

Annex A

**Final Report
for
the Preparatory Survey
on the Project for Restoration and Sustainable Management of Protection
Forests in the Socialist Republic of Vietnam**

**Annex A: Draft Terms of Reference and Cost Estimation for Survey and
Mapping and Socio-economic Baseline Survey**

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Annex A: Draft Terms of Reference and Cost Estimation for Survey and Mapping and Socio-economic Baseline Survey

1. Draft Terms of Reference and Cost Estimation for Survey and Mapping

1.1 Introduction

The Project for Restoration and Sustainable Management of Protection Forests aims at (i) restoration and improvement of watershed and coastal protection forests, (ii) strengthening the capacity of the local governments and the owners of protection forests, and (iii) improvement of the livelihoods of communities who will manage protection forests. The Project will be implemented in 12 provinces in the central coastal area of the country, namely, Thanh Hoa, Nghe An, Ha Tinh, Quang Buhn, Quang Tri, T.T.Hue, Quang Nam, Quang Ngai, Bubh Dinh, Phu Yen, Ninh Thuan, and Binh Thuan.

The main components of the Project are: i) survey and detailed planning, ii) capacity development of government staff and local community, iii) development and improvement of protection forests, iv) livelihood improvement, v) small scale infrastructure development for livelihood improvement, vi) forest fire control, vii) monitoring and evaluation, and viii) project management with consulting services. The following table gives the tentative work quantities of the Project by component.

Component	Major Works
Preparatory work	<ul style="list-style-type: none">- Establishment of one CPMU at the central level and 12 PPMUs at the provincial level- Deployment and employment of the project staff- Preparation and establishment of regulations and guidelines for implementation of the project- Development of forms/format for regular monitoring and monitoring- Development of draft TORs for the contractors to be hired for implementation of the project components- Procurement of equipment for CPMU and PPMUs including a total of 26 nos. of 4x4 vehicles and 62 nos. of motorcycles.
Survey and detailed planning	<ul style="list-style-type: none">- About 120,260 ha of forest inventory and mapping (new sites only)- Preparation of land use plan of about 120,260 ha with 167 communes (new sites only)- Baseline surveys in 167 communes- Preparation of detailed designs for forest development and improvement component
Capacity development, information dissemination, and phase-in / phase-out works	<ul style="list-style-type: none">- Capacity development of i) 12 CPMU staff members, ii) 149 PPMU staff members in the 12 provinces, iii) 570 PFMB staff members (@10 staff/PFMBs) in 57 PFMBs, and iv) district and commune extension workers in the 12 provinces- Information dissemination/public awareness raising in 167 communes- Organization of participating households into forest users' groups in 167 communes- Capacity development of the households in managing the groups and improving/preserving protection forests in 167 communes
Development/improvement of protection forests	<p><u>Watershed Protection Forest</u></p> <ul style="list-style-type: none">- Reforestation/Afforestation: 23,090 ha- Improvement of existing plantation: 3,300 ha- Assisted natural regeneration (ANR) with enrichment: 4,700 ha- Assisted natural regeneration (ANR): 21,250 ha- Forest protection: 63,970 ha <p><u>Coastal Protection Forest</u></p> <ul style="list-style-type: none">- Reforestation/Afforestation: 1,550 ha- Improvement of existing plantation: 800 ha

Component	Major Works
	<ul style="list-style-type: none"> - Enrichment planting: 1,600 ha <u>Improvement of SPL-III forests</u> - Forest protection: 4,450 ha - Enrichment planting: 1,000 ha - Vegetation clearing & thinning: 10,220 ha <u>Silviculture Infrastructure Development</u> - Forestry roads: 387 km (watershed) and 16 km (coastal) - Firebreak line: 412 km (watershed) and 28 km (coastal) - Fire watch tower: 62 units (watershed) and 2 units (coastal) - Forest protection station: 60 units (watershed) and 4 units (coastal) - Information board: 67 units (watershed) and 3 units (coastal) - Nursery: 22 units (watershed) and 1 unit (coastal)
Livelihood improvement	<ul style="list-style-type: none"> - Livelihood development needs assessment in 167 communes (new sites) and 35 communes (SPL-III sites) - Introduction and development of demonstration plots/livelihood development models in 167 communes(new sites) and 35 communes (SPL-III sites) - Technical training for the participating households in 167 communes(new sites) and 35 communes (SPL-III sites)
Small-scale infrastructure	<ul style="list-style-type: none"> - Survey and detailed design of proposed infrastructure - Construction of small-scale infrastructure; the following are tentative targets: - Rural road: 170 km (watershed) and 16 km (coastal) - Irrigation : 558 ha (check dam, irrigation canal & culvert in watershed) - Water supply system: 6 units (watershed) and 2 units (coastal)
Forest fire control	<ul style="list-style-type: none"> - Provision of equipment for forest fire control to 57 PFMBs (new sites) - Forest fire control training in 12 DARDs, 57 PFMB, 54 DPCs, and one township
Monitoring and evaluation	<ul style="list-style-type: none"> - Progress monitoring: Monthly, Bi-annual and Annual monitoring - Evaluation: Initial, Mid-term and Terminal evaluations
Technical cooperation / Consulting services	<ul style="list-style-type: none"> - International consultant: 147 man-months - National consultant: 253 man-months

The Survey and Mapping is one of the project preparatory works to be carried out at the beginning of project implementation. It aims to prepare land use and forest classification maps of the project areas through analysis of high resolution satellite images with 2.5 m x 2.5 m resolution (such as CARTOSAT-1) and ground truth survey cum forest inventory survey. Although each and every DARD has the forest classification maps covering the respective provinces, these maps are, in general, based on the outdated data and information and not detailed enough for preparing a detailed design of activities under the forestry development component. Hence, updated maps with certain accuracy shall be prepared for planning and monitoring of the Project.

1.2 Objectives of Survey and Mapping

The primary objectives of the Survey and Mapping is to develop the base maps for planning and designing of the forest development components (e.g., reforestation/afforestation, ANR, and forest protection) with local communities. It specifically aims to:

- develop land and forest classification maps on a scale of 1/10,000 covering the target areas; and
- develop GIS-based cum photo-like maps on a scale of 1/10,000 covering the target areas, which can be used for planning with local communities.

1.3 Scope of Work

Major activities to be carried out in the survey and mapping are as follows.

- (1) To purchase high resolution satellite images (with no or less cloud) covering the target project areas in the 12 provinces. Satellite images shall be selected from the existing archives of the recent images covering the target project areas.
- (2) To analyze the land use and forest cover conditions of the satellite images with ground truth verification
- (3) To prepare land use/forest classification maps covering the target project areas in the 12 provinces on a scale of 10,000
- (4) To prepare GIS-based-cum-photo-like maps or satellite photos overlapped with GIS data (contour lines, roads, demographic and land use boundaries, etc.) covering the target project areas in the 12 provinces on the same scale

1.4 Main Tasks of the Contractor

The contractor shall perform the following tasks:

- (i) To design a work plan for the survey and mapping in consultation with CPMU and PPMUs;
- (ii) To be responsible for procurement of the quality satellite images that can be used for the survey and mapping;
- (iii) To arrange necessary equipment and facilities to analyze the satellite images for the preparation of land use/forest classification maps
- (iv) To employ and arrange the ground truth survey teams and conduct the field survey in coordination with PFMBs and PPMUs in the 12 provinces
- (v) To analyze the collected data and information and generate the outputs required

1.5 Expected Outputs

- a. Land use / forest classification maps of the target project areas in the 12 provinces (on the scale of 1 to 10,000)
- b. Photo-like maps with GIS data (e.g., contour lines, roads, demographic and land use boundaries, etc.) of the target project areas in the 12 provinces (on the scale of 1 to 10,000)

1.6 Time Frame

The survey and mapping will be carried out in the first year of the project. All the works shall be completed within 12 months after signing the contract.

1.7 Estimated Cost of Survey and Mapping

Table A-1 shows the cost estimation for the survey and mapping.

2. Draft Terms of Reference and Cost Estimation for Socio-economic Baseline Survey

2.1 Introduction

< same as Section 1.1>

The Socio-economic Baseline Survey is one of the project preparatory works to be carried out at the beginning of project implementation. It aims to collect socio-economic baseline data and information of the target villages. The socio-economic baseline data will be used as basis for evaluation of the project impacts on socio-economic conditions in the project areas.

2.2 Objectives of Socio-economic Baseline Survey

The primary objective of the baseline survey is to develop a data base of socio-economic situation of the project areas before project interventions, so that the project can gauge how far the project can have improved the household economy or household's dependency on forest resources at the end of the project. Specifically, the baseline survey aims to:

- collect socio economic data and information of commune and local households;
- identify the extent of local people's dependency on forest resources and the causes of deforestation or forest degradations; and
- identify development needs of communes and local households.

2.3 Scope of Work

Major activities to be carried out in the survey and mapping are as follows.

- (1) To select 100 communes or villages among the target communes or villages in the target provinces;
- (2) To select 12 local households per commune/village who are willing to participate in the project and another 12 households who will not take part in the project. For both groups (project participants and non participants), 12 households shall be composed of 4 poor households, 4 medium and 4 rich or well-off households;
- (3) To conduct the interview survey using a predetermined questionnaire form. The items to be surveyed shall include, but not limited to, the following.
 - General background of the household: family size, number of main and supported laborers, ethnicity, etc.
 - Annual income level, main income sources and income/expenditure balance
 - Healthcare status and education
 - Understanding of JICA project by the household.
 - Needs of support/ assistance by the household
 - Recommendations/proposals for possible intervention to support local people, especially the household under contract with project.

- (5) To interview the commune/village leaders to collect the general socio economic information of the target communes/villages. The following topics are to be covered.
 - General information: Population, ethnicity, rural labor force
 - Production: Agriculture (land area, main crops, livestock population, farming systems and practices, etc), forestry, fisheries, and handicrafts if there is.
 - Infrastructure: Road system and transportation, irrigation, electricity, market, etc.
 - Social services: education, healthcare, dirking water and sanitation, etc.
 - Development and poverty alleviation projects or programs implemented or being implemented in the commune.
 - Mass-organizations operated in the commune (farmer union, women union...).
 - Difficulties faced by the commune and possible support activities recommended.
- (6) To develop database of the interview survey results in Excel sheets so that data can be easily used for evaluation in the future.

2.4 Main Tasks of the Contractor

The contractor is to perform the following tasks:

- (i) To design a work plan for the baseline survey in consultation with CPMU and PPMUs;
- (ii) To prepare questionnaire forms to be used in the survey in consultation with CPMU;
- (iii) To arrange necessary equipment and facilities for the survey;
- (iv) To employ and arrange the field enumerators and data encoders for the survey;
- (v) To make necessary arrangements/coordination to conduct the field surveys; and
- (vi) To analyze the collected data and information and generate the outputs required

2.5 Expected Outputs

- a. Data base of socio economic data of the target villages in Excel format
- b. Baseline survey report
- c. Electric data of the above-mentioned outputs

2.6 Time Frame

The baseline survey will be carried out after selection of the target villages. It shall be completed within eight (8) months after signing of the contract.

2.7 Estimated Cost of Socio-economic Baseline Survey

Table A-2 shows estimated cost of the survey.

Tables

Table A-1: Cost Estimation for Survey and Mapping

No	Category	Unit	Unit cost		Quantity	Total (VND)
			(US\$)	(VND)		
1	Remuneration					<u>1,399,520,640</u>
	(1) Team leader	man-month	900	15,271,200	6	91,627,200
	(2) GIS making	man-day	40	678,720	492	333,930,240
	(3) Satellite image pre-processing	man-day	40	678,720	492	333,930,240
	(4) Identifying interpretation keys	man-day	40	678,720	164	111,310,080
	(5) Satellite image interpretation	man-day	40	678,720	492	333,930,240
	(6) DSA	Man-day	10	169,680	1,148	194,792,640
2	Purchase of maps and satellite images					<u>3,532,368,000</u>
	(1) Purchase of satellite images*	Scene	800	13,574,400	245	3,325,728,000
	(2) Purchase of VN2000 topo map (1:10,000)	Sheet		420,000	492	206,640,000
3	Expenses for Field Work					<u>890,635,200</u>
	(1) Field work	man-day	30	509,040	984	500,895,360
	(2) Post field work	man-day	50	848,400	108	91,627,200
	(3) Transportation	trip		90,000	1,148	103,320,000
	(4) Accomodation	Man-night	10	169,680	1,148	194,792,640
4	Printing and Remort Making					<u>66,560,000</u>
	(1) Prepare and printing maps for field work	Sheet		80,000	108	8,640,000
	(2) Printing Forest status map for field work (3 copy)	Sheet		80,000	424	33,920,000
	(3) Reporting	report		12,000,000	2	24,000,000
5	Communication cost	month		2,000,000	6	<u>12,000,000</u>
7	Equipment, power, stationary..etc	month		20,000,000	6	<u>120,000,000</u>
8	Sub total					<u>6,021,083,840</u>
9	Management fee (8%)					481,686,707
TOTAL (without VAT)						6,502,770,547

This cost excludes purchase of satellite images.

Exchange rate 1 US\$ = 16,968 VND

Table A-2: Cost Estimation for Socio-economic Baseline Survey for 2,400 households

		Unit	Q'ty	Unit Price (VND 1,000)	Amount (VND 1,000)
1 Field Survey					1,288,700
1.1	Team Leader (one person)	Person-month	3	15,000	45,000
1.2	Enumerators (15 persons)	Person-month	45	12,000	540,000
1.3	Per Diem				
1.3.1	Team Leader (one person)	Person-month	3	10,000	30,000
1.3.2	Enumerators (15 persons)	Person-month	45	10,000	450,000
1.4	Transportation	Car-day	100	2,000	200,000
1.5	Cost for local staff (Guide & Interpreter) 30 persons	Person-month	60	10	600
1.6	Cost for data collection from communes	Commune	60	100	6,000
1.7	Cost for interviewing households	Household	2400	2	4,800
1.8	Reproduction of questionnaire				
1.8.1	Commune level survey (10 pages)	set	60	5	300
1.8.2	Household level survey (10 pages)	set	2400	5	12,000
2 Data Analysis & Report Preparation					155,000
2.1	Team Leader (one person)	Person-month	1	15,000	15,000
2.2	Encoder (10 persons x 10 months)	Person-month	30	4,000	120,000
2.4	Reproduction of report				
2.5	Others				20,000
3 Sub-total (1 + 2)					1,443,700
4 Management fee (8%)					115,496
TOTAL COST (without VAT)					1,559,196

Annex B

**Final Report
for
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on the Project for Restoration and Sustainable Management of Protection
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**Annex B: Estimated Cost and Annual Disbursement of the Capacity
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Annex B: Estimated Cost and Annual Disbursement of the Capacity Development Component

1. Cost Breakdown of the Component

The cost for the component is composed of three parts: i) the cost for capacity development of the government staff, ii) the cost for capacity development of local community including information dissemination, and iii) the cost for phase-in/-out works. **Table B-1** gives the breakdown of the costs for each activity of the component by province. Its summary is also shown below.

Provinces	Capacity Development		Phase-in/Phase-out	Total
	For Government staff	For Local Community		
CPMU	4,571	415	518	5,503
Than Hoa	2,514	1,452	70	4,036
Ngen An	2,514	1,253	50	3,817
Ha Tinh	2,412	1,460	80	3,952
Quang Binh	2,207	1,113	45	3,364
Quang Tri	2,617	1,921	124	4,662
T.T. Hue	2,207	2,198	149	4,554
Quang Nam	2,514	1,878	109	4,502
Quang Ngai	2,309	1,763	100	4,171
Binh Din	2,412	1,506	80	3,997
Phu Yen	2,207	1,146	50	3,403
Ninh Thuan	2,310	1,510	85	3,904
Binh Thuan	2,207	1,592	75	2,874
Total	33,002	19,156	1,527	53,684

2. Annual Cost Disbursement of the Component by Provinces

Table B-2 shows the estimated annual cost of the capacity development component in CPMU and PPMUs. The annual cost of the component for CPMU is estimated based on the implementation schedule and the cost of each activities as shown in **Table B-3**. For the annual cost of the component at provincial level, that of Quang Tri province is estimated first based on the implementation schedule as given in **Table B-4**. The annual cost of other provinces are estimated referring to % of annual cost of the subcomponents for Quang Tri province and the cost of sub-components in each province.

3. Unit Cost for the Activities under the Component

Most of the unit costs of the activities under the component were estimated based on the government regulations, namely, MPI circular No. 61/ QD-BTC of 2 Nov 2006 and MARD circular No. 526/QD-BNN-TC of 3 Mar 2009. Some activities were also estimated based on the past experiences, like actual payments made in SPL-3 Afforestation project. **Table B-5** to **Table B-17** show how the unit costs for the major activities were estimated.

