legal system and policies, etc. • Gathering of information and data about REDD+ and biomass power generation business activities • Research relating to reference scenarios • Research relating to comments from interested parties • Research relating to funding plans
6th Local Survey (Dec. 8 – 17, 2011)	
Visited parties	Vietnam Forestry University, Copia Special-Use Forest, Ban Lam area of the Thuan Chau Protection Forest, Son La Province Sub-Department of Forestry (Sub-DOF), International Union for Conservation of Nature (IUCN), World Agroforestry Centre (ICRAF), Institute for Sustainable Forest Management and Forest Certification (SFMI), MARD, Embassy of Japan in Vietnam
Survey details	<ul style="list-style-type: none"> • Research relating to methodology for demonstrating GHG emission reduction benefits • Research relating to reference scenarios • Research relating to monitoring methods and plans • Research relating to quantification of GHG emissions and reductions • Research relating to methods for measuring, reporting and verifying (MRV) GHG emission reduction benefits • Research relating to eligibility • Research relating to measures for ensuring environmental integrity • Research relating to comments from interested parties • Research relating to the contribution to host country sustainable development
7th Local Survey (Feb. 15 – 22, 2012)	
Visited parties	Vietnam Forestry University, JICA, MARD, Son La Province Sub-DOF
Survey details	Briefing on summary of FS results, communication of gratitude for cooperation, and deliberation on further issues and approaches

2) The Current State and Future Direction of Forests and Forestry in Son La Province

Son La Province, where the project site is located, has a total land area of 1,412,400ha and comprises 11 districts. A number of government-run forest preservation and revegetation projects are underway in Son La Province, and forest coverage increased from 25.2% in 2000 to 42.1% in 2006 as a result. However, degradation of natural forest in the province continues, and the area of planted forest is not sufficient either. There remains a lot of bare or denuded land.

Land used for forestry accounts for around 70% with forestry playing the most important role in socioeconomic terms and in the lives of residents. But a large portion of that land consists of protection forests and special-use forests, and there is a shortage of production forests. There is not enough assistance from central or regional governments either. These and other reasons make it difficult for residents to make a satisfactory living from forestry.

The breakdown of area in terms of the three types of forest (production forests, protection forests, and special-use forests) was reviewed between 2006 and 2007. The protection forests portion decreased from

80.2% to 45.4%, and the special-use forests portion from 8.0% to 6.7%. The production forests portion increased from 12.0% to 47.9%. In response to the changing composition, Production Forest Development Policy for 2007-2015 and the Vietnam Forestry Development Strategy 2006-2020 were formulated, with a target to increase the area of forest from approximately 590,000ha to 770,000ha.

In regard to socioeconomics, the population of Son La Province was 1,007,511 according to December 2006 statistics, with 113,680 (11.3%) living in urban areas, and the remaining 88.7% living in farming villages. The average population density was 71 people/km². The size of the workforce was 541,451, or 53.7% of the province’s entire population. Just under 90% of the workforce engage in agriculture or forestry, and just over 10% engage in industry, construction or service. The population growth rate is relatively high at 1.59%.

Son La Province is home to people of 12 ethnic minority groups. The main groups are: Thai (54.0%), Kinh (18.0%), H’Mong (12.02%), Muong (8.12%), Dao (2.5%), Sinh Mun (1.64%), Kho Mu (1.49%), La Ha (1.02%), and others (0.64%). People of Thai ethnicity thus make up the majority in Son La Province, and the Kinh ethnic group, the largest in Vietnam, is relatively small. Two of the three communes in the Copia Special-Use Forest district (the project site) are predominantly H’Mong populations, the third being a predominantly Thai commune. The percentage of ethnic minorities (indigenous people) is therefore even greater in the project site. Due care is required when implementing forest-related projects in the area given that the matter of ethnic minorities is an extremely sensitive issue, and also because the site is located in a border region. However, if Japanese activities in the area, through the BOCM, contribute to sustainable development by ethnic minorities, providing a definite solution, then this would be a large contribution to the Vietnamese government.



Typical land usage in Son La Province (Coma area)



Land usage in Son La Province (Coma area)

3) Forest Preservation Activities Reflecting Local Resident and Community Needs

REDD+ refers to efforts to reduce GHG emissions through reductions in forest depletion and degradation, forest preservation, sustainable forest management, and larger forest carbon stocks, but REDD+ projects have to be aligned with the needs of local people and the local community. Below is a summary of requirements for the REDD+ project reflecting issues and requests obtained from the Son La provincial government and local residents.

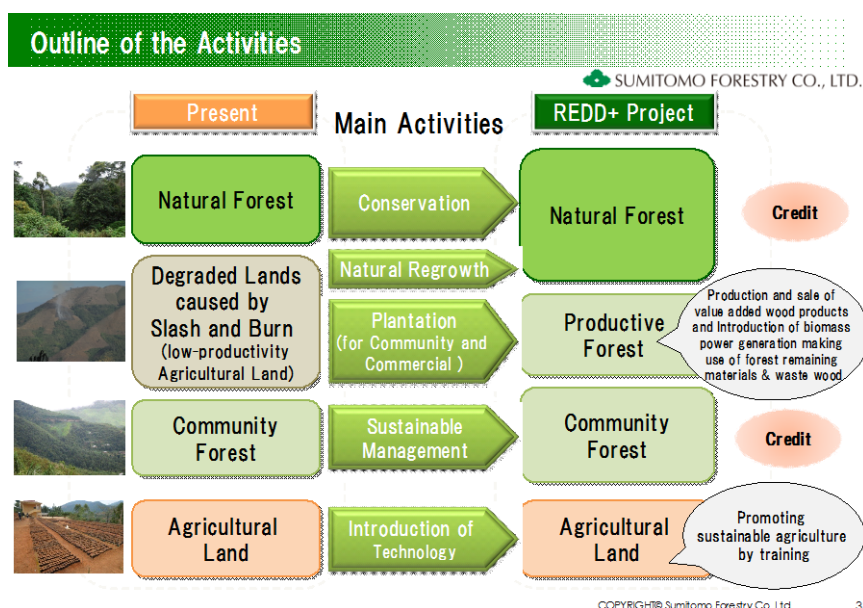
Table 3-1: Approaches Required to Achieve Forest Preservation

	Methods/Approaches	
Prevention/reduction of forest depletion and degradation	Direct methods	
	Strengthening of illegal logging countermeasures and patrols	
	Forest fire prevention, including creation of firebreaks	
	Indirect methods	
	Provision (supply) of wood for use by local residents	
	Livelihood improvement measures (agricultural guidance, assistance for stockbreeding, establishment of irrigation and other infrastructure); High-yield crop seeds and seedlings, livestock, agroforestry, post-harvest, etc.	●
	Assistance for promoting use of high-efficiency stoves (reduction of firewood usage)	
Mix between sustainable, high-profit agriculture (e.g. rubber and coffee) and forest preservation		
Forest preservation	Matters relating to land use: - Creation of usage plans for sloping terrain, appropriate crop rotation (incl. legume plant growing), prevention of soil run-off, etc.	●
	Environmental education programs	
	Assistance for biodiversity and other scientific surveys and research	
	Implementation of ecotourism	
Enhancement of carbon stocks	Forest protection and natural forest regeneration	●
	Industrial plantations (use of indigenous species and non-wood forest products)	●
	Plantations of trees for meeting local timber demand (<i>Schima</i> , etc.)	
	Plantations of fruit trees, etc. that contribute to the local economy (<i>son tra</i> , etc.)	
Sustainable forest management/operation	Strengthening of monitoring by government	
	Establishment of management frameworks for community forests and strengthening of management; Clarification and planning of land use for forests, definition of land boundaries, village-level management rules, etc.	●
	Assistance for introduction of GIS, remote sensing, communication and other advanced technologies, and for enhancement of monitoring technologies	
	Education and training for local authority personnel skill development and trainer development	●
Other	Resolution of funding issues; Low-interest loans with simple application procedures; Village-level funds	●
	Assistance for funding of forest protection activities	●
	Research support funds	●

●: Items requested through local hearings

Based on the above, implementation of the projects/activities below in the Copia Special-Use Forest and the Ban Lam Protection Forest, which are candidate sites for the pilot project, has been deemed effective taking into account the driving factors of forest depletion. This year's feasibility study focused on "b" and looked at its business feasibility.

- a. Preservation of community forests for the purpose of firewood and building material procurement by residents;
- b. Development of production forests for the purpose of timber sales to outside parties;
- c. Expansion of reserve forests through low-cost methods such as natural (seeding) regeneration;
- d. Establish sustainable agriculture methods to replace slash-and-burn techniques.



4) Matters Relating to Reference Levels, GHG Calculations and MRV

Information relating to the progress of deliberations within Vietnam was obtained during local surveys through visits to REDD+-related government authorities, international organizations and research institutions. The information was applied in research and deliberations about reference levels, GHG calculations and MRV. In setting boundaries, leakage and reference areas were established and analysis was conducted using Landsat satellite images. In order to ascertain changes in land use over time through satellite image analysis, current land use changes around the project area were surveyed and applied in satellite image analysis as training data.

5) Matters Relating to Safeguards and Environmental Integrity

Related information available within Vietnam was obtained during local surveys through visits to concerned REDD+-related government authorities, international organizations and research institutions. Local views were also gathered through hearings with related organizations and community representatives in Son La Province.

6) Vietnam's Electric Power Industry

➤ Use of biomass power generation in Vietnam

During the study, no information was obtained about companies engaging in biomass power generation businesses in northwestern Vietnam. The majority of biomass power generation operations in Vietnam are small-scale (10MW or smaller) private operations run by sugarcane mills using their own waste (e.g. bagasse). As of January 2012, 94 CDM projects had been registered for Vietnam, many of which were hydropower projects. Two registered projects were related to the use of biomass (direct combustion), and both are based on the use of rice husks and located in southern Vietnam. One of these projects is a biomass power generation business (10MW power generation business in Dong Thap Province), but it has yet to start full-scale operations.

➤ Fuel price guideline for the power generation project

The electricity price for industry in Vietnam is currently 5-6 US cents/kWh, which is cheap compared to other ASEAN countries. Prices at which EVN purchases electricity tend to be set lower than the electricity retail price. Under the current pricing system, companies wishing to enter the power generation business face costs exceeding EVN's purchase price and so there has been almost no investment in power generation business in Vietnam for the purpose of selling electricity. To determine the break-even line for biomass power generation, if it were to be undertaken under this project, the costs of power generation expected under the project were compared with EVN's electricity prices (see "(10) Funding Plan" for preliminary results). It was determined that the costs of biomass power generation would be about the same as EVN's current electricity retail price of USD57/MWh (average price for industry) if the price of the fuel was

USD0 (zero)/ton.

In northwestern Vietnam, plantation acacia trees of 10-20cm diameter sell for USD35-45/m³ (approx. USD58-75/ton) (information from hearings). A biomass power generation business using logs as the fuel would therefore be out of the question. The business would be feasible only if timber processing waste and logging residue were procured as fuel as cheaply as possible based on timber material cascade use.

7) Timber Processing Business in Northwestern Vietnam

Vietnam's northern and northern mountainous area is the second biggest area for timber production after the north-central and central area, and Phu Tho, Tuyen Quang, Yen Bai, and Hoa Binh Provinces are in Vietnam's top ten provinces with timber outputs of 182,000m³, 232,000m³, 200,000m³, and 137,000m³ respectively. The provinces are also home to paper, MDF, veneer, and timber factories, and there are many plans for new operations and production increases. But compared to these provinces, Lai Chau, Lao Cai, Dien Bien, and Son La Provinces in northwestern Vietnam produce small amounts of timber. In Son La Province, where the target site of the reforestation and forest preservation project is located, timber production is actually decreasing and the environment is not a very suitable location for a timber processing mill. Suggested reasons for this are difficulty in finding land suitable for planting, and low demand for processed timber products within the province. In view of the circumstances, Son La Province is advancing forest preservation and development activity as a way to develop the regional economy and plans to secure access to the most important raw materials by planting two million trees by 2020 for use in paper-making (27,130ha), plywood manufacturing (30,444ha), other industries (11,567ha), and as firewood.