Tables

Table B-1 Estimated Cost for the Capacity Development Component (1/3)

	Unit Cost (VND 1,000)	Reference	CPMU		Khanh Hoa		Nghe An		Ha Tinh		Qua
			Q'ty	Amount (Mil. VND)	Q'ty	Amount (Mil. VND)	Q'ty	Amount (Mil. VND)	Q'ty	Amount (Mil. VND)	
No of district (new sites)				6		6		5		3	
No of district (SPL-3 sites)				14		10		16		9	
No. of commune (calculated assuming development area per commune is 720ha)											
No. of commune (SPL-3 sites)				6		6		4		4	
No. of PFMB (new site)											
No. of PFMB (SPL-3)											
1. Capacity development of Government Staff				4,570.6		2,514.4		2,514.4		2,411.9	
1.1 Capacity development at the Central Level											
(1) Procurement of Contractor (with guidance to the contractor)											
(2) Project orientation to CPMU, MBEP and Relevant Depts. of MARD	9,720	Table B-5	1	9.7							
(3) Project orientation to PPMU and DARD (4 provinces/batch)	47,100	Table B-6	3	141.3							
(4) Technical guidance to PAFEC (4 provinces/batch x 6 sessions)	65,837	Table B-8	18	1,185.1							
(5) Training of and guidance to CPMU on Project Management	21,784	Table B-7	1	21.8							
(6) Training of and guidance to PPMU on Project Management (4 provinces/batch)	65,837	Table B-8	3	197.5							
(7) Guidance to MARD and CPMU on Benefit Sharing Mechanism and FDP Fund	9,720	Table B-5	1	9.7							
(8) Guidance to DARD and PPMU on Benefit Sharing Mechanism and FDP Fund (4 provinces/batch)	47,100	Table B-6	3	141.3							
(9) Guidance to CPMU on Monitoring and Evaluation	9,720	Table B-5	1	9.7							
(10) Monitoring of PAFEC's Performance (every six months for 4 provinces/batch)	22,594	Table B-9	24	542.3							
1.2 Capacity development at the Provincial Level											
(1) Procurement of Contractor											
(2) Project orientation to Relevant Depts of PPC/DARD and DPCs	20,520	Table B-10	1	20.5	1	20.5	1	20.5	1	20.5	1
(3) Project orientation to PFMBs, DECs, CPCs	36,180	Table B-11	1	36.2	1	36.2	1	36.2	1	36.2	1
(4) Training of PPMU											
- Detailed planning stage	65,837	Table B-8	1	65.8	1	65.8	1	65.8	1	65.8	1
- Project implementation stage (one time/year for 7 years)	65,837	Table B-8	7	460.9	7	460.9	7	460.9	7	460.9	7
(5) Training of PFMBs											
- Training Needs Assessment		1% of Training cost	1	5.0	1	5.0	1	5.0	1	5.0	1
- Detailed planning stage	38,210	Table B-12	1	38.2	1	38.2	1	38.2	1	38.2	1
- Project implementation stage (2 times/year for 6 years)	38,210	Table B-12	12	458.5	12	458.5	12	458.5	12	458.5	12
(6) Training of DEC and extension workers for facilitation of local people											
- Detailed planning stage (one time per district)	14,634	Table B-13	6	87.8	6	87.8	5	73.2	3		
- Project implementation stage (6 times per district)	14,634	Table B-13	36	526.8	36	526.8	30	439.0	18		
1.3 Study tour											
(1) Overseas tours (10 person/batch x 3 times)	709,195	Table B-17	3	2,127.6							
1.4 Review Meetings											
(1) Semi-annual Review meeting at central level	9,720	Table B-5	19	184.7							
(2) Semi-annual Review meeting at provincial level	42,876	Table B-6	19	814.6	19	814.6	19	814.6	19	814.6	19
2. Capacity Development of Local Communities				414.7		1,451.7		1,253.0		1,460.4	
2.1 Information dissemination at local level (2 times per commune)	4,968	Table B-14	28	139.1	20	99.4	32	159.0	18		
(1) Overviews and outlines of the project											
(2) Benefit sharing and concepts of long-term agreement											
(3) Awareness creation on values of protection forests											
2.2 Publication											
(1) Preparation of information dissemination materials											
- Project brief	51,840	Table B-16	1	51.8	1	51.8	1	51.8	1	51.8	1
- Newsletter (annual)	51,840	Table B-16	7	362.9	7	362.9	7	362.9	7	362.9	7
- Environmental education booklet	64,800	Table B-16			1	64.8	1	64.8	1	64.8	1
- Poster and DVD/VCD	4,542	Table B-16			1	4.5	1	4.5	1	4.5	1
(2) Review and finalization of information dissemination materials											
(3) Distribution of information dissemination materials											
2.3 Guidance and Training on Forest Management											
(1) Consultation of long-term agreement and benefit sharing (one time per commune)	4,968	Table B-14	14	69.6	10	49.7	16	79.5	9		
(2) Facilitation of group organization for contract (one time per commune)	4,968	Table B-14	14	69.6	10	49.7	16	79.5	9		
(3) Preparation of a work plan under the sub-contract with PFMB (one time per commune)	4,968	Table B-14	14	69.6	10	49.7	16	79.5	9		
(4) Silvicultural techniques	4,968	Table B-14									
(5) Development of rules on forest protection and management (2 times per commune)	4,968	Table B-14	28	139.1	20	99.4	32	159.0	18		
(6) Guidance on forest management planning (2 times per commune)	4,968	Table B-14	28	139.1	20	99.4	32	159.0	18		
(7) Trial preparation of a forest management plan (one time per commune)	4,968	Table B-14	14	69.6	10	49.7	16	79.5	9		
(8) Semi-annual meetings with local communities (per PFMB)	3,240	Table B-15	84	272.2	84	272.2	56	181.4	56		
2.3 Guidance and Training on Forest Management (for SPL-3 sites)											
(1) Consultation of long-term agreement and benefit sharing (one time per commune)	4,968	Table B-14									
(2) Facilitation of group organization for contract (one time per commune)	4,968	Table B-14									
(3) Preparation of a work plan under the sub-contract with PFMB (one time per commune)	4,968	Table B-14									
(4) Silvicultural techniques	4,968	Table B-14									
(5) Development of rules on forest protection and management (2 times per commune)	4,968	Table B-14									
(6) Guidance on forest management planning (2 times per commune)	4,968	Table B-14									
(7) Trial preparation of a forest management plan (one time per commune)	4,968	Table B-14									
(8) Semi-annual meetings with local communities (per PFMB)	3,240	Table B-15									
3. Phase-out/ Phase-In works				518.1		69.6		49.7		79.5	
3.1 Facilitation of hand-over of forest ownership from PPMU to PFMB											
3.2 Guidance to PPMUs, PFMBs and PAEFCs (4 provinces/batch/year x 3 years)	47,100	Table B-6	9	423.9							
(1) Long-term agreement											
(2) Benefit sharing mechanism and Forest Protection and Development Fund											
(3) Forest management plan											
3.2 Guidance to PPMUs, PFMBs and PAEFCs (for SPL-3 sites)	47,100	Table B-6	2	94.2							
(1) Long-term agreement											
(2) Benefit sharing mechanism and Forest Protection and Development Fund											
(3) Forest management plan											
3.3 Guidance to local communities (one time per commune)	4,968	Table B-14	14	69.6	10	49.7	16	79.5	9		
(1) Long-term agreement											
(2) Benefit sharing mechanism and Forest Protection and Development Fund											
(3) Forest management plan											
3.3 Guidance to local communities (for SPL-3 sites) - one time per commune	4,968	Table B-14									
(1) Long-term agreement											
(2) Benefit sharing mechanism and Forest Protection and Development Fund											
(3) Forest management plan											
Summary of Cost											
1. Capacity Development of Government Staff	1.1-1.4		4,570.6		2,514.4		2,514.4		2,411.9		
2. Capacity Development of Local Communities	2.1 - 2.4		414.7		1,451.7		1,253.0		1,460.4		
2. Capacity Development of Local Communities (for SPL-3 sites)	2.1 & 2.3										
3. Phase-in/ Phase-out Works	3.1 - 3.3		423.9		69.6		49.7		79.5		
3. Phase-in/ Phase-out Works (for SPL-3 sites)	3.2 & 3.3		94.2								
Total			5,503.5		4,035.7		3,817.1		3,951.8		

Table B-1 Estimated Cost for the Capacity Development Component

(2/3)

	Unit Cost (VND 1,000)	Reference	Lang Binh		Quang Tri		T.T. Hue		Quang Nam		Quang Ngai			
			Amount (Mil. VND)	Q'ty	Amount (Mil. VND)	Q'ty	Amount (Mil. VND)	Q'ty	Amount (Mil. VND)	Q'ty	Amount (Mil. VND)	Q'ty		
No of district (new sites)				7		3		6		4				
No of district (SPL-3 sites)				5		3		1		2				
No. of commune (calculated assuming development area per commune is 720ha)				13		19		16		14				
No. of commune (SPL-3 sites)				11		11		6		6				
No. of PFMB (new site)				3		3		6		5				
No. of PFMB (SPL-3)				2		3		1		2				
1. Capacity development of Government Staff				2,207.1		2,616.8		2,207.1		2,514.4		2,309.5		
1.1 Capacity development at the Central Level														
(1) Procurement of Contractor (with guidance to the contractor)														
(2) Project orientation to CPMU, MBEP and Relevant Depts. of MARD	9,720	Table B-5												
(3) Project orientation to PPMU and DARD (4 provinces/batch)	47,100	Table B-6												
(4) Technical guidance to PAFFC (4 provinces/batch x 6 sessions)	65,837	Table B-8												
(5) Training of and guidance to CPMU on Project Management	21,784	Table B-7												
(6) Training of and guidance to PPMU on Project Management (4 provinces/batch)	65,837	Table B-8												
(7) Guidance to MARD and CPMU on Benefit Sharing Mechanism and FDP Fund	9,720	Table B-5												
(8) Guidance to DARD and PPMU on Benefit Sharing Mechanism and FDP Fund (4 provinces/batch)	47,100	Table B-6												
(9) Guidance to CPMU on Monitoring and Evaluation	9,720	Table B-5												
(10) Monitoring of PAFFC's Performance (every six months for 4 provinces/batch)	22,594	Table B-9												
1.2 Capacity development at the Provincial Level														
(1) Procurement of Contractor														
(2) Project orientation to Relevant Depts of PPC/DARD and DPCs	20,520	Table B-10	20.5	1	20.5	1	20.5	1	20.5	1	20.5			
(3) Project orientation to PFMBs, DECs, CPCs	36,180	Table B-11	36.2	1	36.2	1	36.2	1	36.2	1	36.2			
(4) Training of PPMU														
- Detailed planning stage	65,837	Table B-8	65.8	1	65.8	1	65.8	1	65.8	1	65.8			
- Project implementation stage (one time/year for 7 years)	65,837	Table B-8	460.9	7	460.9	7	460.9	7	460.9	7	460.9			
(5) Training of PFMBs														
- Training Needs Assessment	1% of Training cost		5.0	1	5.0	1	5.0	1	5.0	1	5.0			
- Detailed planning stage	38,210	Table B-12	38.2	1	38.2	1	38.2	1	38.2	1	38.2			
- Project implementation stage (2 times/year for 6 years)	38,210	Table B-12	458.5	12	458.5	12	458.5	12	458.5	12	458.5			
(6) Training of DEC and extension workers for facilitation of local people														
- Detailed planning stage (one time per district)	14,634	Table B-13	43.9	7	102.4	3	43.9	6	87.8	4	58.5			
- Project implementation stage (6 times per district)	14,634	Table B-13	263.4	42	614.6	18	263.4	36	526.8	24	351.2			
1.3 Study tour														
(1) Overseas tours (10 person/batch x 3 times)	709,195	Table B-17												
1.4 Review Meetings														
(1) Semi-annual Review meeting at central level	9,720	Table B-5												
(2) Semi-annual Review meeting at provincial level	42,876	Table B-6	814.6	19	814.6	19	814.6	19	814.6	19	814.6			
2. Capacity Development of Local Communities				1,112.6		1,870.8		2,198.0		1,878.3		1,762.8		
2.1 Information dissemination at local level (2 times per commune)														
(1) Overviews and outlines of the project	4,968	Table B-14	89.4	26	129.2	38	188.8	32	159.0	28	139.1			
(2) Benefit sharing and concepts of long-term agreement														
(3) Awareness creation on values of protection forests														
2.2 Publication														
(1) Preparation of information dissemination materials														
- Project brief	51,840	Table B-16	51.8	1	51.8	1	51.8	1	51.8	1	51.8			
- Newsletter (annual)	51,840	Table B-16	362.9	7	362.9	7	362.9	7	362.9	7	362.9			
- Environmental education booklet	64,800	Table B-16	64.8	1	64.8	1	64.8	1	64.8	1	64.8			
- Poster and DVD/VCD	4,542	Table B-16	4.5	1	4.5	1	4.5	1	4.5	1	4.5			
(2) Review and finalization of information dissemination materials														
(3) Distribution of information dissemination materials														
2.3 Guidance and Training on Forest Management														
(1) Consultation of long-term agreement and benefit sharing (one time per commune)	4,968	Table B-14	44.7	13	64.6	19	94.4	16	79.5	14	69.6			
(2) Facilitation of group organization for contract (one time per commune)	4,968	Table B-14	44.7	13	64.6	19	94.4	16	79.5	14	69.6			
(3) Preparation of a work plan under the sub-contract with PFMB (one time per commune)	4,968	Table B-14	44.7	13	64.6	19	94.4	16	79.5	14	69.6			
(4) Silvicultural techniques														
(5) Development of rules on forest protection and management (2 times per commune)	4,968	Table B-14	89.4	26	129.2	38	188.8	32	159.0	28	139.1			
(6) Guidance on forest management planning (2 times per commune)	4,968	Table B-14	89.4	26	129.2	38	188.8	32	159.0	28	139.1			
(7) Trial preparation of a forest management plan (one time per commune)	4,968	Table B-14	44.7	13	64.6	19	94.4	16	79.5	14	69.6			
(8) Semi-annual meetings with local communities (per PFMB)	3,240	Table B-15	181.4	42	136.1	42	136.1	84	272.2	70	226.8			
2.3 Guidance and Training on Forest Management (for SPL-3 sites)														
(1) Consultation of long-term agreement and benefit sharing (one time per commune)	4,968	Table B-14	11	54.6	11	54.6	6	29.8	6	29.8				
(2) Facilitation of group organization for contract (one time per commune)	4,968	Table B-14	11	54.6	11	54.6	6	29.8	6	29.8				
(3) Preparation of a work plan under the sub-contract with PFMB (one time per commune)	4,968	Table B-14	11	54.6	11	54.6	6	29.8	6	29.8				
(4) Silvicultural techniques														
(5) Development of rules on forest protection and management (2 times per commune)	4,968	Table B-14	22	109.3	22	109.3	12	59.6	12	59.6				
(6) Guidance on forest management planning (2 times per commune)	4,968	Table B-14	22	109.3	22	109.3	12	59.6	12	59.6				
(7) Trial preparation of a forest management plan (one time per commune)	4,968	Table B-14	11	54.6	11	54.6	6	29.8	6	29.8				
(8) Semi-annual meetings with local communities (per PFMB)	3,240	Table B-15	18	58.3	27	87.5	9	29.2	18	58.3				
3. Phase-out/ Phase-In works				44.7		119.2		149.0		109.3		99.4		
3.1 Facilitation of hand-over of forest ownership from PPMU to PFMB														
3.2 Guidance to PPMUs, PFMBs and PAFFCs (4 provinces/batch/year x 3 years)														
(1) Long-term agreement	47,100	Table B-6												
(2) Benefit sharing mechanism and Forest Protection and Development Fund														
(3) Forest management plan														
3.2 Guidance to PPMUs, PFMBs and PAFFCs (for SPL-3 sites)														
(1) Long-term agreement														
(2) Benefit sharing mechanism and Forest Protection and Development Fund														
(3) Forest management plan														
3.3 Guidance to local communities (one time per commune)														
(1) Long-term agreement	4,968	Table B-14	44.7	13	64.6	19	94.4	16	79.5	14	69.6			
(2) Benefit sharing mechanism and Forest Protection and Development Fund														
(3) Forest management plan														
3.3 Guidance to local communities (for SPL-3 sites) - one time per commune														
(1) Long-term agreement	4,968	Table B-14	11	54.6	11	54.6	6	29.8	6	29.8				
(2) Benefit sharing mechanism and Forest Protection and Development Fund														
(3) Forest management plan														
Summary of Cost														
1. Capacity Development of Government Staff				1.1-1.4		2,207.1		2,616.8		2,207.1		2,514.4		2,309.5
2. Capacity Development of Local Communities				2.1 - 2.4		1,112.6		1,266.0		1,564.1		1,551.1		1,406.4
2. Capacity Development of Local Communities (for SPL-3 sites)				2.1 & 2.3		604.8		634.0		327.2		356.4		
3. Phase-in/ Phase-out Works				3.1 - 3.3		44.7		64.6		94.4		79.5		69.6
3. Phase-in/ Phase-out Works (for SPL-3 sites)				3.2 & 3.3		54.6		54.6		29.8		29.8		29.8
				Total		3,364.4		4,606.8		4,554.1		4,502.0		4,171.6

Table B-1 Estimated Cost for the Capacity Development Component (3/3)