If Son La Province's forest preservation and development progresses well, the area of industrial forestland will rise to 480,000ha and will be expected to meet the level of consumption predicted for 2020. Son La Province has also laid out a plan to build four plywood factories within the province that will consume the province's plywood raw material and create employment opportunities (each factory having an annual production capacity of 20,000-30,000 tons and employing an estimated 500-1,000 people).

4. Results of New Mechanism Project/Activity Feasibility Study

(1) Emission Reductions Resulting from the Project/Activity

1) Forest Management Segment

As a tentative method for estimating the benefits of reforestation and forest preservation, carbon stocks will be estimated from current land uses and forest growing stock, and past land use changes, based on the reference scenario, and emission reductions (including absorption) will then be estimated from the change in carbon stocks during implementation of the project. A percentage markdown will then be applied for considerations like leakage and continuity issues to calculate the reduction potential. See 4(2) onwards for details.

2) Biomass Use Segment

Emission reductions resulting from substitution of power consumed by plywood factories to be built under Son La Province's forest preservation and development plan with biomass-generated power will be calculated as a project benefit.

- Assuming the plywood factories are of the size indicated in Son La Province's forest preservation and development plan, it is expected that annual output will be 60,000m³ (requiring 120,000m³ of raw material annually), 40% of raw material will become waste wood or rejected timber, and logging residue equivalent to 50% of the harvested raw material will be generated.
- Using waste wood and logging residue generated during timber processing as fuel for biomass power generation, electricity will be supplied to timber processing mills and neighboring houses and facilities (5MW power generation capacity). The amount of fuel required for power generation is estimated to be around 50,000 tons/year (based on 20% generation efficiency and a calorific value of 3,726kcal/kg).
- Electricity will be supplied to neighboring houses and facilities but will not be connected to the grid.

Of the CDM methodologies for power generation already widely used internationally, emission reductions under this project will be calculated based on the methodology applicable given the conditions

of the project, namely “AMS-I.A. (ver. 14): Electricity generation by the user.”

(2) Specification of Reference Scenarios and Boundaries

1) Forest Management Segment

The reference scenario relating to forest depletion is the situation expected in the absence of the project—without revegetation or other action, current forest depletion and degradation would continue in the target sites of the project (the Ban Lam area of jurisdiction within the Thuan Chau Protection Forest, and the Copia Special-Use Forest, in Son La Province). A model for land use patterns based on the findings of local surveys and hearings is given below (Table 4-1). Research on rubber plantation plans found that while there was a plan to pursue a target of 50,000ha inside Son La Province, land was not suitable around the target sites of the project and there would be no direct effect.

Table 4-1: Model for Land Use Patterns in Northwestern Vietnam

Distance from houses ↑ Near ↓ Far	Houses and their surrounds	Living and cultivation of vegetables and fruit trees for private consumption; Small-scale breeding of pigs or other livestock
	Riverside areas and land with irrigation	Rice fields
	Hilly or mountainous areas in the vicinity of houses	Forests managed by the local community; Resource for firewood and building material supplies
	Hilly or mountainous areas relatively distant from houses	Slash-and-burn agricultural land, main crops being corn, cassava and paddy rice. Many households cultivate fields with an area of 10ha or more and there is quite a lot of inappropriate cultivation. It is a major cause of forest depletion and degradation. Grazing is also a cause of forest degradation and new plantation destruction.
	Remote and hard-to-access areas	Natural forest. But in some areas, little natural forest remains. Forest degradation is progressing due to illegal harvesting of timber for building materials. A lot of firewood gathering takes place near roads.

Regarding boundaries, three areas—project (Fig. 4-1, red and yellow areas), leakage (white) and reference (blue) areas—were established. The reference area is based on boundaries of communes, which are the administrative division in the area. The total area is 204,856ha.

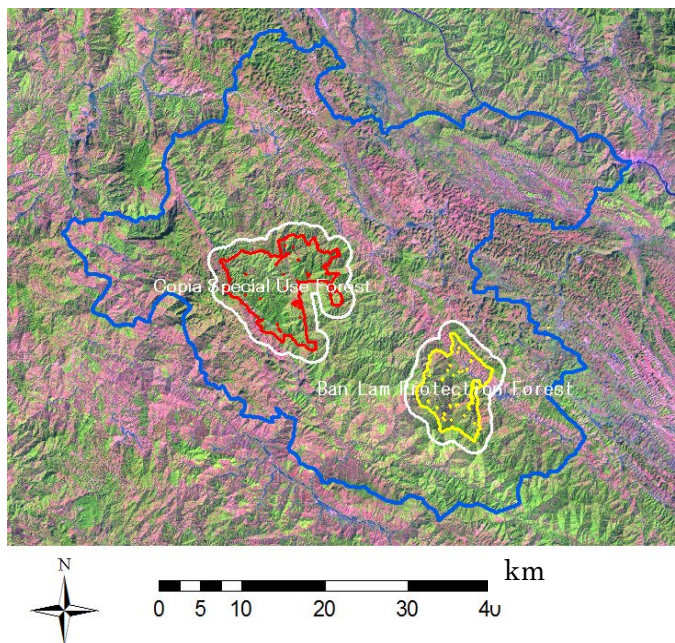


Fig. 4-1: Specified Boundaries

2) Biomass Use Segment

AMS-I.A. paragraph 8 defines the reference scenario (baseline): “The energy baseline is the fuel consumption of the technology in use or that would have been used in the absence of the project activity to generate the equivalent quantity of energy.”

Currently all administrative divisions in Son La Province are fed by the national power grid, making power supply easy to access. Therefore, importing electricity from the grid would be considered the power usage method with the lowest initial investment. New establishment of a thermal power plant using coal as fuel would involve lower initial investment than if using wood biomass, but given that coal prices in Vietnam are climbing in line with international trends, as well as the cost of transporting coal to Son La Province, feasibility is low. Therefore, importing electricity from the grid would be the business-as-usual (BAU) scenario in the absence of this project. The amount of electricity supplied to timber processing lines and neighboring houses and facilities (which does not include electricity consumption by the power-generating facility itself) shall be the amount of electricity under the reference scenario.