	Unit Cost (VND 1,000)	Reference	Binh Dinh		Phu Yen		Ninh Thuan		Binh Thuan	
			Q'ty	Amount (Mil. VND)	Q'ty	Amount (Mil. VND)	Q'ty	Amount (Mil. VND)	Q'ty	Amount (Mil. VND)
No of district (new sites)			5		3		4		3	
No of district (SPL-3 sites)				1						
No. of commune (calculated assuming development area per commune is 720ha)			16		9		17		15	
No. of commune (SPL-3 sites)				1						
No. of PFMB (new site)			5		3		4		8	
No. of PFMB (SPL-3)				1						
1. Capacity development of Government Staff				2,411.9			2,207.1		2,309.5	
1.1 Capacity development at the Central Level										2,207.1
(1) Procurement of Contractor (with guidance to the contractor)										
(2) Project orientation to CPMU, MBFP and Relevant Depts. of MARD	9,720	Table B-5								
(3) Project orientation to PPMU and DARD (4 provinces/batch)	47,100	Table B-6								
(4) Technical guidance to PAFEC (4 provinces/batch x 6 sessions)	65,837	Table B-8								
(5) Training of and guidance to CPMU on Project Management	21,784	Table B-7								
(6) Training of and guidance to PPMU on Project Management (4 provinces/batch)	65,837	Table B-8								
(7) Guidance to MARD and CPMU on Benefit Sharing Mechanism and FDP Fund	9,720	Table B-5								
(8) Guidance to DARD and PPMU on Benefit Sharing Mechanism and FDP Fund (4 provinces/batch)	47,100	Table B-6								
(9) Guidance to CPMU on Monitoring and Evaluation	9,720	Table B-5								
(10) Monitoring of PAFEC's Performance (every six months for 4 provinces/batch)	22,594	Table B-9								
1.2 Capacity development at the Provincial Level										
(1) Procurement of Contractor										
(2) Project orientation to Relevant Depts of PPC/DARD and DPCs	20,520	Table B-10	1	20.5	1	20.5	1	20.5	1	20.5
(3) Project orientation to PFMBs, DECs, CPCs	36,180	Table B-11	1	36.2	1	36.2	1	36.2	1	36.2
(4) Training of PPMU										
- Detailed planning stage	65,837	Table B-8	1	65.8	1	65.8	1	65.8	1	65.8
- Project implementation stage (one time/year for 7 years)	65,837	Table B-8	7	460.9	7	460.9	7	460.9	7	460.9
(5) Training of PFMBs										
- Training Needs Assessment		1% of Training cost	1	5.0	1	5.0	1	5.0	1	5.0
- Detailed planning stage	38,210	Table B-12	1	38.2	1	38.2	1	38.2	1	38.2
- Project implementation stage (2 times/year for 6 years)	38,210	Table B-12	12	458.5	12	458.5	12	458.5	12	458.5
(6) Training of DEC and extension workers for facilitation of local people										
- Detailed planning stage (one time per district)	14,634	Table B-13	5	73.2	3	43.9	4	58.5	3	43.9
- Project implementation stage (6 times per district)	14,634	Table B-13	30	439.0	18	263.4	24	351.2	18	263.4
1.3 Study tour										
(1) Overseas tours (10 person/batch x 3 times)	709,195	Table B-17								
1.4 Review Meetings										
(1) Semi-annual Review meeting at central level	9,720	Table B-5								
(2) Semi-annual Review meeting at provincial level	42,876	Table B-6	19	814.6	19	814.6	19	814.6	19	814.6
2. Capacity Development of Local Communities				1,505.7		1,146.1		1,510.1		1,592.1
2.1 Information dissemination at local level (2 times per commune)										
(1) Overviews and outlines of the project	4,968	Table B-14	32	159.0	18	89.4	34	168.9	30	149.0
(2) Benefit sharing and concepts of long-term agreement										
(3) Awareness creation on values of protection forests										
2.1 Information dissemination at local level (for SPL-3 sites) - 2 times per communes										
(1) Overviews and outlines of the project	4,968	Table B-14								
(2) Benefit sharing and concepts of long-term agreement										
(3) Awareness creation on values of protection forests										
2.2 Publication										
(1) Preparation of information dissemination materials										
- Project brief	51,840	Table B-16	1	51.8	1	51.8	1	51.8	1	51.8
- Newsletter (annual)	51,840	Table B-16	7	362.9	7	362.9	7	362.9	7	362.9
- Environmental education booklet	64,800	Table B-16	1	64.8	1	64.8	1	64.8	1	64.8
- Poster and DVD/VCD	4,542	Table B-16	1	4.5	1	4.5	1	4.5	1	4.5
(2) Review and finalization of information dissemination materials										
(3) Distribution of information dissemination materials										
2.3 Guidance and Training on Forest Management										
(1) Consultation of long-term agreement and benefit sharing (one time per commune)	4,968	Table B-14	16	79.5	9	44.7	17	84.5	15	74.5
(2) Facilitation of group organization for contract (one time per commune)	4,968	Table B-14	16	79.5	9	44.7	17	84.5	15	74.5
(3) Preparation of a work plan under the sub-contract with PFMB (one time per commune)	4,968	Table B-14	16	79.5	9	44.7	17	84.5	15	74.5
(4) Silvicultural techniques	4,968	Table B-14								
(5) Development of rules on forest protection and management (2 times per commune)	4,968	Table B-14	32	159.0	18	89.4	34	168.9	30	149.0
(6) Guidance on forest management planning (2 times per commune)	4,968	Table B-14	32	159.0	18	89.4	34	168.9	30	149.0
(7) Trial preparation of a forest management plan (one time per commune)	4,968	Table B-14	16	79.5	9	44.7	17	84.5	15	74.5
(8) Semi-annual meetings with local communities (per PFMB)	3,240	Table B-15	70	226.8	42	136.1	56	181.4	112	362.9
2.3 Guidance and Training on Forest Management (for SPL-3 sites)										
(1) Consultation of long-term agreement and benefit sharing (one time per commune)	4,968	Table B-14								
(2) Facilitation of group organization for contract (one time per commune)	4,968	Table B-14								
(3) Preparation of a work plan under the sub-contract with PFMB (one time per commune)	4,968	Table B-14								
(4) Silvicultural techniques	4,968	Table B-14								
(5) Development of rules on forest protection and management (2 times per commune)	4,968	Table B-14								
(6) Guidance on forest management planning (2 times per commune)	4,968	Table B-14								
(7) Trial preparation of a forest management plan (one time per commune)	4,968	Table B-14								
(8) Semi-annual meetings with local communities (per PFMB)	3,240	Table B-15								
3. Phase-out/ Phase-in works				79.5		49.7		84.5		74.5
3.1 Facilitation of hand-over of forest ownership from PPMU to PFMB										
3.2 Guidance to PPMUs, PFMBs and PAFECs (4 provinces/batch/year x 3 years)										
(1) Long-term agreement	47,100	Table B-6								
(2) Benefit sharing mechanism and Forest Protection and Development Fund										
(3) Forest management plan										
3.2 Guidance to PPMUs, PFMBs and PAFECs (for SPL-3 sites)										
(1) Long-term agreement										
(2) Benefit sharing mechanism and Forest Protection and Development Fund										
(3) Forest management plan										
3.3 Guidance to local communities (one time per commune)										
(1) Long-term agreement	4,968	Table B-14	16	79.5	9	44.7	17	84.5	15	74.5
(2) Benefit sharing mechanism and Forest Protection and Development Fund										
(3) Forest management plan										
3.3 Guidance to local communities (for SPL-3 sites) - one time per commune										
(1) Long-term agreement	4,968	Table B-14								
(2) Benefit sharing mechanism and Forest Protection and Development Fund										
(3) Forest management plan										
Summary of Cost										
1. Capacity Development of Government Staff	1.1-1.4		2,411.9		2,207.1		2,309.5		2,207.1	
2. Capacity Development of Local Communities	2.1 - 2.4		1,505.7		1,067.3		1,510.1		1,592.1	
2. Capacity Development of Local Communities (for SPL-3 sites)	2.1 & 2.3				78.8					
3. Phase-in/ Phase-out Works	3.1 - 3.3		79.5		44.7		84.5		74.5	
3. Phase-in/ Phase-out Works (for SPL-3 sites)	3.2 & 3.3				5.0					
Total			3,997.2		3,402.8		3,904.0		3,873.7	

Table B-2 Estimated Annual Cost of Capacity Development Component

Project components	Unit	Total	Total Cost	1st (2010)	2nd (2011)	3rd (2012)	4th (2013)	5th (2014)	6th (2015)	7th (2016)	8th (2017)	9th (2018)	10th (2019)	11th (2020)
	Total	LC	FC	LC	FC	LC	FC	LC	FC	LC	FC	LC	FC	LC
CPMU														
3 Capacity Development, Information Dissemination and Phase-in/-out	mil. VND	5,503	5,503											
3.1 Capacity building of Government staff	mil. VND	4,571	4,571											
3.2 Capacity building of Local Communities	mil. VND	415	415											
3.3 Phase-in / Phase-out Work	mil. VND	518	518											
Thanh Hoa														
3 Capacity Development, Information Dissemination and Phase-in/-out	mil. VND	4,036	4,036											
3.1 Capacity building of Government staff	mil. VND	2,514	2,514											
3.2 Capacity building of Local Communities	mil. VND	1,452	1,452											
3.3 Phase-in / Phase-out Work	mil. VND	70	70											
Nghe An														
3 Capacity Development, Information Dissemination and Phase-in/-out	mil. VND	3,817	3,817											
3.1 Capacity building of Government staff	mil. VND	2,514	2,514											
3.2 Capacity building of Local Communities	mil. VND	1,253	1,253											
3.3 Phase-in / Phase-out Work	mil. VND	50	50											
Ha Tinh														
3 Capacity Development, Information Dissemination and Phase-in/-out	mil. VND	3,952	3,952											
3.1 Capacity building of Government staff	mil. VND	2,412	2,412											
3.2 Capacity building of Local Communities	mil. VND	1,460	1,460											
3.3 Phase-in / Phase-out Work	mil. VND	80	80											
Quang Binh														
3 Capacity Development, Information Dissemination and Phase-in/-out	mil. VND	3,364	3,364											
3.1 Capacity building of Government staff	mil. VND	2,207	2,207											
3.2 Capacity building of Local Communities	mil. VND	1,113	1,113											
3.3 Phase-in / Phase-out Work	mil. VND	45	45											
Quang Tri														
3 Capacity Development, Information Dissemination and Phase-in/-out	mil. VND	4,607	4,607											
3.1 Capacity building of Government staff	mil. VND	2,617	2,617											
3.2 Capacity building of Local Communities	mil. VND	1,871	1,871											
3.3 Phase-in / Phase-out Work	mil. VND	119	119											
T.T. Hué														
3 Capacity Development, Information Dissemination and Phase-in/-out	mil. VND	4,554	4,554											
3.1 Capacity building of Government staff	mil. VND	2,207	2,207											
3.2 Capacity building of Local Communities	mil. VND	2,198	2,198											
3.3 Phase-in / Phase-out Work	mil. VND	149	149											
Quang Nam														
3 Capacity Development, Information Dissemination and Phase-in/-out	mil. VND	4,502	4,502											
3.1 Capacity building of Government staff	mil. VND	2,514	2,514											
3.2 Capacity building of Local Communities	mil. VND	1,878	1,878											
3.3 Phase-in / Phase-out Work	mil. VND	109	109											
Binh Dinh														
3 Capacity Development, Information Dissemination and Phase-in/-out	mil. VND	4,171	4,171											
3.1 Capacity building of Government staff	mil. VND	2,309	2,309											
3.2 Capacity building of Local Communities	mil. VND	1,763	1,763											
3.3 Phase-in / Phase-out Work	mil. VND	100	100											
Phu Yen														
3 Capacity Development, Information Dissemination and Phase-in/-out	mil. VND	3,997	3,997											
3.1 Capacity building of Government staff	mil. VND	2,412	2,412											
3.2 Capacity building of Local Communities	mil. VND	1,506	1,506											
3.3 Phase-in / Phase-out Work	mil. VND	80	80											
Ninh Thuan														
3 Capacity Development, Information Dissemination and Phase-in/-out	mil. VND	3,904	3,904											
3.1 Capacity building of Government staff	mil. VND	2,207	2,207											
3.2 Capacity building of Local Communities	mil. VND	1,146	1,146											
3.3 Phase-in / Phase-out Work	mil. VND	50	50											
Binh Thuan														
3 Capacity Development, Information Dissemination and Phase-in/-out	mil. VND	3,874	3,874											
3.1 Capacity building of Government staff	mil. VND	2,207	2,207											
3.2 Capacity building of Local Communities	mil. VND	1,592	1,592											
3.3 Phase-in / Phase-out Work	mil. VND	75	75											

Table B-3 Estimation of Annual Cost for the Capacity Development Component (at central level)

CPMU

Table B-4 Estimation of Annual Cost for the Capacity Development Component (at provincial level)

Quang Tri (sample province)

Table B-4 Estimation of Annual Cost for the Capacity Development Component (at provincial level)

Quang Tri (sample province)

Table B-5 Cost Breakdown of Project Orientation/Review Meeting for CPMU / MARDs and Relevant Departments of MARD

a. Basis for Estimation:

Cost Norm: **61/ QD-BTC of 2 Nov 2006**
 Participants: 10 persons of CPMU and Relevant Departments
 Venue: Hanoi
 Type: Non-residential
 Duration: 2 days
 Purpose: Project orientation and Review meeting

b. Cost Breakdown

Items	Unit cost (1)	Unit1	Q'ty (2)	Unit2	Q'ty (3)	Unit3	Total cost (1 x 2 x 3)
I Lecturer/ facilitator							
1.1 Lecturer	300,000 / session		4	sessions	1	person	1,200,000
1.2 Lecturer Assistant	200,000 / session		4	sessions	1	person	800,000
II Material							
2.1 Photocopy	30 / pages		20	sets	500	VND/ page	300,000
2.2 Stationery	15,000 / person/ time		20	persons	1	times	300,000
2.3 Refreshments	15,000 / person/ day		20	persons	2	days	600,000
2.4 Meals	70,000 / person/ day		20	persons	2	days	2,800,000
III Accommodation	200,000 / person/ day		0	persons	2	days	0
VI Stipend/ meal allowance/ pocket money	50,000 / person/ day		20	persons	2	days	2,000,000
V Venue	500,000 / day		2	days	1		1,000,000
Sub-total							9,000,000
VI Management fee (8%)							720,000
Total							9,720,000

Note: Transportation cost of the participants will be borne by the respective PPMUs.

Table B-6 Cost Breakdown of Orientation/Review Meeting for PPMUs, DARDs, and PAFECs

a. Basis for Estimation:

Cost Norm: 61/ QD-BTC of 2 Nov 2006
 Participants: 60 persons of PPMU/ DARD/ PFMB
 Venue: Regional Center (Quang Ngai, Hue, Phue Yen)
 Type: Residential
 Duration: 2 days
 Purpose: Project orientation and Review meeting

b. Cost Breakdown for Orientation

Items	Unit cost (1)	Unit1	Q'ty (2)	Unit2	Q'ty (3)	Unit3	Total cost (1 x 2 x 3)
I Lecturer/ facilitator							
1.1 Lecturer	300,000 / session		4 sessions		1 person		1,200,000
1.2 Lecturer Assistant	200,000 / session		4 sessions		1 person		800,000
II Material							
2.1 Photocopy	30 / pages		60 sets		500 VND/ page		900,000
2.2 Stationery	50,000 / person/ time		60 persons		1 times		3,000,000
2.3 Refreshments	15,000 / person/ day		60 persons		2 days		1,800,000
2.4 Meals	70,000 / person/ day		60 persons		2 days		8,400,000
III Accommodation	200,000 / person/ day		60 persons		2 days		24,000,000
VI Stipend/ meal allowance/ pocket money	50,000 / person/ day		60 persons		2 days		6,000,000
V Venue	500,000 / day		2 days		1		1,000,000
Total							47,100,000

Note: Transportation cost of the participants will be borne by the respective PPMUs.

Table B-7 Cost Breakdown of Capacity Development for CPMU on Project Management

a. Basis for Estimation:

Cost Norm: 526/QD-BNN-TC of 3 Mar 2009
 Participants: 30 persons of CPMU/MARD
 Venue: Central
 Type: Non-residential
 Duration: 2 days

b. Cost Breakdown

Cost Items	Unit cost (1)	Unit1	Q'ty (2)	Unit2	Q'ty (3)	Unit3	Total cost (1 x 2 x 3)
I Lecturer/ facilitator							
1.1 Lecturer	300,000 / day		2	days	1	person	600,000
1.2 Lecturer Assistant	200,000 / day		2	days	1	person	400,000
II Material							
Training material preperation	60,000 / page		100	pages	1	set	6,000,000
Photocopy	100 pages		30	sets	500	VND/ page	1,500,000
Stationery	15,000 / person/ time		30	persons	1	times	450,000
Meals	70,000 / person/ time		30	persons	3	days	6,300,000
Water	7,000 / person/ day		30	persons	2	days	420,000
III Accommodation	200,000 / person/ day		0	persons	2	days	0
IV Stipend	50,000 / person/ day		30	persons	2	days	3,000,000
V Venue	500,000 day		3	days	1		1,500,000
Sub-total							20,170,000
VI Management fee (8%)							1,614,000
Total							21,784,000

No 61/ QD/2006 BTC of 2 Nov. 2006 stipulates that the professional training shall comply with the current spending limits of those funded by the state budget. Therefore, the above is adopted for the TOT.

Table B-8 Cost Breakdown of Capacity Development for PPMU on Project management

a. Basis for Estimation:

Cost Norm: 526/QD-BNN-TC of 3 Mar 2009
 Participants: 60 persons of PPMU/ DARD
 Venue: Regional centers
 Type: Residential
 Duration: 3 days

b. Cost Breakdown

Cost Items	Unit cost (1)	Unit1	Q'ty (2)	Unit2	Q'ty (3)	Unit3	Total cost (1 x 2 x 3)
I Lecturer/ facilitator							
1.1 Lecturer	300,000 / dayy		3	days	1	person	900,000
1.2 Lecturer Assistant	200,000 / dayy		3	days	1	person	600,000
1.3 Transportation for Lecturers	4,500,000 trip		2	persons	1	trips	9,000,000
II Material							
Training material preperation	60,000 / page		100	pages	1	set	6,000,000
Photocopy	100 pages		60	sets	500	VND/ page	3,000,000
Stationery	15,000 / person/ time		60	persons	1	times	900,000
Meals	70,000 / person/ day		60	persons	3	days	12,600,000
Water	7,000 / person/ day		60	persons	3	days	1,260,000
III Accommodation	120,000 / person/ day		45	persons	3	days	16,200,000
IV Stipend	50,000 / person/ day		60	persons	3	days	9,000,000
V Venue	500,000 day		3	days	1		1,500,000
Sub-total							60,960,000
VI Management fee (8%)							4,877,000
Total							65,837,000

No 61/ QD/2006 BTC of 2 Nov. 2006 stipulates that the professional training shall comply with the current spending limits of those funded by the state budget. Therefore, the above is adopted for the TOT.

Table B-9 Cost Breakdown for Review Meeting of PAFEC's Performance

a. Basis for Estimation:

Cost Norm: 526/QD-BNN-TC of 3 Mar 2009
 Participants: 60 persons of PPMU/ DARD and PAFEC staff
 Venue: Regional centers
 Type: Non-residential
 Duration: 1 day

b. Cost Breakdown

Cost Items	Unit cost (1)	Unit1	Q'ty (2)	Unit2	Q'ty (3)	Unit3	Total cost (1 x 2 x 3)
I Lecturer/ facilitator							
1.1 Lecturer	300,000	/ day	1	day	1	person	300,000
1.2 Lecturer Assistant	200,000	/ day	1	day	1	person	200,000
1.3 Transportation for Lecturers	4,500,000	trip	2	persons	1	trips	9,000,000
II Material							
Training material preperation	60,000	/ page	20	pages	1	set	1,200,000
Photocopy	100	pages	60	sets	500	VND/ page	3,000,000
Stationery	15,000	/ person/ time	60	persons	1	times	900,000
Meals	40,000	/ person/ time	60	persons	1	day	2,400,000
Water	7,000	/ person/ day	60	persons	1	day	420,000
III Accommodation	120,000	/ person/ day	60	persons	0	days	0
IV Stipend	50,000	/ person/ day	60	persons	1	days	3,000,000
V Venue	500,000	day	1	days	1		500,000
Sub-total							20,920,000
VI Management fee (8%)							1,674,000
Total							22,594,000

No 61/ QD/2006 BTC of 2 Nov. 2006 stipulates that the professional training shall comply with the current spending limits of those funded by the state budget. Therefore, the above is adopted for the TOT.

Table B-10 Cost Breakdown of Project Orientation for Relevant Depts of PPC and DPCs

a. Basis for Estimation:

Cost Norm: **61/ QD-BTC of 2 Nov 2006**
 Participants: 30 persons of PPMU/ DARD/ PFMB
 Venue: Provincial center
 Type: Residential
 Duration: 2 days
 Purpose: Project orientation and Review meeting

b. Cost Breakdown

Items	Unit cost (1)	Unit1	Q'ty (2)	Unit2	Q'ty (3)	Unit3	Total cost (1 x 2 x 3)
I Lecturer/ facilitator							
1.1 Lecturer	200,000 / session		4 sessions		1 person		800,000
1.2 Lecturer Assistant	150,000 / session		4 sessions		1 person		600,000
1.4 Transportation	100,000 / trip		2 persons		2 trips		400,000
II Material							
2.1 Photocopy	30 / pages		30 sets		500 VND/ page		450,000
2.2 Stationery	15,000 / person/ time		30 persons		1 times		450,000
2.3 Refreshments	15,000 / person/ day		30 persons		2 days		900,000
2.4 Meals	70,000 / person/ day		30 persons		2 days		4,200,000
III Accommodation	120,000 / person/ day		30 persons		2 days		7,200,000
VI Stipend/ meal allowance/ pocket money	50,000 / person/ day		30 persons		2 days		3,000,000
V Venue	500,000 / day		2 days		1		1,000,000
Sub-total							19,000,000
VI Management fee (8%)							1,520,000
Total							20,520,000

Note: Transportation cost of the participants will be borne by the respective PPMUs.

Table B-11 Cost Breakdown of Project Orientation for PFMBs, DEC, and Commune Extension Staff

a. Basis for Estimation:

Cost Norm: 61/QD-BTC of 2 Nov 2006
 Participants: 60 persons of PFMB/ Extensoin Centre/ Commune Extension Staff
 Venue: Regional Centre
 Type: Residential
 Duration: 2 days
 Purpose: Project orientation and Review meeting

b. Cost Breakdown

Items	Unit cost (1)	Unit1	Q'ty (2)	Unit2	Q'ty (3)	Unit3	Total cost (1 x 2 x 3)
I Lecturer/ facilitator							
1.1 Lecturer	200,000 / session		4	sessions	1	person	800,000
1.2 Lecturer Assistant	150,000 / session		4	sessions	1	person	600,000
II Material							
Photocopy	20 pages		60	sets	500	VND/ page	600,000
Stationery	15,000 / person/ time		60	persons	1	times	900,000
Refreshments	10,000 / person/ day		60	persons	2	days	1,200,000
Meals	70,000 / person/ day		60	persons	2	days	8,400,000
III Accommodation	120,000 / person/ day		60	persons	2	days	14,400,000
IV Stipend/ meal allowance/ pocket money	50,000 / person/ day		60	persons	2	days	6,000,000
V Venue	300,000 day		2	days	1		600,000
Sub-total							33,500,000
VI Management fee (8%)							2,680,000
Total							36,180,000

Table B-12 Cost Breakdown for Training of PFMBs

a. Basis for Estimation:

Cost Norm: 526/QD-BNN-TC of 3 Mar 2009
 Participants: 30 persons of PPMU/ DARD/ PFMB
 Venue: Regional
 Type: Residential
 Duration: 3 days

b. Cost Breakdown

Cost Items	Unit cost (1)	Unit1	Q'ty (2)	Unit2	Q'ty (3)	Unit3	Total cost (1 x 2 x 3)
I Lecturer/ facilitator							
1.1 Lecturer	300,000	/ day	3	days	1	person	900,000
1.2 Lecturer Assistant	200,000	/ day	3	days	1	person	600,000
1.3 Transportation for Lecturers	300,000	trip	2	persons	2	trips	1,200,000
II Material							
Training material preperation	60,000	/ page	100	pages	1	set	6,000,000
Photocopy	100	pages	30	sets	500	VND/ page	1,500,000
Stationery	15,000	/ person/ time	30	persons	1	times	450,000
Meals	70,000	/ person/ days	30	persons	3	days	6,300,000
Water	7,000	/ person/ day	30	persons	3	days	630,000
III Accommodation	120,000	/ person/ day	30	persons	3	days	10,800,000
IV Stipend	50,000	/ person/ day	30	persons	3	days	4,500,000
V Venue	500,000	day	5	days	1		2,500,000
Sub-total							35,380,000
VI Management fee (8%)							2,830,000
Total							38,210,000

No 61/ QD/2006 BTC of 2 Nov. 2006 stipulates that the professional training shall comply with the current spending limits of those funded by the state budget. Therefore, the above is adopted for the TOT.

Table B-13 Cost Breakdown of Training of Trainers for Extension Workers

a. Basis for Estimation:

Cost Norm: 526/QD-BNN-TC of 3 Mar 2009
 Participants: 20 persons of extension staff/ workers
 Venue: District Centre
 Type: Non-residential
 Duration: 3 days

b. Cost Breakdown

Items	Unit cost (1)	Unit1	Q'ty (2)	Unit2	Q'ty (3)	Unit3	Total cost (1 x 2 x 3)
I Lecturer/ facilitator							
1.1 Lecturer	300,000 / day		3 days		1 person		900,000
1.2 Lecturer Assistant	200,000 / day		3 days		1 person		600,000
1.3 Transportation for Lecturers	100,000 trip		2 persons		2 trips		400,000
							0
II Material							0
Training material preperation	60,000 / page		100 pages		1 set		6,000,000
Photocopy	500 VND/ page		100 page		20 set		1,000,000
Stationery and water	15,000 / person/ time		20 persons		3 days		900,000
Meals	30,000 / person/ day		20 persons		3 days		1,500,000
III Accomodation	120,000 / person/ day		persons		0 days		0
IV Stipend	30,000 / person/ day		20 persons		3 days		1,500,000
V Venue	300,000 day		3 days		1		750,000
	Sub-total						13,550,000
VI Management fee (8%)							1,084,000
	Total						14,634,000

No 61/ QD/2006 BTC of 2 Nov. 2006 stipulates that the professional training shall comply with the current spending limits of those funded by the state budget. Therefore, the above is adopted for the TOT.

Table B-14 Cost Breakdown for Guidance and Trainings of Local Community

a. Basis for Estimation:

Cost Norm: 61/ QD-BTC of 2 Nov 2006
 Participants: 30 forest users
 Venue: Commune
 Type: Non Residential
 Duration: 1 day
 Purpose: Project orientation

b. Cost Breakdown

Items	Unit cost (1)	Unit1	Q'ty (2)	Unit2	Q'ty (3)	Unit3	Total cost (1 x 2 x 3)
I Lecturer/ facilitator							
1.1 Lecturer	100,000	/ session	2	sessions	1	person	200,000
1.2 Lecturer Assistant	50,000	/ session	2	sessions	1	person	100,000
II Material							
Photocopy	30	pages	50	sets	500	VND/ page	750,000
Stationery	10,000	/ person/ day	50	persons	1	times	500,000
Meals	25,000	/ person/ day	50	persons	1	days	1,250,000
III Accommodation	120,000	/ person/ day		persons	1	days	0
IV Stipend/ meal allowance/ pocket money	20,000	/ person/ day	50	persons	1	days	1,000,000
Refreshments	10,000	/ person/ day	50	persons	1	days	500,000
V Venue	300,000	day	1	days	1		300,000
Sub-total							4,600,000
VI Management fee (8%)							368,000
Total							4,968,000

Table B-15 Cost Breakdown of Semi-annual Meeting with Local Community

a. Basis for Estimation:

Cost Norm: 61/ QD-BTC of 2 Nov 2006
 Participants: 30 forest users
 Venue: Commune
 Type: Non Residential
 Duration: 1 day
 Purpose: Quarterly meeting

b. Cost Breakdown

Items	Unit cost (1)	Unit1	Q'ty (2)	Unit2	Q'ty (3)	Unit3	Total cost (1 x 2 x 3)
I Lecturer/ facilitator							
1.1 Lecturer	100,000 / session		2	sessions	1	person	200,000
1.2 Lecturer Assistant	50,000 / session		2	sessions	1	person	100,000
II Material							
Photocopy	30 pages		30	sets	500	VND/ page	450,000
Stationery	10,000 / person/ day		30	persons	1	times	300,000
Meals	25,000 / person/ day		30	persons	1	days	750,000
III Accommodation	120,000 / person/ day			persons	1	days	0
IV Stipend/ meal allowance/ pocket money	20,000 / person/ day		30	persons	1	days	600,000
Refreshments	10,000 / person/ day		30	persons	1	days	300,000
V Venue	300,000 day		1	days	1		300,000
Sub-total							3,000,000
VI Management fee (8%)							240,000
Total							3,240,000

Table B-16 Cost Breakdown of Publications

a. Basis for Estimation:

Materials to be used: Existing materials can be used or the contents of materials shall be designed by PPMU.

Cost Norm: 526/QD-BNN-TC of 3 Mar 2009 and Actual expenses for printing

Purpose: Information Dissemination

b. Cost Breakdown

Materials published	Specification	Unit cost (1)	Unit1	Q'ty (2)	Unit 2	Q'ty (3)	Unit 3	Total cost (1x2x3)
Project Brochure	A4 2pg with full colour/ photograph	(VND) 12,960	/page	4	pages	1,000	sets	(VND) 51,840,000
Newsletter (annual)	A4 2pg with full colour/ photograph	12,960	/page	4	pages	1,000	sets	51,840,000
CD documentary	30 min documentary	16,200	/ disk	200	CDs			3,240,000
Posters	A2 full colour (Trial)	6,480	/ page	1	set			6,480
	A2 full colour (Final)	6,480	/ page	200	sets			1,296,000
Environmental education material	10 pages colour for upper primary/secondary school children	12,960	/ page	10	pages	500	sets	64,800,000
Total cost for materials								173,022,480

Note: <1 Contents of materials shall be designed/decided by PPMU.

<2: Unit price includes management fee (8%)

Table B-17 Cost of Overseas Study Tour in Japan (14 days x 8 participants / batch x 3 batches)

	Items	Unit Cost (US\$)	Unit	Q'ty	Amount (US\$)	Amount (mil. VND)
1	Per Diem	200	MD	112	22,400	380
2	International Airfare	800	person	8	6,400	109
3	Travel cost in Japan (Air, Railway & car)	700	person	8	5,600	95
4	Lecture fee	300	times	3	900	15
5	Escort person	200	MD	7	1,400	24
6	Per Diem & accomodation of escort person	200	MD	7	1,400	24
7	Travel cost of escort person	600	trip	1	600	10
	Sub-total				38,700	657
8	Management fee (8%)				3,096	53
	Cost per batch (10 persons X 14 days.)				41,796	709
	Cost for 3 batches		batch	3	125,388	2,128

Exchange rate US\$ 1.0 = 16,968 VND

Annex C

**Final Report
for
the Preparatory Survey
on the Project for Restoration and Sustainable Management of Protection
Forests in the Socialist Republic of Vietnam**

**Annex C: Standard Design and Cost Estimation of the Component for
Development and Improvement of Protection Forests**

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Annex C: Standard Design and Cost Estimation of the Component for Development and Improvement of Protection Forests

The standard designs of activities under the component were prepared following the MARD Decision No. 516/2002 and No. 4361/2002 which stipulate the design of plantation and other forestry operations. Following sections describe the designs of the respective forestry activity which were proposed by the target provinces. Based on these standard designs the PPMUs will elaborate the detailed design documents during the preparatory stage of the Project. In the process, more varieties of indigenous species might be proposed as a main tree to be planted in the afforestation sites.

1. Development of Watershed Protection Forest

1.1 Afforestation

Standard Design for Reforestation in Watershed Protection Forest

Item	Design
1. Present vegetation type	Ia (grassland) and partly Ib (bush or scattered small trees)
2. Density of planting	1,550~1,600 trees/ha
3. Tree species planted	<ul style="list-style-type: none"> - Mix planting of main (Indigenous) species and subordinate (fast growing) species - Main (Indigenous) species: <i>Dipterocarpus alatus</i>, <i>Hopea odorata</i>,etc. - Subordinate (fast growing) species: <i>Acacia mangium</i>, <i>A. auriculiformis</i>, <i>A.hybrid</i>.etc. - Ratio of main species and subordinate species is 1:1 or 1:2
4. Tending & protection	Spot weeding and clearing are continued for three (3) years after planting
5. Replanting	10 % of the total seedlings planted in the first year will be replanted in the second year.
6. Target tree density at maturity	Multi-layered main species (400 ~ 600 trees/ha) formulates the closed canopy layer in 20- 25 year. (Ia or Ib → II)
7. Remarks	Subordinate species are planted with the main species to form the canopy cover in the early stage to give favorable conditions for the growth of main species. Subordinate species should be gradually harvested by thinning from 7 th year.

Source: MARD Decision No. 516/2002, No. 4361/2002, JICA Survey Team.

1.2 Improvement of Existing Plantation

Standard Design for Improvement of Existing Plantations in Watershed Protection Forest

Item	Design
1. Present vegetation type	Plantation of <i>Acacia spp.</i> or <i>Pinus merkusii</i> (Assumption: 1,000 trees/ha)
2. Density of planting	400 ~ 600 trees/ha
3. Tree species planted	Indigenous tree species are planted between the Pine trees. Tree species: <i>Aquilarina crassna</i> (Do tram), <i>Erythrophloeum fordii</i> (Lim xanh), <i>Lithocarpus fissus</i> (Cong trang), <i>Kadelea candel</i> (Trang),
4. Tending & protection	Tending is continued for three (3) years after planting
5. Replanting	10 % of the total seedlings planted in the first year will be replanted in the second year.
6. Target tree density at maturity	Mixed forest of <i>Acacia spp./Pinus merkusii</i> and indigenous trees. 400~600 trees/ha of multi-layered forest (Ic → II)
7. Remarks	Acacia (subordinate species) should be harvested by thinning.

Source: JICA Survey Team

1.3 Protection of Natural Forest

Standard Design for Protection of Natural Forest

Item	Design
1. Present vegetation type	IVa or IVb (original or matured secondary natural forest) Pinus plantation
2. Activities	Patrolling and reporting. Maintenance of the sign board for forest protection for five (5) years
3. Target tree density at maturity	Natural forest maintained in good conditions (IV → IV)
4. Remarks	The contracted group members are allowed to harvest the forest products following the MARD regulations.

Source: JICA Survey Team

1.4 Assisted Natural Regeneration (ANR)

Standard Design for ANR with Enrichment Planting

Item	Design
1. Present vegetation type	Ib (bush, scattered small trees), partly Ic (woodlot)
2. Density of planting	400 trees/ha
3. Tree species planted	Indigenous tree species: <i>Dipterocapus alatas</i> , <i>Hopea odorata</i> . etc.
4. Tending & protection	Spot weeding and climber cutting are continued for two (2) years after the additional planting followed by two years protection.
5. Replanting	10 % of the total seedlings planted in the first year will be replanted in the second year.
6. Target tree density at maturity	Mixed multi-layered forest of indigenous trees. (Ib, Ic → II) 600 trees/ha of multi-layered forest composed with indigenous trees (400 trees/ha planted additionally, 200 trees/ha naturally regenerating).
7. Remarks	Clearing and thinning should be done properly to control the density of stands.

Source: JICA Survey Team

Standard Design for ANR without Enrichment Planting

Item	Design
1. Present vegetation type	Ic (woodlot), IIa, IIb, IIIa, and IIIb
2. Tending & protection	Assistance for natural regeneration of indigenous trees for three years followed by two years protection
3. Target tree density at maturity	Mixed multi-layered forest of indigenous tree (Ic → II, II→IV)
4. Remarks	Clearing and thinning should be done properly to control the density of stands.

Source: JICA Survey Team

2. Development and Improvement of Coastal Protection Forest

2.1 Afforestation in sandy area

Standard Design for Afforestation in the Coastal Protection Forest

Item	Design
1. Present vegetation type	Ia (grassland or bare land)
2. Density of planting	2,500 ~ 5,000 trees/ha (Mostly 2,500 ~ 3,000 tree/ha)
3. Tree species planted	Tree species: <i>Casuarina equisetifolia</i> , <i>Neem (Azadirachta indica)</i>
4. Tending & protection	Tending is continued for three (3) years after planting
5. Replanting	10 % of the total seedlings planted in the first year will be replanted in the second year.
6. Target tree density at maturity	1,500 ~ 2,000 trees/ha of <i>Casuarina</i> stands with close canopy layer, (Ia,Ib → II)
7. Remarks	No thinning should be done. Number of trees decreases naturally.

Source: JICA Survey Team

2.2 Improvement of existing plantation

Standard Design for Improvement of Existing Plantation in Coastal Protection Forest

Item	Design
1. Present Vegetation type	Casuarina plantation
2. Density of planting	485 trees/ha, Assumption: 1,000 trees/ha of Casuarina.
3. Tree species planted	Tree species: <i>Acacia spp.</i> (mainly <i>Acaia auriculiformis</i>) <i>Neem (Azadirachta indica)</i>
4. Tending & protection	Continue spot weeding, clearing for three (3) years after planting of Acacia
5. Replanting	10 % of the total seedlings planted in the first year will be replanted in the second year.
6. Target tree density at maturity	1,500 trees/ha of <i>Casuarina</i> and <i>Acacia</i> plantation Some of Acacia is assumed to re-generate naturally. (Ic → II)
7. Remarks	No thinning should be done. Density is controlled naturally.

Source: JICA Survey Team

2.3 Enrichment planting

Standard Design for Enrichment Planting in Coastal Protection Forest

Item	Design
1. Present Vegetation type	Ib (bush, small trees)
2 Density of planting	500 trees/ha
3. Tree species planted	<i>Acacia spp.</i> and <i>Neem</i>
4. Tending & protection	Assistance for natural regeneration is continued for two (2) years after enrichment planting, followed by the two (2) years protection
5. Replanting	10 % of the total seedlings planted in the first year will be replanted in the second year.
6. Target tree density at maturity	600 trees/ha of multi-layered mixed forest composed with various indigenous trees, (Ib, Ic → II)
7. Remarks	No thinning should be done.

Source: JICA Survey Team

3. Improvement of SPL-3 Plantations

3.1. Forest Protection

Standard Design for Forest Protection of SPL3 Plantations

Item	Design
1. Present Vegetation type	Plantation composed of; Main (protection) species and subordinate (economic) species such as <i>Acacia spp.</i> (Ic, II)
2. Activities	Patrolling and reporting. Maintenance of the sign board for forest protection
3. Target tree density at maturity	Multi-layered mixed plantation composed of main and subordinate species. 400 ~ 600 trees/ha in 20-25 years, (Ic, II → II)
4. Remarks	The contracted forest management groups will be allowed to harvest the forest products in accordance with the MARD regulations.

Source: JICA Survey Team

3.2. Enrichment Planting in SPL-3 Plantations

Standard Design for Enrichment Planting in the SPL3 Plantation

Items	Design
1. Present Vegetation type	Ib (bush, small trees), Ic (woodlot) Assumption: 1,000 trees/ha of small local trees
2. Density of planting	380 trees/ha
3. Tree species planted	Indigenous tree species: <i>Dipterocapus alatas</i> , <i>Hopea odorata</i> , etc.
4. Tending & protection	Protection is continued for three year after enrichment planting in the first year.
5. Replanting	10 % of the total seedlings planted in the first year will be replanted in the second year.
6. Target tree density at maturity	600 trees/ha of multi-layered forest composed with several indigenous tree species. (Ib,Ic → II)
7. Remarks	Thinning to control the density should be done properly.

Source: JICA Survey Team

3.3. Vegetation Clearing and Thinning

Standard Design for Vegetation Clearing and Thinning of SPL3 Plantations

Items	Design
1. Present Vegetation type	Plantation which has a closed canopy Main (protection) species and subordinate (economic) species such as <i>Acacia spp.</i> (Ic)
2. Species of thinning	<i>Acacia spp.</i> (sub-ordinate species in the plantation)
3.Tending & Protection	Protection is continued until fourth (4 th) year. Assistance for natural generation should not be done.
4. Target tree density at maturity	400~600 trees/ha of multi-layered forest composed with several indigenous tree species in 20~25 years. (Ic → II)
5.Remarks	Thinning should be done properly from seventh (7 th) year

Source: JICA Survey Team

4. Cost Estimation and Annual Cost Disbursement

The unit cost of each forestry development and improvement subcomponent and the estimated annual cost of the component by provinces are presented in tables attached.