Regarding the specification of boundaries, AMS-I.A. paragraph 7 states, “The physical, geographical site of the renewable energy generating unit and the equipment that uses the electricity produced delineates the project boundary.” This shall also apply to this project.

(3) Monitoring Methods and Plan:

1) Forest Management Segment

Data relating to changes in land use and land cover will be analyzed to estimate the change in forest growing stock. Methods for ascertaining the benefits of the proposed action, and low-cost, practical methods for monitoring leakage need to be established, and highly feasible methods will be sought while referring to VCS methodologies.

Parameters of Forest Management Monitoring (Draft)

- Satellite image data analysis
- Project site/leakage belt forest coverage diagrams
- Results of participatory rural appraisal (PRA) of forest degradation
- Results of forest degradation sampling
- Burned area
- Area of forest depletion in the project site/leakage belt
- Total forest area
- Total area of forest depletion sampling, etc.

2) Biomass Use Segment

Regarding methods and plans for monitoring the CO₂ emission reductions, we suggest establishing a monitoring management framework that is incorporated into the management framework for the entire production activity and thus integrated with operations. ISO 9001 certification should be acquired for the timber processing mill/biomass power generation in order to establish a quality control framework, and at that time procedure manuals clarifying monitoring-related management frameworks should be created, and a framework for managing the activity status shall be established within auditing systems related to ISO 9001. As a result, monitoring will be carried out together with business operations, contributing to continued reliability. Regarding data to be monitored, rules shall be created to ensure regular recording and a reporting system shall be established. Calibration of measuring instruments may be subcontracted to outside parties as required. Additionally, it will be confirmed every seven years (coinciding with CDM project crediting period renewal) that access to the amount of biomass required by the project is possible without competition. Envisaged monitoring parameters are: electricity production, electricity imported from the grid, emission factors, and fuel consumption.

(4) Greenhouse Gas Emissions and Reductions

1) Forest Management Segment

The basic flow for analyzing GHG emissions and emission reductions from this project is shown below.

- (A) Specification of project areas and the reference area
- (B) Profile analysis of project sites
- (C) Reference scenario (and project/activity implementation scenario) formulation
- (D) Determination of emission reductions

(A – C) Processes up to Reference Scenario Formulation

The area of forest ascertained from satellite image analysis indicated that forest degradation has progressed during the period from 1993 to 2009. The two following analyses were undertaken in order to calculate the deforestation rate for the reference area.

- (a) 1990 basis: Deforestation rate based on the four years 1993, 1999, 2006, and 2009
- (b) 2000 basis: Deforestation rate based on the three most recent years, 1999, 2006, and 2009

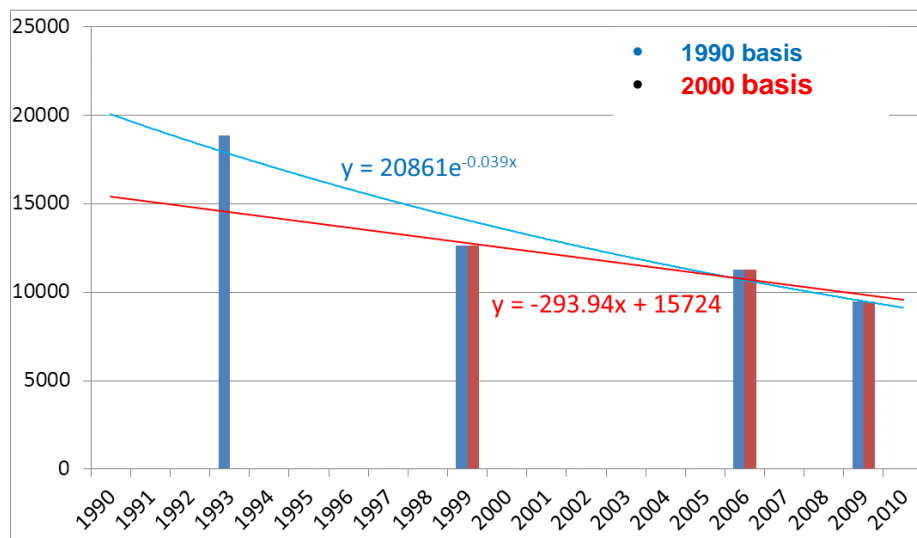


Fig. 4-2: Calculation of the Deforestation Rate for the Reference Area

The above analyses revealed two different past deforestation rates for the reference area depending on the base year and approximation methods as shown in the table below.

Table 4-2: Results of Analyses of the Deforestation Rate for the Reference Area

Analysis	Details	Deforestation rate
(a) 1990 basis (4 years)	Calculate the deforestation rate based on data for the 4 years 1993, 1999, 2006, and 2009. Use the exponential function. $R^2 = 0.9298$. Approximation: $Y = 20861e^{-0.039x}$ *However, x shall equal 1 for 1990, and x shall equal 21 for 2010.	- 3.82%/year
(b) 2000 basis (3 most recent years)	Calculate the deforestation rate based on data for the 3 most recent points, 1999, 2006, and 2009. Use a linear function. $R^2 = 0.9059$. Approximation: $Y = -293.94 \times x - 15724$ *However, x shall equal 1 for 1990, and x shall equal 21 for 2010.	- 2.61%/year

(C) Reference Scenario (and Project/Activity Implementation Scenario) Formulation

The project/activity scenario was established as follows.

- i. Project period: 20 years.
- ii. Planting sites and project land area: Planting will take place in areas classified as grass/bare land from images taken in 2009. The land area of the project will consist of 4,492ha of the Copia Special-Use Forest (9,758ha) and 4,159ha of the Ban Lam Protection Forest (6,303ha), or a total 8,651ha of 16,062ha of forestland.
- iii. Tree species, harvest ages, growing stock and yield tables: Trees to be planted, having been successfully planted in the area previously, are *Pinus massoniana* and *Styrax tonkinensis*. Harvest ages will be 20 years and 14 years respectively.
- iv. Annual planting area: With the objective of establishing a normal production forest under the project, the annual planting area will be the area of the project sites within the Copia Special-Use Forest and the Ban Lam Protection Forest divided by the harvest age (20 and 14 years respectively for *Pinus massoniana* and *Styrax tonkinensis*).