Tables

Table C-1. Summary of the Unit Cost of Each Forestry Development Sub-component

Summary of annual cost of forestry development per ha by model

Sub-component	Model	Total cost (mil VND/ha)	Annual Cost (mil VND/ha)					Reference
			Year 1	Year 2	Year 3	Year 4	Year 5	
Watershed sites								
4.1 Afforestation	AF-01	21.86	12.25	4.49	2.56	2.56		Table C-14 Main tree(990) & Sub tree(610)
4.1 Afforestation	AF-02	20.78	11.21	4.45	2.56	2.56		Table C-15 Main tree (800) & Sub tree (800)
4.1 Afforestation	AF-03	20.44	10.92	4.40	2.56	2.56		Table C-16 Main tree (600) & Sub tree (1,000)
4.1 Afforestation -Average	AFW-ave	21.03	11.46	4.45	2.56	2.56		
4.2 Improvement of existing plantations	IMP-01	13.82	6.27	2.94	2.30	2.30		Table C-17 Main tree (485)
4.3 Protection of natural forest & plantation	FP-01	1.08	0.22	0.22	0.22	0.22	0.22	Table C-18
4.4 ANR with Enrichment planting	ANR-01	7.23	3.83	1.67	1.29	0.22	0.22	Table C-19 Main tree (378)
4.5 ANR without Enrichment planting	ANR-02	4.30	1.29	1.29	1.29	0.22	0.22	Table C-20
SPL-3 sites								
5.1 Forest Protection	FP-01	0.65	0.22	0.22	0.22			Table C-21
5.2 Enrichment planting	ANR-03	3.00	2.26	0.31	0.22	0.22		Table C-22 Main tree (378)
5.3 Pruning & Thinning	IMP-02	3.23	2.58	0.22	0.22	0.22		Table C-23
Coastal sites								
6.1 Afforestation	AF-04	18.29	12.11	3.20	1.49	1.49		Table C-24 Sub tree (2,500)
6.1 Afforestation	AF-05	29.49	21.61	4.90	1.49	1.49		Table C-25 Sub tree (5,000)
6.1 Afforestation -Average	AFC-ave	23.89	16.86	4.05	1.49	1.49		
6.2 Improvement of existing plantations	IMP-03	13.49	5.01	3.15	2.67	2.67		Table C-26
6.3 Protection of natural forest & plantation	FP-01	1.08	0.22	0.22	0.22	0.22	0.22	Table C-18 Same as the cost for watershed
6.4 Enrichment planting	ANR-04	5.71	3.39	1.13	0.75	0.22	0.22	Table C-27 Sub tree (500)

Table C-2. Estimated Cost of Forestry Development in Thanh Hoa Province

Proposed Forest Development Plan				2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
Province	Sub-component	Model	Batch	Area (ha)	Area planted, maintained or protected (ha)									
					Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Thanh Hoa Watershed	4.1 Afforestation	AFW-ave	Total	1,270	0	0	0	381	889	1,270	1,270	889	381	0
			Batch 1	381				381	381	381	381	381	381	
			Batch 2	508				508	508	508	508	508	508	
			Batch 3	381				381	381	381	381	381	381	
	4.2 Plantation Improvement	IMP-01	Total	1,400	0	0	0	420	980	1,400	1,400	980	420	0
			Batch 1	420				420	420	420	420	420	420	
			Batch 2	560				560	560	560	560	560	560	
	4.3 Natural Forest Protection (5 yrs)	FP-01	Batch 3	420				420	420	420	420	420	420	
			Total	6,600	0	0	0	3,300	6,600	6,600	6,600	6,600	3,300	0
			Batch 1	3,300				3,300	3,300	3,300	3,300	3,300	3,300	
	4.4 ANR + Enrichment	ANR-01	Batch 2	3,300				3,300	3,300	3,300	3,300	3,300	3,300	
			Total		0	0	0	0	0	0	0	0	0	0
			Batch 1	0				0	0	0	0	0	0	
			Batch 2	0				0	0	0	0	0	0	
	4.5 ANR	ANR-02	Batch 3	0				0	0	0	0	0	0	
			Total	900	0	0	0	450	900	900	900	900	450	0
			Batch 1	450				450	450	450	450	450	450	
			Batch 2	450				450	450	450	450	450	450	

Estimated Cost of Forest Development

Province	Sub-component	Model	Batch	Total cost (mil VND/ha)	Annual Cost of Forest Development (mil. VND)									
					Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Thanh Hoa Watershed	4.1 Afforestation	AFW-ave	Total	26,703	0	0	0	4,366	7,516	7,601	3,970	2,275	975	0
			Batch 1	8,011				4,366	1,695	975	975			
			Batch 2	10,681				5,821	2,259	1,300	1,300			
			Batch 3	8,011					4,366	1,695	975	975		
	4.2 Plantation Improvement	IMP-01	Total	19,341	0	0	0	2,635	4,746	5,246	3,490	2,257	967	0
			Batch 1	5,802				2,635	1,233	967	967			
			Batch 2	7,737				3,513	1,644	1,290	1,290			
	4.3 Natural Forest Protection (5 yrs)	FP-01	Batch 3	5,802				2,635	1,233	967	967			
			Total	7,128	0	0	0	713	1,426	1,426	1,426	1,426	713	0
			Batch 1	3,564				713	713	713	713	713	713	
	4.4 ANR + Enrichment	ANR-01	Batch 2	3,564				713	713	713	713	713	713	
			Batch 3											
			Total	3,874	0	0	0	581	1,162	1,162	678	194	97	0
	4.5 ANR	ANR-02	Batch 1	1,937				581	581	581	97	97		
			Batch 2	1,937				581	581	581	97	97		

Table C-3. Estimated Cost of Forestry Development in Nghe An Province

Proposed Forest Development Plan				Area (ha)	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
					Area planted, maintained or protected (ha)										
					Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	
Nghe An Watershed	4.1 Afforestation	AFW-ave	Batch 1	2,300	0	0	0	690	1,610	2,300	2,300	1,610	690	0	
				690				690	690	690	690	920			
				920					920	920	920	920			
			Batch 3	690					690	690	690	690	690		
	4.2 Plantation Improvement	IMP-01	Total	900	0	0	0	270	630	900	900	630	270	0	
			Batch 1	270				270	270	270	270	270	270		
			Batch 2	360					360	360	360	360			
	4.3 Natural Forest Protection (5 yrs)	FP-01	Batch 3	270					270	270	270	270	270		
			Total	4,100	0	0	0	2,050	4,100	4,100	4,100	4,100	2,050	0	
			Batch 1	2,050				2,050	2,050	2,050	2,050	2,050	2,050		
Nghe An Watershed	4.4 ANR + Enrichment	ANR-01	Batch 2	2,050					2,050	2,050	2,050	2,050	2,050		
			Batch 3	0					0	0	0	0	0		
			Total	0	0	0	0	0	0	0	0	0	0	0	
			ANR-02	0					0	0	0	0	0		
	4.5 ANR	ANR-02	Batch 1	0					0	0	0	0	0		
			Batch 2	0					0	0	0	0	0		

Estimated Cost of Forest Development

Province	Sub-component	Model	Batch	Total cost (mil VND/ha)	Annual Cost of Forest Development (mil. VND)									
					Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Nghe An Watershed	4.1 Afforestation	AFW-ave	Batch 1	48,359				7,907	13,612	13,765	7,189	4,120	1,766	0
				14,508				7,907	3,069	1,766	1,766			
				19,344					10,543	4,092	2,355	2,355		
			Batch 3	14,508						7,907	3,069	1,766	1,766	
	4.2 Plantation Improvement	IMP-01	Total	12,434	0	0	0	1,694	3,051	3,372	2,244	1,451	622	0
			Batch 1	3,730				1,694	793	622	622			
			Batch 2	4,973					2,258	1,057	829	829		
	4.3 Natural Forest Protection (5 yrs)	FP-01	Batch 3	3,730					1,694	793	622	622		
			Total	4,428	0	0	0	443	886	886	886	886	443	0
			Batch 1	2,214				443	443	443	443	443	443	
	4.4 ANR + Enrichment	ANR-01	Batch 2	2,214					443	443	443	443	443	
			Batch 3	0										
			Total	0	0	0	0	0	0	0	0	0	0	0
	4.5 ANR	ANR-02	Batch 1	0										
			Batch 2	0										

Table C-4. Estimated Cost of Forestry Development in Ha Tinh Province

Proposed Forest Development Plan				2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
Province	Sub-component	Model	Batch	Area (ha)	Area planted, maintained or protected (ha)									
					Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Ha Tinh Watershed	4.1 Afforestation	AFW-ave		1,960	0	0	0	588	1,372	1,960	1,960	1,372	588	0
			Batch 1	588				588	588	588	588	784		
			Batch 2	784				784	784	784	784			
			Batch 3	588				588	588	588	588	588		
	4.2 Plantation Improvement	IMP-01	Total	1,000	0	0	0	300	700	1,000	1,000	700	300	0
			Batch 1	300				300	300	300	300	400		
			Batch 2	400				400	400	400	400	400		
	4.3 Natural Forest Protection (5 yrs)	FP-01	Total	8,510	0	0	0	4,255	8,510	8,510	8,510	8,510	4,255	0
			Batch 1	4,255				4,255	4,255	4,255	4,255	4,255	4,255	
			Batch 2	4,255				4,255	4,255	4,255	4,255	4,255	4,255	
	4.4 ANR + Enrichment	ANR-01	Total		0	0	0	0	0	0	0	0	0	0
			Batch 1	0				0	0	0	0	0	0	
			Batch 2	0				0	0	0	0	0	0	
			Batch 3	0				0	0	0	0	0	0	
	4.5 ANR	ANR-02	Total		0	0	0	0	0	0	0	0	0	0
			Batch 1	0				0	0	0	0	0	0	
			Batch 2	0				0	0	0	0	0	0	

Estimated Cost of Forest Development

Province	Sub-component	Model	Batch	Total cost (mil VND/ha)	Annual Cost of Forest Development (mil. VND)									
					Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Ha Tinh Watershed	4.1 Afforestation	AFW-ave		41,210				6,738	11,600	11,730	6,126	3,511	1,505	0
			Batch 1	12,363				6,738	2,615	1,505	1,505			
			Batch 2	16,484				8,984	3,487	2,006	2,006			
			Batch 3	12,363				6,738	2,615	1,505	1,505			
	4.2 Plantation Improvement	IMP-01	Total	13,815	0	0	0	1,882	3,390	3,747	2,493	1,612	691	0
			Batch 1	4,145				1,882	881	691	691			
			Batch 2	5,526				2,509	1,174	921	921			
	4.3 Natural Forest Protection (5 yrs)	FP-01	Batch 3	4,145				1,882	881	691	691			
			Total	9,191	0	0	0	919	1,838	1,838	1,838	1,838	919	0
			Batch 1	4,595				919	919	919	919	919	919	
			Batch 2	4,595				919	919	919	919	919	919	
	4.4 ANR + Enrichment	ANR-01	Total		0	0	0	0	0	0	0	0	0	0
			Batch 1											
			Batch 2											
	4.5 ANR	ANR-02	Total		0	0	0	0	0	0	0	0	0	0
			Batch 1											
			Batch 2											

Table C-5. Estimated Cost of Forestry Development in Quang Binh Province

Proposed Forest Development Plan				2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
Province	Sub-component	Model	Batch	Area (ha)	Area planted, maintained or protected (ha)									
					Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Quang Binh Watershed	4.1 Afforestation	AFW-ave		1,600	0	0	0	480	1,120	1,600	1,600	1,120	480	0
			Batch 1	480				480	480	480	480			
			Batch 2	640					640	640	640	640		
			Batch 3	480					480	480	480	480		
	4.2 Plantation Improvement	IMP-01	Total	0	0	0	0	0	0	0	0	0	0	0
			Batch 1	0				0	0	0	0			
			Batch 2	0				0	0	0	0			
	4.3 Natural Forest Protection (5 yrs)	FP-01	Total	3,000	0	0	0	1,500	3,000	3,000	3,000	3,000	1,500	0
			Batch 1	1,500				1,500	1,500	1,500	1,500	1,500	1,500	
	4.4 ANR + Enrichment	ANR-01	Total	0	0	0	0	0	0	0	0	0	0	0
			Batch 1	0				0	0	0	0			
			Batch 2	0				0	0	0	0			
			Batch 3	0				0	0	0	0			
Coastal	6.1 Afforestation	AFC-AVE	Total	800	0	0	0	400	800	800	800	800	400	0
			Batch 1	400				400	400	400	400	400	400	
			Batch 2	400				400	400	400	400	400	400	
			Batch 3	120				120	120	120	120	120	120	
	6.2 Plantation Improvement	IMP-03	Total	800	0	0	0	240	560	800	800	560	240	0
			Batch 1	240				240	240	240	240	240	240	
			Batch 2	320				320	320	320	320	320	320	
	6.3 Natural Forest Protection (5 yrs)	FP-01	Total	0	0	0	0	0	0	0	0	0	0	0
			Batch 1	0				0	0	0	0	0	0	
			Batch 2	0				0	0	0	0	0	0	
	6.4 ANR + Enrichment	ANR-04	Total	0	0	0	0	0	0	0	0	0	0	0
			Batch 1	0				0	0	0	0	0	0	
			Batch 2	0				0	0	0	0	0	0	
			Batch 3	0				0	0	0	0	0	0	

Estimated Cost of Forest Development

Province	Sub-component	Model	Batch	Total cost (mil VND/ha)	Annual Cost of Forest Development (mil. VND)									
					Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Quang Binh Watershed	4.1 Afforestation	AFW-ave		23,549				5,501	9,469	9,575	5,001	2,866	1,228	0
			Batch 1	10,092				5,501	2,135	1,228	1,228			
			Batch 2	13,456				7,334	2,846	1,638	1,638			
			Batch 3	120					5,501	2,135	1,228	1,228		
	4.2 Plantation Improvement	IMP-01	Total	0	0	0	0	0	0	0	0	0	0	0
			Batch 1	0				0	0	0	0			
			Batch 2	0				0	0	0	0			
	4.3 Natural Forest Protection (5 yrs)	FP-01	Total	3,240	0	0	0	324	648	648	648	648	324	0
			Batch 1	1,620				324	324	324	324	324	324	
	4.4 ANR + Enrichment	ANR-01	Total	0	0	0	0	0	0	0	0	0	0	0
			Batch 1	0				0	0	0	0			
			Batch 2	0				0	0	0	0			
			Batch 3	0				0	0	0	0			
Coastal	6.1 Afforestation	AFC-AVE	Total	3,443	0	0	0	516	1,033	1,033	603	173	86	0
			Batch 1	1,722				516	516	516	86	86		
			Batch 2	1,722				516	516	516	86	86		
			Batch 3	9,557	0	0	0	2,023	3,183	2,850	904	418	179	0
	6.2 Plantation Improvement	IMP-03	Total	10,794	0	0	0	1,202	2,359	2,851	2,249	1,493	640	0
			Batch 1	3,238				1,202	757	640	640			
			Batch 2	4,318				1,603	1,009	853	853			
	6.3 Natural Forest Protection (5 yrs)	FP-01	Total	0	0	0	0	0	0	0	0	0	0	0
			Batch 1	0				0	0	0	0			
			Batch 2	0				0	0	0	0			
	6.4 ANR + Enrichment	ANR-04	Total	0	0	0	0	0	0	0	0	0	0	0
			Batch 1	0				0	0	0	0			
			Batch 2	0				0	0	0	0			
			Batch 3	0				0	0	0	0			

Table C-6. Estimated Cost of Forestry Development in Quang Tri Province

Proposed Forest Development Plan			2010	2011	2012	2013	2014	2015	2016	2017	2018	2019		
Province	Sub-component	Model	Batch	Area (ha)	Area planted, maintained or protected (ha)									
					Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Quang Tri Watershed	4.1 Afforestation	AFW-ave	Batch 1	2,900	0	0	0	870	2,030	2,900	2,900	2,030	870	0
			Batch 2	870				870	870	870	870	870	870	
			Batch 3	1,160				1,160	1,160	1,160	1,160	1,160	1,160	
			Batch 3	870				870	870	870	870	870	870	
	4.2 Plantation Improvement	Total		0	0	0	0	0	0	0	0	0	0	0
		IMP-01	Batch 1	0				0	0	0	0	0	0	
		IMP-01	Batch 2	0				0	0	0	0	0	0	
	4.3 Natural Forest Protection (5 yrs)	Total	4,000	0	0	0	2,000	4,000	4,000	4,000	4,000	2,000	0	0
		FP-01	Batch 1	2,000				2,000	2,000	2,000	2,000	2,000	2,000	
		FP-01	Batch 2	2,000				2,000	2,000	2,000	2,000	2,000	2,000	
	4.4 ANR + Enrichment	Total	300	0	0	0	90	210	300	300	300	210	90	
		ANR-01	Batch 1	90				90	90	90	90	90	90	
		ANR-01	Batch 2	120				120	120	120	120	120	120	
		ANR-01	Batch 3	90				90	90	90	90	90	90	
	4.5 ANR	Total	2,450	0	0	0	1,225	2,450	2,450	2,450	2,450	1,225	0	
		ANR-02	Batch 1	1,225				1,225	1,225	1,225	1,225	1,225	1,225	
		ANR-02	Batch 2	1,225				1,225	1,225	1,225	1,225	1,225	1,225	
SPL3 site	5.1 Forest Protection	Total	1,610	0	0	0	805	1,610	1,610	805	0	0	0	0
		FP-02	Batch 1	805				805	805	805				
		FP-02	Batch 2	805				805	805	805				
	5.2 Enrichment planting	Total	400	0	0	120	280	400	400	280	120	0	0	0
		ANR-03	Batch 1	120				120	120	120				
		ANR-03	Batch 2	160				160	160	160				
	5.3 Vegetation clearing & thinning	Total	1,600	0	0	0	800	1,600	1,600	1,600	800	0	0	0
		IMP-02	Batch 1	800				800	800	800				
		IMP-02	Batch 2	800				800	800	800				

Estimated Cost of Forest Development

Province	Sub-component	Model	Batch	Total cost (mil VND/ha)	Annual Cost of Forest Development (mil. VND)									
					Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Quang Tri Watershed	4.1 Afforestation	AFW-ave	Total	60,974				9,970	17,163	17,356	9,065	5,195	2,227	0
			Batch 1	18,292				9,970	3,869	2,227	2,227			
			Batch 2	24,390					13,293	5,159	2,969	2,969		
			Batch 3	18,292					9,970	3,869	2,227	2,227		
	4.2 Plantation Improvement	Total	0	0	0	0	0	0	0	0	0	0	0	0
		IMP-01	Batch 1											
		IMP-01	Batch 2											
	4.3 Natural Forest Protection (5 yrs)	Total	4,320	0	0	0	432	864	864	864	864	432	0	0
		FP-01	Batch 1	2,160				432	432	432	432	432	432	
		FP-01	Batch 2	2,160				432	432	432	432	432	432	
	4.4 ANR + Enrichment	Total	2,168	0	0	0	345	610	662	325	162	45	19	
		ANR-01	Batch 1	650				345	150	116	19	19		
		ANR-01	Batch 2	867					460	201	155	26	26	
		ANR-01	Batch 3	650					345	150	116	19	19	
	4.5 ANR	Total	10,545	0	0	0	1,581	3,162	3,162	1,846	529	265	0	
		ANR-02	Batch 1	5,273				1,581	1,581	1,581	265	265		
		ANR-02	Batch 2	5,273				1,581	1,581	1,581	265	265		
SPL3 site	5.1 Forest Protection	Total	1,043	0	0	0	174	348	348	174	0	0	0	0
		FP-02	Batch 1	522				174	174	174				
		FP-02	Batch 2	522				174	174	174				
	5.2 Enrichment planting	Total	1,198	0	0	271	398	346	97	60	26	0	0	0
		ANR-03	Batch 1	359				271	37	26	0			
		ANR-03	Batch 2	479					361	49	35	0		
	5.3 Vegetation clearing & thinning	Total	5,174	0	0	0	2,063	2,241	351	346	173	0	0	0
		IMP-02	Batch 1	2,587				2,063	178	173	173			
		IMP-02	Batch 2	2,587					2,063	178	173	173		

Table C-7. Estimated Cost of Forestry Development in T.T. Hue Province

Proposed Forest Development Plan				2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
Province	Sub-component	Model	Batch	Area (ha)	Area planted, maintained or protected (ha)									
					Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
T.T. Hue Watershed	4.1 Afforestation	AFW-ave	Total	3,000	0	0	0	900	2,100	3,000	3,000	2,100	900	0
			Batch 1	900				900	900	900	900	1,200		
			Batch 2	1,200					1,200	1,200	1,200	1,200		
			Batch 3	900					900	900	900	900	900	
	4.2 Plantation Improvement	IMP-01	Total	0	0	0	0	0	0	0	0	0	0	0
			Batch 1	0				0	0	0	0	0	0	0
			Batch 2	0				0	0	0	0	0	0	0
	4.3 Natural Forest Protection (5 yrs)	FP-01	Total	8,000	0	0	0	4,000	8,000	8,000	8,000	8,000	4,000	0
			Batch 1	4,000				4,000	4,000	4,000	4,000	4,000	4,000	
			Batch 2	4,000				4,000	4,000	4,000	4,000	4,000	4,000	
	4.4 ANR + Enrichment	ANR-01	Total	500	0	0	0	150	350	500	500	500	350	150
			Batch 1	150				150	150	150	150	150	150	
			Batch 2	200				200	200	200	200	200	200	
			Batch 3	150					150	150	150	150	150	
	4.5 ANR	ANR-02	Total	2,000	0	0	0	1,000	2,000	2,000	2,000	2,000	1,000	0
			Batch 1	1,000				1,000	1,000	1,000	1,000	1,000	1,000	
SPL3 site	5.1 Forest Protection	FP-02	Total	700	0	0	0	350	700	700	350	0	0	0
			Batch 1	350				350	350	350				
			Batch 2	350				350	350	350				
	5.2 Enrichment planting	ANR-03	Total	0	0	0	0	0	0	0	0	0	0	0
			Batch 1	0				0	0	0	0	0	0	0
			Batch 2	0				0	0	0	0	0	0	0
	5.3 Vegetation clearing & thinning	IMP-02	Total	3,400	0	0	0	1,700	3,400	3,400	3,400	1,700	0	0
			Batch 1	1,700				1,700	1,700	1,700	1,700	1,700	1,700	
			Batch 2	1,700				1,700	1,700	1,700	1,700	1,700	1,700	

Estimated Cost of Forest Development

Province	Sub-component	Model	Batch	Total cost (mil VND/ha)	Annual Cost of Forest Development (mil. VND)									
					Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
T.T. Hue	4.1 Afforestation	AFW-ave	Total	63,077				10,314	17,754	17,954	9,377	5,374	2,303	0
			Batch 1	18,923				10,314	4,003	2,303	2,303			
			Batch 2	25,231					13,752	5,337	3,071			
			Batch 3	18,923						10,314	4,003	2,303	2,303	
	4.2 Plantation Improvement	IMP-01	Total	0	0	0	0	0	0	0	0	0	0	0
			Batch 1											
			Batch 2											
	4.3 Natural Forest Protection (5 yrs)	FP-01	Total	8,640	0	0	0	864	1,728	1,728	1,728	1,728	864	0
			Batch 1	4,320				864	864	864	864	864	864	
			Batch 2	4,320				864	864	864	864	864	864	
	4.4 ANR + Enrichment	ANR-01	Total	3,613	0	0	0	575	1,017	1,103	541	269	76	32
			Batch 1	1,084				575	251	194	32	32		
			Batch 2	1,445					766	334	258	43	43	
			Batch 3	1,084					575	251	194	32	32	
	4.5 ANR	ANR-02	Total	8,609	0	0	0	1,291	2,582	2,582	1,507	432	216	0
			Batch 1	4,304				1,291	1,291	1,291	216	216		
SPL3 site	5.1 Forest Protection	FP-02	Total	454	0	0	0	76	151	151	76	0	0	0
			Batch 1	227				76	76	76				
			Batch 2	227				76	76	76				
	5.2 Enrichment planting	ANR-03	Total	0	0	0	0	0	0	0	0	0	0	0
			Batch 1					0	0	0	0	0	0	
			Batch 2					0	0	0	0	0	0	
	5.3 Vegetation clearing & thinning	IMP-02	Total	10,994	0	0	0	4,384	4,763	746	734	367	0	0
			Batch 1	5,497				4,384	379	367	367	367	367	
			Batch 2	5,497				4,384	379	367	367	367	367	

Table C-8. Estimated Cost of Forestry Development in Quang Nam Province

Proposed Forest Development Plan				2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
Province	Sub-component	Model	Batch	Area (ha)	Area planted, maintained or protected (ha)									
					Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Quang Nam Watershed	4.1 Afforestation	AFW-ave	970	0	0	0	291	679	970	970	679	291	0	
			Batch 1	291			291	291	291	291	291	291		
			Batch 2	388				388	388	388	388			
			Batch 3	291				291	291	291	291			
	4.2 Plantation Improvement	Total	0	0	0	0	0	0	0	0	0	0	0	0
		IMP-01	0				0	0	0	0	0	0	0	
		Batch 1	0				0	0	0	0	0	0	0	
	4.3 Natural Forest Protection (5 yrs)	Total	7,000	0	0	0	3,500	7,000	7,000	7,000	7,000	3,500	0	
		FP-01	3,500				3,500	3,500	3,500	3,500	3,500	3,500		
		Batch 1	3,500				3,500	3,500	3,500	3,500	3,500	3,500		
	4.4 ANR + Enrichment	Total	2,100	0	0	0	630	1,470	2,100	2,100	2,100	1,470	630	
		ANR-01	630				630	630	630	630	630	630		
		Batch 1	630				630	630	630	630	630	630		
		Batch 2	840				840	840	840	840	840	840		
		Batch 3	630				630	630	630	630	630	630		
	4.5 ANR	Total	1,100	0	0	0	550	1,100	1,100	1,100	1,100	550	0	
		ANR-02	550				550	550	550	550	550	550		
	SPL3 site	5.1 Forest Protection	Total	120	0	0	0	60	120	120	60	0	0	0
			FP-02	60				60	60	60				
			Batch 1	60				60	60	60				
		5.2 Enrichment planting	Total	0	0	0	0	0	0	0	0	0	0	0
			ANR-03	0				0	0	0				
			Batch 1	0				0	0	0				
	5.3 Vegetation clearing & thinning	Total	1,430	0	0	0	715	1,430	1,430	1,430	715	0	0	
		IMP-02	715				715	715	715	715	715			

Estimated Cost of Forest Development

Province	Sub-component	Model	Batch	Total cost (mil VND/ha)	Annual Cost of Forest Development (mil. VND)									
					Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Quang Nam Watershed	4.1 Afforestation	AFW-ave	20,395		3,335	5,741	5,805	3,032	1,738	745	0			
			Batch 1	6,118			3,335	1,294	745	745				
			Batch 2	8,158				4,446	1,726	993	993			
			Batch 3	6,118					3,335	1,294	745	745		
	4.2 Plantation Improvement	Total	0	0	0	0	0	0	0	0	0	0	0	0
		IMP-01												
		Batch 1												
	4.3 Natural Forest Protection (5 yrs)	Total	7,560	0	0	0	756	1,512	1,512	1,512	1,512	756	0	
		FP-01	3,780				756	756	756	756	756	756		
		Batch 1	3,780					756	756	756	756	756		
	4.4 ANR + Enrichment	Total	15,174	0	0	0	2,414	4,271	4,631	2,274	1,131	318	136	
		ANR-01	4,552				2,414	1,053	813	136	136			
		Batch 1	4,552					3,218	1,404	1,084	181	181		
		Batch 2	6,070						2,414	1,053	813	136	136	
		Batch 3	4,552							0	0	0	0	
	4.5 ANR	Total	4,735	0	0	0	710	1,420	1,420	829	238	119	0	
		ANR-02	2,367				710	710	710	119	119			
		Batch 1	2,367					710	710	710	119	119		
		Batch 2	2,367						710	710	119	119		
SPL3 site	5.1 Forest Protection	Total	78	0	0	0	13	26	26	13	0	0	0	
		FP-02	39				13	13	13	13				
	5.2 Enrichment planting	Total	0	0	0	0	0	0	0	0	0	0	0	0
		ANR-03					0	0	0	0				
		Batch 1					0	0	0	0				
	5.3 Vegetation clearing & thinning	Total	4,624	0	0	0	1,844	2,003	314	309	154	0	0	
		IMP-02	2,312				1,844	159	154	154				
		Batch 1	2,312					1,844	159	154	154			
		Batch 2	2,312						1,844	159	154	154		

Table C-9. Estimated Cost of Forestry Development in Quang Ngai Province

Proposed Forest Development Plan				2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
Province	Sub-component	Model	Batch	Area (ha)	Area planted , maintained or protected (ha)									
					Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Quang Ngai Watershed	4.1 Afforestation	AFW-ave		3,500	0	0	0	1,050	2,450	3,500	3,500	2,450	1,050	0
			Batch 1	1,050				1,050	1,050	1,050	1,050			
			Batch 2	1,400				1,400	1,400	1,400	1,400			
			Batch 3	1,050				1,050	1,050	1,050	1,050			
	4.2 Plantation Improvement	IMP-01	Total		0	0	0	0	0	0	0	0	0	0
			Batch 1	0				0	0	0	0			
			Batch 2	0				0	0	0	0			
	4.3 Natural Forest Protection (5 yrs)	FP-01	Total	3,200	0	0	0	1,600	3,200	3,200	3,200	3,200	1,600	0
			Batch 1	1,600				1,600	1,600	1,600	1,600	1,600	1,600	
			Batch 2	1,600				1,600	1,600	1,600	1,600	1,600	1,600	
	4.4 ANR + Enrichment	ANR-01	Total	600	0	0	0	180	420	600	600	600	420	180
			Batch 1	180				180	180	180	180	180	180	
			Batch 2	240				240	240	240	240	240	240	
			Batch 3	180				180	180	180	180	180	180	
	4.5 ANR	ANR-02	Total	2,700	0	0	0	1,350	2,700	2,700	2,700	2,700	1,350	0
			Batch 1	1,350				1,350	1,350	1,350	1,350	1,350	1,350	
			Batch 2	1,350				1,350	1,350	1,350	1,350	1,350	1,350	
SPL3 site	5.1 Forest Protection	FP-02	Total		0	0	0	0	0	0	0	0	0	0
			Batch 1	0				0	0	0				
			Batch 2	0				0	0	0				
	5.2 Enrichment planting	ANR-03	Total		0	0	0	0	0	0	0	0	0	0
			Batch 1	0				0	0	0				
			Batch 2	0				0	0	0				
	5.3 Vegetation clearing & thinning	IMP-02	Total	3,790	0	0	0	1,895	3,790	3,790	3,790	1,895	0	0
			Batch 1	1,895				1,895	1,895	1,895	1,895			
			Batch 2	1,895				1,895	1,895	1,895	1,895			

Estimated Cost of Forest Development

Province	Sub-component	Model	Batch	Total cost (mil VND/ha)	Annual Cost of Forest Development (mil. VND)									
					Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Quang Ngai Watershed	4.1 Afforestation	REF-AVE	Total	73,590				12,033	20,713	20,946	10,940	6,270	2,687	0
			Batch 1	22,077				12,033	4,670	2,687	2,687			
			Batch 2	29,436					16,043	6,227	3,583			
	4.2 Plantation Improvement		Batch 3	22,077						12,033	4,670	2,687		
			Total	0	0	0	0	0	0	0	0	0	0	0
			Batch 1											
			Batch 2											
			Batch 3											
	4.3 Natural Forest Protection (5 yrs)	FPT-01	Total	3,456	0	0	0	346	691	691	691	691	346	0
			Batch 1	1,728				346	346	346	346	346		
			Batch 2	1,728				346	346	346	346	346		
SPL3 site	4.4 ANR + Enrichment	ANR-01	Total	4,335	0	0	0	690	1,220	1,323	650	323	91	39
			Batch 1	1,301				690	301	232	39	39		
			Batch 2	1,734				919	401	310	52	52		
			Batch 3	1,301				690	301	232	39	39		
	4.5 ANR	ANR-02	Total	11,622	0	0	0	1,743	3,485	3,485	2,034	583	292	0
			Batch 1	5,811				1,743	1,743	1,743	292	292		
			Batch 2	5,811				1,743	1,743	1,743	292	292		
	5.1 Forest Protection		Total	0	0	0	0	0	0	0	0	0	0	0
			Batch 1											
			Batch 2											
	5.2 Enrichment planting		Total	0	0	0	0	0	0	0	0	0	0	0
			Batch 1											
			Batch 2											
	5.3 Vegetation clearing & thinning	IEP-02	Total	12,255	0	0	0	4,887	5,309	832	819	409	0	0
			Batch 1	6,128				4,887	422	409	409			
			Batch 2	6,128				4,887	422	409	409			

Table C-10. Estimated Cost of Forestry Development in Binh Dinh Province

Proposed Forest Development Plan					2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Province	Sub-component	Model	Batch	Area (ha)	Area planted, maintained or protected (ha)									
					Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Binh Dinh Watershed	4.1 Afforestation	AFW-ave	2,480	0	0	0	744	1,736	2,480	2,480	1,736	744	0	0
			Batch 1	744			744	744	744	744	992	992	992	0
			Batch 2	992				992	992	992	992	992	992	0
			Batch 3	744				744	744	744	744	744	744	0
	4.2 Plantation Improvement	Total		0	0	0	0	0	0	0	0	0	0	0
		IMP-01	Batch 1	0				0	0	0	0	0	0	0
		IMP-01	Batch 2	0				0	0	0	0	0	0	0
	4.3 Natural Forest Protection (5 yrs)	Total	3,710	0	0	0	1,855	3,710	3,710	3,710	3,710	3,710	1,855	0
		FP-01	Batch 1	1,855			1,855	1,855	1,855	1,855	1,855	1,855	1,855	0
		FP-01	Batch 2	1,855			1,855	1,855	1,855	1,855	1,855	1,855	1,855	0
	4.4 ANR + Enrichment	Total		0	0	0	0	0	0	0	0	0	0	0
		ANR-01	Batch 1	0		0	0	0	0	0	0	0	0	0
		ANR-01	Batch 2	0		0	0	0	0	0	0	0	0	0
	4.5 ANR	Total	4,700	0	0	0	2,350	4,700	4,700	4,700	4,700	4,700	2,350	0
		ANR-02	Batch 1	2,350			2,350	2,350	2,350	2,350	2,350	2,350	2,350	0

Estimated Cost of Forest Development

Province	Sub-component	Model	Batch	Total cost (mil VND/ha)	Annual Cost of Forest Development (mil. VND)									
					Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Binh Dinh Watershed	4.1 Afforestation	AFW-ave	52,144				8,526	14,677	14,842	7,752	4,443	1,904	0	0
			Batch 1	15,643			8,526	3,309	1,904	1,904				
			Batch 2	20,857			11,368	4,412	2,539	2,539				
			Batch 3	15,643			8,526	3,309	1,904	1,904				
	4.2 Plantation Improvement	Total	0	0	0	0								0
		IMP-01	Batch 1											
		IMP-01	Batch 2											
	4.3 Natural Forest Protection (5 yrs)	Total	4,007	0	0	0	401	801	801	801	801	401	0	0
		FP-01	Batch 1	2,003			401	401	401	401	401	401	401	0
		FP-01	Batch 2	2,003			401	401	401	401	401	401	401	0
	4.4 ANR + Enrichment	Total	0	0	0	0	0	0	0	0	0	0	0	0
		ANR-01	Batch 1											
		ANR-01	Batch 2											
	4.5 ANR	Total	19,215	0	0	0	3,033	6,067	6,067	3,541	508	0	0	0
		ANR-02	Batch 1	9,607			3,033	3,033	3,033	508				
		ANR-02	Batch 2	9,607			3,033	3,033	3,033	508				

Table C-11. Estimated Cost of Forestry Development in Phu Yen Province

Proposed Forest Development Plan				2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
Province	Sub-component	Model	Batch	Area (ha)	Area planted, maintained or protected (ha)									
					Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Phu Yen Watershed	4.1 Afforestation	AFW-ave		1,500	0	0	0	450	1,050	1,500	1,500	1,050	450	0
			Batch 1	450				450	450	450	450	600	600	
			Batch 2	600				600	600	600	600	600	600	
			Batch 3	450				450	450	450	450	450	450	
	4.2 Plantation Improvement	IMP-01	Total		0	0	0	0	0	0	0	0	0	0
			Batch 1	0				0	0	0	0	0	0	0
			Batch 2	0				0	0	0	0	0	0	0
	4.3 Natural Forest Protection (5 yrs)	FP-01	Total	4,350	0	0	0	2,175	4,350	4,350	4,350	4,350	2,175	0
			Batch 1	2,175				2,175	2,175	2,175	2,175	2,175	2,175	
	4.4 ANR + Enrichment	ANR-01	Total		0	0	0	0	0	0	0	0	0	0
			Batch 1	0				0	0	0	0	0	0	0
			Batch 2	0				0	0	0	0	0	0	0
			Batch 3	0				0	0	0	0	0	0	0
	4.5 ANR	ANR-02	Total	900	0	0	0	450	900	900	900	900	450	0
			Batch 1	450				450	450	450	450	450	450	
SPL3 site	5.1 Forest Protection	FP-02	Total	2,020	0	0	0	1,010	2,020	2,020	1,010	0	0	0
			Batch 1	1,010				1,010	1,010	1,010	1,010			
			Batch 2	1,010				1,010	1,010	1,010	1,010			
	5.2 Enrichment planting	ANR-03	Total	600	0	0	180	420	600	600	420	180	0	0
			Batch 1	180			180	180	180	180	180			
			Batch 2	240			240	240	240	240	240			
	5.3 Vegetation clearing & thinning	IMP-02	Total	180			180	180	180	180	180			
			Batch 1	0			0	0	0	0	0			
			Batch 2	0			0	0	0	0	0			