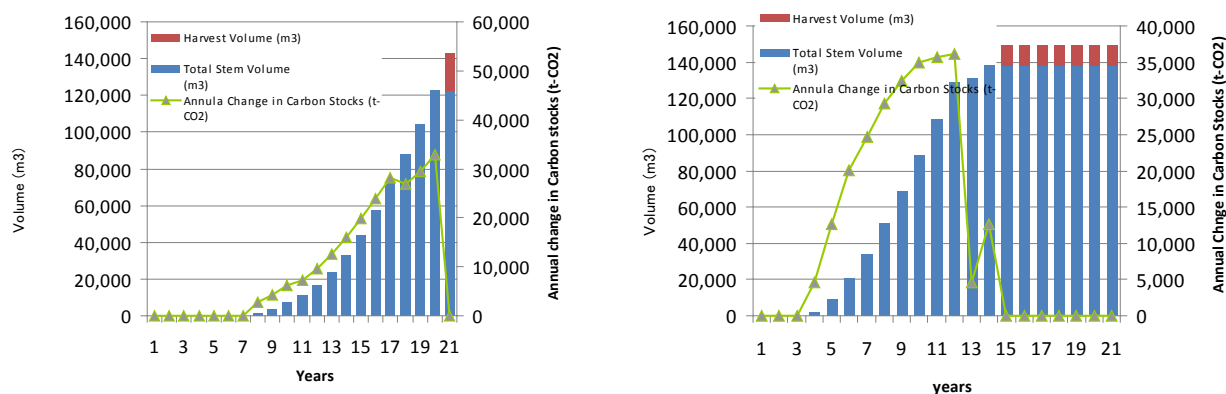


Fig. 4-3: Forest Stem Volume, Harvest Volume and Annual Change in Carbon Stocks—Copia Special-Use Forest (Left: *Pinus massoniana*; Right: *Styrax tonkinensis*)

- v. Planting costs: VND6,000,000/ha/6 years (roughly USD300), which is in line with Son La Province’s Program 661. Implementation of the activity will require other elements besides planting in order to achieve forest preservation and those costs will have to be booked at the time of the project’s execution. But those costs have to be carefully assessed and therefore are not included in this report.
- vi. Timber price: Based on local surveys, USD40/m³ for plywood core.
- vii. CO₂ emissions credit price: USD5/t-CO₂

(D) Determination of Emission Reductions

A preliminary calculation of emission reductions expected through implementation of this project came to 59,510 – 63,518t-CO₂/year. It was found that the expected emission reductions varied greatly depending on the assumed deforestation rate for the reference scenario. It must also be taken into account that reductions due to reforestation activity (increase in absorption) will be large.

Table 4-3: Expected Emission Reductions from Project Implementation for Each Base Year (Average Annual Reduction Potential 20 Years After Project Start)

Analysis	Reference scenario deforestation rate	Expected emission reductions (Copia-core and Ban Lam-core areas)
(a) 1990 basis (Based on data for 4 years)	– 3.82%/year	63,518 t-CO ₂ /year
(b) 2000 basis (Based on data for 3 most recent years)	– 2.61%/year	59,510 t-CO ₂ /year

2) Biomass Use Segment

Formulae

➤ Emission Reductions (ER,y)

Conforming to methodology AMS-I.A. (ver. 14), the following formula will be used to calculate emission reductions.

$ER,y = RE,y - PE,y - LE,y$	
ER,y	: Emission reductions by the project (t-CO ₂ /yr)
RE,y	: Reference scenario emissions (t-CO ₂ /yr)
PE,y	: Project emissions (t-CO ₂ /yr)
LE,y	: Leakage (t-CO ₂ /yr)

➤ Reference Scenario Emissions (RE,y)

Importing electricity from the grid is the reference scenario. The formula is as follows.

$RE,y = EG,y \times EF-grid$	
RE,y	: Reference scenario emissions (t-CO ₂ /yr)
EG,y	: Reference scenario electricity production (MWh/yr)
EF-grid	: Grid emission factor (t-CO ₂ /MWh)

Under this project, there is a possibility fossil fuels (coal) will be used in the case of a shortage of waste wood and logging residue generated. In line with AMS-I.A. paragraphs 16 and 19, if coal is used, the amount of electricity generated from coal should be deducted from the measured value for reference scenario electricity production and the outcome compared to the amount of electricity generated from biomass energy. The lower of the two values (Reference scenario electricity production (EG,y)) should be used. Specific fuel consumption (t/MWh) for every fuel that might be used under this project shall be determined prior to use.

➤ **Project Emissions (PE,y)**

Under this project, it is assumed that electricity required during start-up, back-up or maintenance phases of the biomass power generation shall be purchased from EVN. Resulting emissions shall be calculated using the following formula.

$PE,y = EG\text{-from grid},y \times EF\text{-grid}$	
PE,y	: Project emissions (t-CO ₂ /yr)
EG-from grid,y	: Electricity imported from the grid (MWh/yr)
EF-grid	: Grid emission factor (t-CO ₂ /MWh)

The amount of electricity used during start-up, back-up and maintenance phases will be small, and the frequency of such use will be low; therefore, at this stage project emissions shall be estimated as 0t-CO₂/yr.

➤ **Leakage (LE,y)**

This project entails the installation of a new power generation facility at the time of factory establishment, and therefore no leakage will result from the transfer of equipment. Neither is there any need to consider leakage resulting from competing use of fuel as the fuel will be newly procured in the form of wood waste generated within the factory or in plantations providing raw timber materials to be supplied to the factory.

Therefore, leakage (LE,y) from this project shall be 0t-CO₂/yr.

Calculation Results

$$\begin{aligned} ER,y &= RE,y - PE,y - LE,y \\ &= 20,197 \text{ t-CO}_2/\text{yr} \end{aligned}$$

Project emissions (PE,y) and leakage (LE,y) are 0t-CO₂/yr. Reference scenario emissions (RE,y) are 35,040MWh/yr \times 0.5764t-CO₂/MWh. Thus, a 5MW (power for the site: 1.0MW) power generation facility operating 24 hours/day, 365 days/year would expect to achieve CO₂ reductions of 20,197t-CO₂/yr. If four similar factories are built according to Son La Province's plan, a total reduction of 80,788t-CO₂/yr would be expected.

(5) MRV Methods for Emission Reductions

1) Forest Management Segment

Measurement

The degree to which forest depletion is prevented as a result of implementing revegetation activity as a forest depletion countermeasure under the project/activity implementation scenario will be quantitatively evaluated. When choosing monitoring methods, effort should be made to reduce the workload and cost of monitoring by looking for ways to simplify methods for obtaining sampling data on carbon stocks and related methodology and to make effective use of existing data such as deforestation rates.

Reporting

Based on the results of monitoring, the project operator shall compile and submit monitoring reports containing related data such as the area of forest depletion and emission reductions. It is also expected that the operator will be required to prepare and submit a project description and other documentation. Documentation to be prepared by the operator shall be clarified/determined through reference to existing VCS and other systems.

Verification

Regarding verification of monitoring reports, the procedures and parameters of confirmation required for verifying emission reductions shall be determined through reference to contents of ISO standards (ISO 14064:2006) and other already internationally recognized standards.

2) Biomass Use Segment

Measurement

Measurement shall conform to methods stipulated in “(3) Monitoring Methods and Plan.” All monitoring parameters shall be measured using electronic equipment and systems shall be created for equipment calibration and data management and reporting. Fuel purchased and fuel inventories shall be measured and cross-checked against actual consumption. Officially announced factors and calculations/estimates, or conservative figures, may be used for data that cannot be obtained on each occasion (e.g. fuel calorific values, grid emission factor), but statements about their appropriateness must be provided.

Reporting

A Project Design Document (PDD) will be prepared as a statement of the project outline and implementation structure, methods for specifying the reference scenario and boundaries, the project/crediting period, methods for quantifying emission reductions, monitoring methods and plans, environmental effects, and comments from concerned parties. After implementation of monitoring activities, a Monitoring Report will be compiled and will contain a project outline and information about the implementation structure, project progress, details about the monitoring framework, monitoring data, and calculation of emission reductions.

Verification

Verification will be carried out by a designated independent certification body. In the same way as for verification of CDM projects, it will be necessary to carry out verification prior to and after project implementation in order to ensure reliability. If details in the project plan are to be changed prior to implementation, change procedures are to be carried out in accordance with CDM rules (EB48, Annex 66, and EB48, Annex 67).

(6) Ensuring Environmental Integrity

1) Forest Management Segment

Environmental integrity will need to be ensured by implementing activities that take into account related measures and policies of the Vietnamese government and Son La Province. Measures to be taken into account include Vietnam’s Biodiversity Law and Law on Forest Protection and Development. Considerations related to environmental integrity for this project are as follows.

- Compliance with Vietnam’s Biodiversity Law and Law on Forest Protection and Development
- Study and implementation of sustainable agriculture and forestry
 - Sustainable land use management/forestry business and planting activity
 - Sustainable resource utilization
- Biodiversity preservation (including considerations for agriculture and forestry implementation)
 - Consideration toward continuity of forests/green zones (biodiversity corridors)
 - Protection of rare and endemic species
 - Management of introduced species
 - Protection and management of genetic resources
- Strengthening of biodiversity management functions
 - Education for project personnel and local residents
 - Establishment of systems for biodiversity preservation (e.g. database, monitoring systems)
- Distribution of benefits to local residents for the purpose of ensuring environmental integrity
 - Linking of REDD+ and PES*

*PES: Payments for Environmental Services. A system whereby local government provides funds to forest (or landscape) managers (land owners) as compensation for services (e.g. cultivation of water resources, landscape maintenance). These funds are sourced through payments collected from hydropower generation plant operators, for example. The system allows farmers to earn more from forests in their possession. It is considered highly compatible with REDD+ activity.

2) Biomass Use Segment

This is a project requiring an environmental impact assessment (EIA) based on Vietnam’s Law on Environmental Protection (Law No.52/2005/QH11). Therefore, the project may go ahead if an EIA-based study is carried out and measures for avoiding or mitigating expected adverse impacts (noise, air pollution, water pollution etc.) are accepted.

(7) Other Indirect Effects

A negative social or economic impact that might result from implementation of this project is a situation in which the shift from slash-and-burn agriculture to sustainable agriculture or production plantations does not spread well among local residents. Management of land uses, such as natural forest, production forest, and agricultural land, will effectively reduce the amount of land available for clearing and cultivation by local residents, and therefore there is a risk of adverse effects on the lifestyles of local residents and the economy if highly productive forestry does not become established. In addition, the majority of local residents within the project site belong to ethnic minority groups (indigenous people) like Thai and H'Mong, and therefore it will be essential to find a system that distributes benefits appropriately among local residents and determine that there will be no adverse effects on the local community and local culture.

(8) Comments from Interested Parties

The main comments so far received from stakeholders are listed below. Close communication with interested parties will be maintained as deliberation on the project continues.