Estimated Cost of Forest Development

Province	Sub-component	Model	Batch	Total cost (mil VND/ha)	Annual Cost of Forest Development (mil. VND)									
					Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Phu Yen Watershed	4.1 Afforestation	AFW-ave	Total	31,539				5,157	8,877	8,977	4,689	2,687	1,152	0
			Batch 1	9,462				5,157	2,001	1,152	1,152			
			Batch 2	12,615				6,876	2,669	1,536	1,536			
	4.2 Plantation Improvement	IMP-01	Batch 3	9,462				5,157	2,001	1,152	1,152			
			Total	0	0	0	0	0	0	0	0	0	0	0
			Batch 1											
			Batch 2											
			Batch 3											
	4.3 Natural Forest Protection (5 yrs)	FP-01	Total	4,698	0	0	0	470	940	940	940	940	470	0
			Batch 1	2,349				470	470	470	470	470	470	
			Batch 2	2,349				470	470	470	470	470	470	
SPL3 site	4.4 ANR + Enrichment	ANR-01	Total	0	0	0	0	0	0	0	0	0	0	0
			Batch 1											
			Batch 2											
	4.5 ANR	ANR-02	Batch 3											
			Total	3,874	0	0	0	581	1,162	1,162	678	194	97	0
			Batch 1	1,937				581	581	581	97	97		
			Batch 2	1,937				581	581	581	97	97		
	5.1 Forest Protection	FP-02	Total	1,309	0	0	0	218	436	436	218	0	0	0
			Batch 1	654				218	218	218				
			Batch 2	654				218	218	218				
	5.2 Enrichment planting	ANR-03	Total	1,797	0	0	407	597	519	146	91	39	0	0
			Batch 1	539			407	55	39	39	0			
			Batch 2	719				542	73	52	52	0		
	5.3 Vegetation clearing & thinning	IMP-02	Batch 3	539				407	55	39	39	0	0	0
			Total	0	0	0	0	0	0	0	0	0	0	0
			Batch 1											
			Batch 2											

Table C-12. Estimated Cost of Forestry Development in Ninh Thuan Province

Proposed Forest Development Plan				2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
Province	Sub-component	Model	Batch	Area (ha)	Area planted, maintained or protected (ha)									
					Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Ninh Thuan Watershed	4.1 Afforestation	AFW-ave	Batch 1	1,610	0	0	0	483	1,127	1,610	1,610	1,127	483	0
			Batch 2	483			483	483	483	483	483	483	483	
			Batch 3	644				644	644	644	644			
				483				483	483	483	483			
	4.2 Improvement	IMP-01	Total	0	0	0	0	0	0	0	0	0	0	0
			Batch 1	0				0	0	0	0			
			Batch 2	0				0	0	0	0			
	4.3 Protection	FP-01	Total	7,900	0	0	0	3,950	7,900	7,900	7,900	7,900	3,950	0
			Batch 1	3,950				3,950	3,950	3,950	3,950	3,950	3,950	
			Batch 2	3,950				3,950	3,950	3,950	3,950	3,950	3,950	
	4.4 ANR + Enrichment	ANR-01	Total	1,200	0	0	0	360	840	1,200	1,200	1,200	840	360
			Batch 1	360				360	360	360	360	360	480	
			Batch 2	480				480	480	480	480	480	480	
			Batch 3	360				360	360	360	360	360	360	
	4.5 ANR	ANR-02	Total	1,500	0	0	0	750	1,500	1,500	1,500	1,500	750	0
			Batch 1	750				750	750	750	750	750	750	
			Batch 2	750				750	750	750	750	750	750	
Coastal	6.1 Afforestation	AFC-AVE	Batch 1	50	0	0	0	15	35	50	50	35	15	0
			Batch 2	15				15	15	15	15			
			Batch 3	20				20	20	20	20			
				15				15	15	15	15			
	6.2 Plantation Improvement	IMP-03	Total	0	0	0	0	0	0	0	0	0	0	0
			Batch 1	0				0	0	0	0			
			Batch 2	0				0	0	0	0			
	6.3 Natural Forest Protection (5 yrs)	FP-01	Total	0	0	0	0	0	0	0	0	0	0	0
			Batch 1	0				0	0	0	0			
			Batch 2	0				0	0	0	0			
	6.4 ANR + Enrichment	ANR-04	Total	0	0	0	0	0	0	0	0	0	0	0
			Batch 1	0				0	0	0	0			
			Batch 2	0				0	0	0	0			
			Batch 3	0				0	0	0	0			

Estimated Cost of Forest Development

Province	Sub-component	Model	Batch	Total cost (mil VND/ha)	Annual Cost of Forest Development (mil. VND)									
					Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Ninh Thuan Watershed	4.1 Afforestation	AFW-ave	Total	33,851				5,535	9,528	9,635	5,032	2,884	1,236	0
			Batch 1	10,155				5,535	2,148	1,236	1,236			
			Batch 2	13,541					7,380	2,864	1,648	1,648		
			Batch 3	10,155						5,535	2,148	1,236	1,236	
	4.2 Improvement	IMP-01	Total	0	0	0	0	0	0	0	0	0	0	0
			Batch 1											
			Batch 2											
	4.3 Protection	FP-01	Total	8,532	0	0	0	853	1,706	1,706	1,706	1,706	853	0
			Batch 1	4,266				853	853	853	853	853	853	
			Batch 2	4,266					853	853	853	853	853	
	4.4 ANR + Enrichment	ANR-01	Total	8,671	0	0	0	1,379	2,441	2,646	1,299	646	181	78
			Batch 1	2,601				1,379	602	465	78	78		
			Batch 2	3,468					1,839	802	620	104	104	
			Batch 3	2,601					1,379	602	465	78	78	
	4.5 ANR	ANR-02	Total	6,456	0	0	0	968	1,936	1,936	1,130	324	162	0
			Batch 1	3,228				968	968	968	162	162		
			Batch 2	3,228					968	968	162	162		
Coastal	6.1 Afforestation	AFC-AVE	Total	1,195	0	0	0	253	398	356	113	52	22	0
			Batch 1	358				253	61	22	22			
			Batch 2	478					337	81	30	30		
			Batch 3	358					253	61	22	22		
	6.2 Plantation Improvement	IMP-03	Total	0	0	0	0	0	0	0	0	0	0	0
			Batch 1	0										
			Batch 2	0										
	6.3 Natural Forest Protection (5 yrs)	FP-01	Total	0	0	0	0	0	0	0	0	0	0	0
			Batch 1	0				0	0	0	0	0	0	
			Batch 2	0					0	0	0	0	0	
			Batch 3	0					0	0	0	0	0	
	6.4 ANR + Enrichment	ANR-04	Total	0	0	0	0	0	0	0	0	0	0	0
			Batch 1	0				0	0	0	0	0	0	
			Batch 2	0					0	0	0	0	0	
			Batch 3	0					0	0	0	0	0	

Table C-13. Estimated Cost of Forestry Development in Binh Thuan Province

Proposed Forest Development Plan				2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
Province	Sub-component	Model	Batch	Area (ha)	Area planted, maintained or protected (ha)									
					Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Binh Thuan Watershed	4.1 Refo	AFW-ave	Batch 1	0	0	0	0	0	0	0	0	0	0	0
				0			0	0	0	0	0	0	0	0
				0			0	0	0	0	0	0	0	0
	4.2 Improvement	IMP-01	Total	0	0	0	0	0	0	0	0	0	0	0
				0			0	0	0	0	0	0	0	0
				0			0	0	0	0	0	0	0	0
	4.3 Protection	FP-01	Total	3,600	0	0	0	1,800	3,600	3,600	3,600	3,600	1,800	0
				1,800			1,800	1,800	1,800	1,800	1,800	1,800	1,800	0
				1,800			1,800	1,800	1,800	1,800	1,800	1,800	1,800	0
	4.4 ANR + Enrichment	ANR-01	Total	0	0	0	0	0	0	0	0	0	0	0
				0			0	0	0	0	0	0	0	0
				0			0	0	0	0	0	0	0	0
	4.5 ANR	ANR-02	Total	4,200	0	0	0	2,100	4,200	4,200	4,200	4,200	2,100	0
				2,100			2,100	2,100	2,100	2,100	2,100	2,100	2,100	0
				2,100			2,100	2,100	2,100	2,100	2,100	2,100	2,100	0
Coastal	6.1 Afforestation	AFC-AVE	Total	1,100	0	0	0	330	770	1,100	1,100	770	330	0
				330			330	330	330	330	330	330	330	0
				440			440	440	440	440	440	440	440	0
	6.2 Plantation Improvement	IMP-03	Total	0	0	0	0	0	0	0	0	0	0	0
				0			0	0	0	0	0	0	0	0
				0			0	0	0	0	0	0	0	0
	6.3 Natural Forest Protection (5 yrs)	FP-01	Total	0	0	0	0	0	0	0	0	0	0	0
				0			0	0	0	0	0	0	0	0
				0			0	0	0	0	0	0	0	0
	6.4 ANR + Enrichment	ANR-04	Total	1,600	0	0	0	480	1,120	1,600	1,600	1,600	1,120	480
				480			480	480	480	480	480	480	480	480
				640			640	640	640	640	640	640	640	480
				480			480	480	480	480	480	480	480	480

Estimated Cost of Forest Development

Province	Sub-component	Model	Batch	Total cost (mil VND/ha)	Annual Cost of Forest Development (mil. VND)									
					Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Binh Thuan Watershed	4.1 Refo	AFW-ave	Batch 1	0	0	0	0	0	0	0	0	0	0	0
				0										
				0										
	4.2 Improvement	IMP-01	Total	0	0	0	0	0	0	0	0	0	0	0
	4.3 Protection	FP-01	Total	3,888	0	0	0	389	778	778	778	778	389	0
				1,944			389	389	389	389	389	389	389	0
				1,944			389	389	389	389	389	389	389	0
	4.4 ANR + Enrichment	ANR-01	Total	0	0	0	0	0	0	0	0	0	0	0
				0			0	0	0	0	0	0	0	0
				0			0	0	0	0	0	0	0	0
	4.5 ANR	ANR-02	Total	18,078	0	0	0	2,711	5,421	5,421	3,164	907	454	0
				9,039			2,711	2,711	2,711	2,711	2,711	2,711	2,711	0
				9,039			2,711	2,711	2,711	2,711	2,711	2,711	2,711	0
Coastal	6.1 Afforestation	AFC-AVE	Total	26,281				5,564	8,754	8,737	2,485	1,149	493	0
				7,884				5,564	1,336	493	493			
				10,512				7,418	1,781	657	657			
	6.2 Plantation Improvement	IMP-03	Total	0	0	0	0	0	0	0	0	0	0	0
				0			0	0	0	0	0	0	0	0
				0			0	0	0	0	0	0	0	0
	6.3 Natural Forest Protection (5 yrs)	FP-01	Total	0	0	0	0	0	0	0	0	0	0	0
				0			0	0	0	0	0	0	0	0
				0			0	0	0	0	0	0	0	0
	6.4 ANR + Enrichment	ANR-04	Total	9,130	0	0	0	1,627	2,712	2,713	1,129	603	242	104
				2,739			1,627	544	362	104	104			
				3,652			2,169	725	482	138	138			
				2,739			1,627	544	362	104	104			

Table C-14. Cost Breakdown per ha of Afforestation in the Watershed (AF-01)

Density (trees/ha):	1,600	Unit cost/MD:	60,000
Economic species: <i>Acacia spp.</i>	610	Replanting:	10%
Indigenous species (2 years old):	990		

Activity	Unit	Quantity	Norm	Cost (VND)			Annual Cost per ha (VND million)						
				Man-day	Unit cost	Amount	Year 1	Year 2	Year 3	Year 4	Total		
I Labor cost						16,388,167	7.77	3.88	2.37	2.37	16.39		
1 Year 1						129.46		7,767,311	7.77				
1.1 Planting													
- Vegetation clearing	m ²	10,000	263	38.02	60,000	2,281,369							
- Hole digging for economic species (30*30*30 cm)	hole	610	88	6.93	60,000	415,909							
- Hole digging for indigenous species (40*40*40 cm)	hole	990	47	21.06	60,000	1,263,830							
- Hole backfilling for economic species	hole	610	174	3.51	60,000	210,345							
- Hole backfilling for indigenous species	hole	990	118	8.39	60,000	503,390							
- Transport and application of fertilizer	tree	1,600	99	16.16	60,000	969,697							
- Transport and planting of economic species (<0.5 kg/tree)	tree	610	113	5.40	60,000	323,894							
- Transport and planting of protection species (<1.2 kg/tree)	tree	990	55	18.00	60,000	1,080,000							
- Clearing grass on plot's boundary	m ²	362	77	4.70	60,000	282,078							
1.2 Protection *	ha	-	-	7.28	60,000	436,800							
2 Year 2						64.69		3,881,497	3.88		3.88		
2.1 Replanting													
- Replanting of economic species 10 %	tree	61	113	0.54	60,000	32,389							
- Replanting of indigenous species 10 %	tree	99	55	1.80	60,000	108,000							
2.2 Tending Year 2													
- 1st vegetation clearing	m ²	10,000	548	18.25	60,000	1,094,891							
- 2nd vegetation clearing	m ²	10,000	716	13.97	60,000	837,989							
- Soil scarification, mounding	hole	1,600	70	22.86	60,000	1,371,429							
2.3 Protection *	ha	-	-	7.28	60,000	436,800							
3 Year 3						39.49		2,369,679	2.37		2.37		
3.1 Tending Year 3													
- 1st vegetation clearing	m ²	10,000	548	18.25	60,000	1,094,891							
- 2nd vegetation clearing	m ²	10,000	716	13.97	60,000	837,989							
3.3 Protection *	ha	-	-	7.28	60,000	436,800							
4 Year 4						39.49		2,369,679			2.37		
4.1 Tending Year 4													
- 1st vegetation clearing	m ²	10,000	548	18.25	60,000	1,094,891							
- 2nd vegetation clearing	m ²	10,000	716	13.97	60,000	837,989							
4.3 Protection *	ha	-	-	7.28	60,000	436,800							
II Material cost						Quantity	Unit cost	Amount	Year 1	Year 2	Year 3	Year 4	Total
1 Seedlings								3,851,300	3.57	0.28			3.85
- Economic species (exotic, fast growing)	tree	671						700	469,700	0.43	0.04		0.47
- Indigenous species	tree	1,089						2,400	2,613,600	2.38	0.24		2.61
2 Fertilizer													
- Fertilizer NPK (16-16-18)	kg	80	0.05	1,600	9,600	768,000							0.77
- Fertilizer (Phân vi sinh)	kg		0.08			2,100							
- Fertilizer (Thuốc diệt mồi)	kg												
III Total of I and II								20,239,467	11.34	4.16	2.37	2.37	20.24
IV Management fee of contractor (8% of III)	%		8%					1,619,157	0.91	0.33	0.19	0.19	1.62
V Ground Total (III+IV)								21,858,624	12.25	4.49	2.56	2.56	21.86

Note: * It is assumed that 7.28 MD is consumed to protect 1 ha of plantation per year.

Table C-15. Cost Breakdown per ha of Afforestation in the Watershed (AF-02)

Density (trees/ha):	1,600	Unit cost/man-day:	60,000
Economic species: <i>Acacia spp.</i>	800	Replanting:	10%
Indigenous species (2 years old seedlings):	800		

Activity	Unit	Quantity	Norm	Cost (VND)			Annual Cost per ha (VND million)				
				Man-day	Unit cost	Amount	Year 1	Year 2	Year 3	Year 4	Total
I Labor cost				Total	412.29	16,127,040	7.52	3.87	2.37	2.37	16.13
1 Year 1				125.28		7,516,823	7.52				
1.1 Planting											
- Vegetation clearing	m ²	10,000	263	38.02	60,000	2,281,369					
- Hole digging for economic species (30*30*30 cm)	hole	800	88	9.09	60,000	545,455					
- Hole digging for indigenous species (40*40*40 cm)	hole	800	47	17.02	60,000	1,021,277					
- Hole backfilling for economic species	hole	800	174	4.60	60,000	275,862					
- Hole backfilling for indigenous species	hole	800	118	6.78	60,000	406,780					
- Transport and applicatoin of fertilizer	tree	1,600	99	16.16	60,000	969,697					
- Transport and planting of economic species	tree	800	113	7.08	60,000	424,779					
- Transport and planting of indigenous species	tree	800	55	14.55	60,000	872,727					
- Clearing grass on plot's boundary	m ²	362	77	4.70	60,000	282,078					
1.2 Protection *	ha	-	-	7.28	60,000	436,800					
2 Year 2				64.51		3,870,859		3.87			3.87
2.1 Replanting											
- Replanting of economic species 10 %	tree	80	113	0.71	60,000	42,478					
- Replanting of indigenous species 10 %	tree	80	55	1.45	60,000	87,273					
2.2 Tending Year 2											
- 1st vegetation clearing	m ²	10,000	548	18.25	60,000	1,094,891					
- 2nd vegetation clearing	m ²	10,000	716	13.97	60,000	837,989					
- Soil scarification, mounding	hole	1,600	70	22.86	60,000	1,371,429					
2.3 Protection *	ha	-	-	7.28	60,000	436,800					
3 Year 3				39.49		2,369,679			2.37		2.37
3.1 Tending Year 3											
- 1st vegetation clearing	m ²	10,000	548	18.25	60,000	1,094,891					
- 2nd vegetation clearing	m ²	10,000	716	13.97	60,000	837,989					
3.3 Protection *	ha	-	-	7.28	60,000	436,800					
4 Year 4				39.49		2,369,679				2.37	2.37
4.1 Tending Year 4											
- 1st vegetation clearing	m ²	10,000	548	18.25	60,000	1,094,891					
- 2nd vegetation clearing	m ²	10,000	716	13.97	60,000	837,989					
4.3 Protection *	ha	-	-	7.28	60,000	436,800					
II Material cost				Quantity	Unit cost	Amount	Year 1	Year 2	Year 3	Year 4	Total
						3,112,000	2.86	0.25			3.11
1 Seedlings											
- Economic species (exotic, fast growing)	tree	880			700	616,000	0.56	0.06			0.62
- Indigenous species	tree	880			2,400	2,112,000	1.92	0.19			2.11
2 Fertilizer											
- Fertilizer NPK (16-16-18)	kg	40	0.03	1,600	9,600	384,000	0.38				0.38
- Fertilizer (Phan vi sinh)	kg		0.08		2,100						
- Fertilizer (Thuốc diệt mồi)	kg										
III Total (I + II)						19,239,040	10.38	4.12	2.37	2.37	19.24
IV Management fee of contractor (8% of III)	%			8%		1,539,123	0.83	0.33	0.19	0.19	1.54
V Ground Total (III+IV)						20,778,163	11.21	4.45	2.56	2.56	20.78

Note: * It is assumed that 7.28 MD is consumed to protect 1 ha of plantation per year.