Stakeholder	Main comments
Ministry of Agriculture and Rural Development (MARD)	This is the focal point of REDD+ activities. Private sector investments in the forest sector, even from overseas, are welcome. A comment was made about reforestation being treated as AR-CDM and not REDD+ activity, but this is viewed as a matter for consideration.
Ministry of Natural Resources and Environment (MONRE)	MARD coordinates REDD+ activities. AR-CDM is not an attractive option as large-scale projects are difficult, and there are many issues, including eligibility criteria, methodologies, and continuity. Regarding biodiversity in relation to REDD+, MONRE is interested in biodiversity corridor and safeguard aspects.
Son La Province Department of Agriculture and Rural Development (DARD)	The concept of this FS is consistent with Son La Province policy, and is therefore welcome. Wants to promote planting of trees like <i>son tra</i> . Wants assistance in strengthening community forest management.
Ban Lam Protection Forest/ Copia Special-Use Forest	Want to promote reforestation, but there are not enough funds. Planting programs like KFW7 are in place, but they will take time to implement.
Local community representatives	Would welcome a forest preservation project. Want activities to incorporate ideas/views of local residents.
Vietnam Forestry University/ Tay Bac University	Preserving remaining natural forest by promoting forestry is an effective approach. Northwestern Vietnam is in need of forest regeneration and forestry development.
International Union for Conservation of Nature (IUCN)	Most Vietnamese plantations are introduced species and therefore an issue for biodiversity preservation. Plantations of indigenous species might not be economical, but it would be nice if that could be compensated for by REDD+ funding.
FAO Vietnam	We are shifting from Phase 1 to Phase 2 and a specific MRV direction or methodologies will probably not be easy to determine. While future developments are unclear, the first UN-REDD pilot project was implemented in Vietnam, and progress may be made if the conditions are right.
World Agroforestry Centre (ICRAF)	One issue for REDD+ is a tendency for development of monoculture. REDD+ funding is an incentive for forest protection, and therefore private sector participation is desired. Regarding initiatives relating to community forests, it might be a possibility to pay compensation for monitoring work rather than compensation for carbon absorption.
JICA	Vietnam has little natural forest and promotes reforestation. There would be few merits for the country to exclude reforestation from REDD+. Low-impact logging of natural forest is also already underway, and there are fears about leakage affecting countries like Laos.
Son La Processing of Forest Products and Construction Co., Ltd. (timber processor in Son La Province)	It is difficult to select land for plantations in Son La Province for various reasons, including: unfavorable soil conditions; lack of planting technology; no manuals (need for education); steep slopes; and long distances from consumption areas. The company sells its products within Son La Province. Products like furniture come into Son La Province from other provinces, but timber products do not leave Son La Province due to restrictions on harvesting natural forests and taking from protection forests.

(9) Project/Activity Implementation Structure

The management structure outlined in the diagram below was proposed as the result of discussions with Son La Province Sub-Department of Forestry (Sub-DOF) given that participation by local government and the local community will be even more important than with project-based AR-CDM. Investors and provincial and district people’s committees will play a central role with technical assistance provided by Vietnam Forestry University (VFU) and Tay Bac University (TBU). Son La Province Sub-DOF and Sub-Department of Forest Protection will fill advisory roles. Local forest management boards, which will undertake activities, and commune and community representatives will also participate in project management. If the project goes ahead, the appropriateness of such an implementation structure will need to be reviewed.

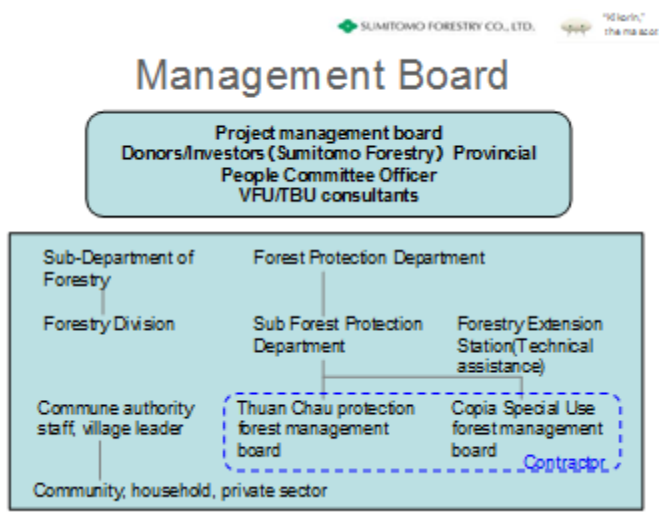


Fig. 4-4: Project/activity implementation structure

(10) Funding Plan

Regarding the balance of income and expenditure (USD) in the 20th year of the project, respective estimates for the cost of only the planting activity, revenue from GHG emission reductions and revenue from log sales, based on the conservative 2000-basis reference scenario, and the balance are USD-3,308,944, USD5,950,992, USD7,605,813, and USD10,247,861.

Revenue earned from GHG absorption exceeds the cost of planting. Because revenue from log sales will only occur from the harvest age (14th year), a framework whereby revenue from GHG emission reductions occurs early on is desired in order to ensure high business feasibility. And because costs for activity besides development of production forests are not included under this study, a more detailed study will be required before making a judgment on business feasibility.

Table 10-1: Balance of Income and Expenditure for the Entire Forest Management Segment Project (USD/20 years)

	Cost of planting activity (a)	Income from GHG reduction (b)	Income from Timber (c)	Balance (b) + (c) – (a)
Grand total (A+B)	-3,308,944	5,950,992	7,605,813	10,247,861

The envisaged funding plan and profitability for the biomass use sector are outlined below.

Preliminary Calculation Assumptions

- Initial investment: USD13.5 million (power generation facility only)
- Price of imported electricity: USD57/MWh (average price for industry)
- Generation capacity/efficiency: 5MW/20%
- Annual generation: 43,800MWh (24 hours/day, 365 days/year) (incl. 8,760MW of power for the site)
- Fuel: 100% biomass, logging residue and waste wood (fuel price: USD0/ton)
- Fuel calorific value: 3,726kcal/kg (IPCC Guidelines conversion)
- Fuel consumption: 50,548 tons/year

Preliminary Calculation Result

- Cost of power generation: USD54.4/MWh (assuming a credit price of USD5/t-CO₂)
USD56.3/MWh (excluding credit price)

Under the above assumptions, a preliminary calculation shows the cost of power generation would be about the same as EVN’s electricity retail price (USD57/MWh), but this is only in the case if fuel costs are zero. Therefore, project feasibility is low. In procuring funds necessary to implement the project, it is

assumed that public subsidies and incentives will be received, but it is also possible, if EVN's electricity retail price rises to 7.5 US cents/kWh by 2015, and to 9 US cents/kWh by 2020 in line with the PDP7, that the IRR will exceed the State Bank of Vietnam's base rate (9.0%), which is a potential benchmark. In this case, the feasibility of the project will increase.

(11) Measures for Promoting Use of Japanese Technology

Application of know-how on sustainable forestry business and planting technology possessed by Japan and Japanese corporations is possible. In particular, forest management incorporating forest certification and other environmental and social considerations would be effective in maximizing the value of timber products.

Japanese low-cost, environmentally-friendly timber harvesting and logging technologies can also be applied as topography in northwestern Vietnam is similar to Japan in some ways. It will be possible to make use of Japanese forestry experience and know-how, for example technology and human resources required for aspects such as forestry road design and establishment of road networks. High-performance forestry machinery suited to Japanese forests and Japan's topography and other conditions, as well as efficient systems of operation incorporating such machinery, will likely contribute to greater efficiency and value of forestry in the region if forestry were to take root there. In regard to the produced timber, technologies for timber processing and production of timber products that meet market needs will be employed, meaning there is potential for extensive application of Japanese forestry machinery and technology.

Through the study on biomass power generation facilities, information was obtained indicating that the cost of constructing an overseas biomass power generation facility with a 10MW generation capacity, including foundation work, would be JPY300 million/MW if arranged by a Japanese corporation, and JPY150 million/MW if arranged by a Chinese corporation. Generation efficiency would be 23% for the former, and 30% for the latter. Facilities arranged by a Japanese corporation would be expensive, but they would consist of environmentally-friendly boilers and ancillary equipment which clear Japanese gas emission regulations and for which the capability to produce electricity of a consistent quality continuously over the long term has been confirmed. The performance of Chinese facilities would have to be confirmed prior to actual consideration of equipment investment. In regard to timber industry and processing facilities, creation of employment opportunities will be taken into account, but it will be assumed that Japanese (or otherwise European, etc.) machinery and equipment with high production efficiency shall be installed for processes with a major influence on product quality in order to minimize the amount of equipment and make it easier to manage. In regard to installation of facilities prior to project implementation, investment should be kept as low as possible while taking advantage of incentives. An overall evaluation of machinery and equipment covering upkeep costs, maintenance, and utilization ratios needs to be performed to determine whether or not it should be installed.

(12) Outlook and Issues

Assumptions made from the study so far for the forest management sector can be summarized as follows:

- There is an enormous amount of land in northwestern Vietnam, and there is great potential for implementation of a GHG emissions reduction project.
- There is strong reason, in terms of environmental and social aspects, for pursuing REDD+ revegetation and forest preservation activities.
- Conditions are still not sufficient for an investment decision to be made.

As a result, the approach we would like to recommend is to aim for implementation of a small-scale pilot project (PP). The PP would be carried out as a preliminary activity until a bilateral REDD+ framework is established and would be considered an activity contributing to framework establishment and discussions and negotiations between Japan and Vietnam. While the project would be implemented as a social contribution activity in the near term, once a BOCM is concluded between Japan and Vietnam, the allocation of emission reductions will be determined according to the activities.

Fiscal 2012	Project preparation, implementation structure, permits/authorization, hosting assistance framework establishment, PDD preparation, investor subscription and adjustments
Fiscal 2013 onwards	Pilot project launch (10 years (5 years × 2), to be expanded/extended if a BOCM is established)

At that time, it will be necessary to carry out activities while maintaining close communication with JICA, which possesses a lot of knowledge and is already advancing activities in Dien Bien Province where the land situation is similar to the site under study. It would be best to implement the PP through a private sector partnership on social contribution. Vietnamese government approval will also be required to advance the activities as a demonstration project.

Regarding the biomass use sector, a study on the feasibility of timber processing mills can be carried out once access to raw material has been secured. To do this, one issue will be the ability to identify areas in northwestern Vietnam, including Son La Province, allowing stable procurement of raw timber material and fuel. Then a detailed study of conditions for stable procurement of raw timber material and fuel will be carried out alongside a feasibility study on timber processing mills and biomass power generation. This will require knowledge of the progress of forest preservation and development plans, planting projects and timber processing mill construction plans in northwestern Vietnam.

5. Results of Research Relating to Co-benefits

For this project, biodiversity preservation is extremely important from a perspective of ensuring environmental integrity. The target region is an area of significance for biodiversity preservation, and preserving it would also be considered important from a perspective of co-benefit creation. Biodiversity was therefore put forward as a co-benefit of the project and a study into specific evaluation methods was undertaken. It was determined that the activities would provide the benefit of an expected increase in biodiversity in protected areas of the area designated for forest rehabilitation.



6. Results of Research Relating to the Contribution to Sustainable Development

Regarding the contribution to sustainable development, activities contributing to measures or plans of the Vietnamese government or Son La Province relating to sustainable development will be demanded. Measures and plans to which the project activities may contribute are indicated below.

The Vietnam Forestry Development Strategy (2006-2020) is Vietnam's official development strategy relating to forests. The document is based upon the earlier Vietnam Forestry Development Strategy (2001-2010) and was approved by the Ministry of Agriculture and Rural Development (MARD).

This document offers the following four viewpoints on forestry development.

1. Forestry development is to integrate the management, protection, and appropriate utilization of resources, starting from afforestation and reforestation, to the harvesting, processing of forest products, environmental services, ecotourism, etc.
2. Forestry development is to make significant contributions to economic growth, poverty reduction and environmental protection.
3. Sustainable management, utilization and development of forests are the foundation for forestry development.
4. Forestry development has to base on speeding up and making more profound the policy related to socialization of forestry activities, and attracting investment resources for forest protection and development.

The strategy also includes an objective to sustainably manage, preserve, develop and use 16.24 million hectares of land intended for forestry. The ratio of land with forest will be increased to 42-43% by 2010, and 47% by 2020. Tasks required to achieve this are presented in relation to economic, social and environmental aspects.

In view of measures and plans advanced by the Vietnamese government, such as a national plan to plant five million hectares of forest, this project will contribute to sustainable development by increasing the area of forest through planting, and carrying out forest management and natural forest preservation based on the categories of natural forest, protection forest and community forest, as well as by providing local residents a source of revenue, and is therefore consistent with the viewpoints and objectives of the Vietnam Forestry Development Strategy. While the project is also consistent with the original objectives of the five million hectare national reforestation plan, it should be considered a sustainable plan that tackles issues remaining with the national plan, specifically preservation of natural forest, prevention of the spread of monoculture, and use of tree species suited to local culture.

Attachments to the Final Report (Summary)

No attachments.