Table C-16. Cost Breakdown per ha of Afforestation in the Watershed (AF-03)

	Density (trees/ha):	1,600		Unit cost/MD:	60,000						
	Economic species: <i>Acacia spp.</i>	1,000		Replanting:	10%						
	Indigenous species (2 years old):	600 (<i>Dipterocarpus alatus, Hopea odorata</i>)									
Activity	Unit	Quantity	Norm	Cost (VND)			Annual Cost per ha (VND million)				
				Man-day	Unit cost	Amount	Year 1	Year 2	Year 3	Year 4	Total
I Labor cost			Total	15,852,169	7.25	3.86	2.37	2.37	15.85		
1 Year 1			120.89	7,253,151	7.25						
1.1 Planting											
- Vegetation clearing	m ²	10,000	263	38.02	60,000	2,281,369					
- Hole digging for economic speceis (30*30*30 cm)	hole	1,000	88	11.36	60,000	681,818					
- Hole digging for indigenous speceis (40*40*40 cm)	hole	600	47	12.77	60,000	765,957					
- Hole backfilling for economic species	hole	1,000	174	5.75	60,000	344,828					
- Hole backfilling for indigenous species	hole	600	118	5.08	60,000	305,085					
- Transport and applicatioin of fertilizer	tree	1,600	99	16.16	60,000	969,697					
- Transport and planting of economic species	tree	1,000	113	8.85	60,000	530,973					
- Transport and planting of protection species	tree	600	55	10.91	60,000	654,545					
- Clearing grass on plot's boundary	m ²	362	77	4.70	60,000	282,078					
1.2 Protection *	ha	-	-	7.28	60,000	436,800					
2 Year 2			64.33	3,859,660		3.86			3.86		
2.1 Replanting											
- Replanting of economic species 10 %	tree	100	113	0.88	60,000	53,097					
- Replanting of indigenous species 10 %	tree	60	55	1.09	60,000	65,455					
2.2 Tending Year 2											
- 1st vegetation clearing	m ²	10,000	548	18.25	60,000	1,094,891					
- 2nd vegetation clearing	m ²	10,000	716	13.97	60,000	837,989					
- Soil scarification, mounding	hole	1,600	70	22.86	60,000	1,371,429					
2.3 Protection *	ha	-	-	7.28	60,000	436,800					
3 Year 3			39.49	2,369,679		2.37			2.37		
3.1 Tending Year 3											
- 1st vegetation clearing	m ²	10,000	548	18.25	60,000	1,094,891					
- 2nd vegetation clearing	m ²	10,000	716	13.97	60,000	837,989					
3.2 Protection *	ha	-	-	7.28	60,000	436,800					
4 Year 4			39.49	2,369,679		2.37			2.37		
4.1 Tending Year 4											
- 1st vegetation clearing	m ²	10,000	548	18.25	60,000	1,094,891					
- 2nd vegetation clearing	m ²	10,000	716	13.97	60,000	837,989					
4.2 Protection *	ha	-	-	7.28	60,000	436,800					
II Material cost			Quantity	Unit cost	Amount	Year 1	Year 2	Year 3	Year 4	Total	
					3,074,000	2.86	0.21			3.07	
1 Seedlings											
- Economic species (exotic, fast growing)	tree	1,100			700	770,000	0.70	0.07		0.77	
- Indigenous species	tree	660			2,400	1,584,000	1.44	0.14		1.58	
2 Fertilizer											
- Fertilizer NPK (16-16-18)	kg	75	0.05	1,600	9,600	720,000	0.72			0.72	
- Fertilizer (Phân vi sinh)	kg		0.08		2,100						
- Fertilizer (Thuốc diệt mồi)	kg										
III Total (I + II)					18,926,169	10.11	4.07	2.37	2.37	18.93	
IV Management fee of contractor (8% of III)	%		8%		1,514,094	0.81	0.33	0.19	0.19	1.51	
V Ground Total (III+IV)					20,440,263	10.92	4.40	2.56	2.56	20.44	

Note: * It is assumed that 7.28 MD is consumed to protect 1 ha of plantation per year.

Table C-17. Cost Breakdown per ha of Improvement of Existing Plantations (IMP-01)

Density (trees/ha):	485	Unit cost/MD:	60,000	Protection:	200,000 VND/ha/year						
Indigenous species (2 years old):	485	Replanting:	10%								
Activity	Unit	Quantity	Norm	Cost (VND)	Annual Cost per ha (VND million)						
				Man-day	Unit cost	Amount	Year 1	Year 2	Year 3	Year 4	Total
I Labor cost				179.32		11,319,498	4.45	2.60	2.13	2.13	11.32
1 Year 1				71.87		4,452,236	4.45				4.45
1.1 Planting											
- Vegetation clearing	m ²	10,000	263	38.02	60,000	2,281,369					
- Hole digging for indigenous species (40*40*40 cm)	hole	485	47	10.32	60,000	619,149					
- Hole backfilling for indigenous species	hole	485	118	4.11	60,000	246,610					
Transport and applicatoin of fertilizer	tree	485	99	4.90	60,000	293,939					
- Transport and planting of protection species	tree	485	55	8.82	60,000	529,091					
Clearing grass on plot's boundary	m ²	362	77	4.70	60,000	282,078					
1.2 Protection *	ha	-	-	1.00	200,000	200,000					
2 Year 2				41.03		2,601,503		2.60			2.60
2.1 Replanting											
- Replanting of economic species 10 %			81								
- Replanting of indigenous species 10 %	tree	49	55	0.88	60,000	52,909					
2.2 Tending Year 2											
- 1st vegetation clearing	m ²	10,000	548	18.25	60,000	1,094,891					
- 2nd vegetation clearing	m ²	10,000	716	13.97	60,000	837,989					
- Soil scarification, mounding	hole	485	70	6.93	60,000	415,714					
2.3 Protection *	ha	-	-	1.00	200,000	200,000					
3 Year 3				33.21		2,132,879			2.13		2.13
3.1 Tending Year 3											
- 1st vegetation clearing	m ²	10,000	548	18.25	60,000	1,094,891					
- 2nd vegetation clearing	m ²	10,000	716	13.97	60,000	837,989					
3.2 Protection *	ha	-	-	1.00	200,000	200,000					
4 Year 4				33.21		2,132,879				2.13	2.13
4.1 Tending Year 4											
- 1st vegetation clearing	m ²	10,000	548	18.25	60,000	1,094,891					
- 2nd vegetation clearing	m ²	10,000	716	13.97	60,000	837,989					
4.2 Protection *	ha	-	-	1.00	200,000	200,000					
II Material cost				Quantity	Unit cost	Amount	Year 1	Year 2	Year 3	Year 4	Total
						1,472,400	1.36	0.12			1.47
1 Seedlings											
- Economic species (exotic, fast growing)	tree					700					
Indigenous species	tree	534				2,400	1,280,400	1.16	0.12		1.28
2 Fertilizer											
- Fertilizer NPK (16-16-18)	kg	20	0.04	485	9,600	192,000					
Fertilizer (Phân vi sinh)	kg		0.08			2,100					
- Fertilizer (Thuốc diệt mồi)	kg										
III Total (I + II)						12,791,898	5.81	2.72	2.13	2.13	12.79
IV Management fee of contractor (8% of III))	%			8%		1,023,352	0.46	0.22	0.17	0.17	1.02
V Ground Total (III+IV)						13,815,249	6.27	2.94	2.30	2.30	13.82

Note: * The cost for protection is 200,000 VND/ha/yr. Although it shows "1MD", the contracted person is supposed to work more days to conduct forest guards and patrolling when it is needed.

Table C-18. Cost Breakdown per ha of Protection of Natural Forest (FP-01)

Protection: 200,000 VND/ha/year

Activity	Unit	Quantity	Norm	Cost (VND)			Annual Cost per ha (VND million)					
				Quantity	Unit cost	Amount	Year 1	Year 2	Year 3	Year 4	Year 5	Total
I Labor cost				5.00		1,000,000	0.20	0.20	0.20	0.20	0.20	1.00
1 Year 1				1.00		200,000	0.20					0.20
1.2 Protection *	ha	-	-	1.00	200,000	200,000						
2 Year 2				1.00		200,000		0.20				0.20
2.1 Protection *	ha	-	-	1.00	200,000	200,000						
3 Year 3				1.00		200,000			0.20			0.20
3.1 Protection *	ha	-	-	1.00	200,000	200,000						
4 Year 4				1.00		200,000				0.20		0.20
4.1 Protection *	ha	-	-	1.00	200,000	200,000						
5 Year 5				1.00		200,000					0.20	0.20
5.1 Protection *	ha	-	-	1.00	200,000	200,000						
II Material cost				Quantity	Unit cost	Amount	Year 1	Year 2	Year 3	Year 4	Year 5	Total
1 Seedlings												
- Indigenous species	tree											
2 Fertilizer												
- Fertilizer NPK (16-16-18)	kg											
- Fertilizer (Phân vi sinh)	kg											
- Fertilizer (Thuốc diệt mồi)	kg											
III Total (I + II)						1,000,000	0.20	0.20	0.20	0.20	0.20	1.00
IV Management fee of contractor (8% of III))	%		8%			80,000	0.02	0.02	0.02	0.02	0.02	0.08
V Ground Total (III+IV)						1,080,000	0.22	0.22	0.22	0.22	0.22	1.08

Note: * The cost for protection is 200,000 VND/ha/yr. Although it shows "1MD", the contracted person is supposed to work more days to conduct forest guards and patrolling when it is needed.

Table C-19. Cost Breakdown per ha of Assisted Natural Generation and Enrichment Planting in the Watershed (ANR-01)

Density (trees/ha): 378 Unit cost/MD: 60,000 Protection: 200,000 VND/ha/year
 Casuarina equisetifolia 378 Replanting: 10%

Activity				Unit	Quantity	Norm	Cost (VND)			Annual Cost per ha (VND million)					
I	Labor cost						81.20		5,571,967	2.51	1.47	1.20	0.20	0.20	5.57
1 Year 1							39.52		2,511,354	2.51					2.51
1.1 Assistance for the natural regeneration															
- Clearing climbers and insects affected trees	ha	1	0.08				12.30	60,000	738,000						
- Stops weeding for the regenerating trees (300 trees/ha)	tree	300	70				4.29	60,000	257,143						
1.2 Enrichment planting															
- Hole digging for indigenous species (40*40*40 cm)	hole	378	47				8.04	60,000	482,553						
- Hole backfilling for indigenous species	hole	378	118				3.20	60,000	192,203						
- Application of fertilizer	tree	378	99				3.82	60,000	229,091						
Transport and planting of protection species	tree	378	55				6.87	60,000	412,564						
1.3 Protection *	ha	-	-				1.00	200,000	200,000						
2 Year 2							22.09		1,465,470			1.47			1.47
2.1 Assistance for the natural regeneration															
- Clearing climbers and insects affected trees	ha	1	0.08				12.30	60,000	738,000						
- Stops weeding for the regenerating trees (300 trees/ha)	tree	300	70				4.29	60,000	257,143						
2.2 Replanting															
- Application of fertilizer	tree	378	99				3.82	60,000	229,091						
- Transport and planting of protection species	tree	38	55				0.69	60,000	41,236						
2.3 Protection *	ha	-	-				1.00	200,000	200,000						
3 Year 3							17.59		1,195,143				1.20		1.20
3.1 Assistance for the natural regeneration															
- Clearing climbers and insects affected trees	ha	1	0.08				12.30	60,000	738,000						
- Stops weeding for the regenerating trees (300 trees/ha)	tree	300	70				4.29	60,000	257,143						
3.2 Protection *	ha	-	-				1.00	200,000	200,000						
4 Year 4							1.00		200,000				0.20		0.20
4.1 Protection *	ha	-	-				1.00	200,000	200,000						
5 Year 5							1.00		200,000				0.20		0.20
5.1 Protection *	ha	-	-				1.00	200,000	200,000						
II Material cost							Quantity	Unit cost	Amount	Year 1	Year 2	Year 3	Year 4	Year 5	Total
1 Seedlings									1,118,400	1.04	0.08				1.12
- Indigenous species	tree	378						2,400	907,200	0.82	0.08				0.91
2 Fertilizer															
- Fertilizer NPK (16-16-18)	kg	22	0.06				378	9,600	211,200	0.21					0.21
- Fertilizer (Phân vi sinh)	kg		0.08					2,100							
- Fertilizer (Thuốc diệt mồi)	kg														
III Total (I + II)									6,690,367	3.55	1.55	1.20	0.20	0.20	6.49
IV Management fee of contractor (8% of III)	%								535,229	0.28	0.12	0.10	0.02	0.02	0.52
V Ground Total (III+IV)									7,225,596	3.83	1.67	1.29	0.22	0.22	7.01

Note: * The cost for protection is 200,000 VND/ha/yr. Although it shows "1MD", the contracted person is supposed to work more days to conduct forest guards and patrolling when it is needed.

Table C-20. Cost Breakdown per ha of Assisted Natural Generation in the Watershed (ANR-02)

				Density (trees/ha):	Unit cost/MD:	60,000	Protection:	200,000	VND/ha/year			
				Casuarina equisetifolia	Replanting:	10%						
I	Activity	Unit	Quantity	Norm	Cost (VND)			Annual Cost per ha (VND million)				
					Man-day	Unit cost	Amount	Year 1	Year 2	Year 3	Year 4	Year 5
1 Year 1					54.76		3,985,429	1.20	1.20	1.20	0.20	0.20
1.1 Assistance for the natural regeneration					17.59		1,195,143	1.20				
- Clearing climbers and insects affected trees	ha	1	0.08		12.30	60,000	738,000					
- Stops weeding for the regenerating trees (300 trees/ha)	tree	300	70		4.29	60,000	257,143					
1.3 Protection *	ha	-	-	-	1.00	200,000	200,000					
2 Year 2					17.59		1,195,143		1.20			
2.1 Assistance for the natural regeneration												
- Clearing climbers and insects affected trees	ha	1	0.08		12.30	60,000	738,000					
- Stops weeding for the regenerating trees (300 trees/ha)	tree	300	70		4.29	60,000	257,143					
2.3 Protection *	ha	-	-	-	1.00	200,000	200,000					
3 Year 3					17.59		1,195,143			1.20		
3.1 Assistance for the natural regeneration												
- Clearing climbers and insects affected trees	ha	1	0.08		12.30	60,000	738,000					
- Stops weeding for the regenerating trees (300 trees/ha)	tree	300	70		4.29	60,000	257,143					
3.2 Protection *	ha	-	-	-	1.00	200,000	200,000					
4 Year 4					1.00		200,000				0.20	
4.1 Protection *	ha	-	-	-	1.00	200,000	200,000					
5 Year 5					1.00		200,000				0.20	0.20
5.1 Protection *	ha	-	-	-	1.00	200,000	200,000					
II Material cost					Quantity	Unit cost	Amount	Year 1	Year 2	Year 3	Year 4	Year 5
1 Seedlings												
- Indigenous species	tree						2,400					
2 Fertilizer												
- Fertilizer NPK (16-16-18)	kg						9,600					
- Fertilizer (Phân vi sinh)	kg						2,100					
- Fertilizer (Thuốc diệt mồi)	kg											
III Total (I + II)							3,985,429	1.20	1.20	1.20	0.20	0.20
IV Management fee of contractor (8% of III)	%				8%		318,834	0.10	0.10	0.10	0.02	0.02
V Ground Total (III+IV)							4,304,263	1.29	1.29	1.29	0.22	0.22
												4.30

Note: * The cost for protection is 200,000 VND/ha/yr. Although it shows "1MD", the contracted person is supposed to work more days to conduct forest guards and patrolling when it is needed.

Table C-22 Cost Breakdown per ha of Enrichment Planting in the SPL-3 Plantations (ANR-03)

Density (trees/ha): 378 Unit cost/MD: 60,000 Protection: 200,000 VND/ha/year
 Indigenous species (2 years old): 378 Replanting: 10%

Activity	Unit	Quantity	Norm	Cost (VND)			Annual Cost per ha (VND million)				
				Man-day	Unit cost	Amount	Year 1	Year 2	Year 3	Year 4	Total
I Labor cost				18.58		1,674,693	1.07	0.20	0.20	0.20	1.67
1 Year 1				15.58		1,074,693	1.07				1.07
1.1 Enrichment planting											
- Hole digging for indigenous species (40*40*40 cm)	hole	378	47	8.04	60,000	482,128					
- Hole backfilling for indigenous species	hole	378	118	3.20	60,000	192,034					
Transport and planting of protection species	tree	378	113	3.34	60,000	200,531					
1.2 Protection *	ha	-	-	1.00	200,000	200,000					
2 Year 2				1.00		200,000		0.20			0.20
2.1 Protection *	ha	-	-	1.00	200,000	200,000					
3 Year 3				1.00		200,000			0.20		0.20
3.1 Protection *	ha	-	-	1.00	200,000	200,000					
4 Year 4				1.00		200,000				0.20	0.20
4.1 Protection *	ha	-	-	1.00	200,000	200,000					
II Material cost				Quantity	Unit cost	Amount	Year 1	Year 2	Year 3	Year 4	Total
1 Seedlings											
- Indigenous species	tree	378			2,400	907,200	0.82	0.08			0.91
2 Fertilizer											
- Fertilizer NPK (16-16-18)	kg	20	0.05	378	9,600	192,000	0.19				0.19
- Fertilizer (Phân vi sinh)	kg		0.08		2,100						
- Fertilizer (Thuốc diệt mồi)	kg										
III Total (I + II)						2,773,893	2.09	0.28	0.20	0.20	2.77
IV Management fee of contractor (8% of III))	%			8%		221,911	0.17	0.02	0.02	0.02	0.22
V Ground Total (III+IV)						2,995,804	2.26	0.31	0.22	0.22	3.00

Note: * The cost for protection is 200,000 VND/ha/yr. Although it shows "1MD", the contracted person is supposed to work more days to conduct forest guards and patrolling when it is needed.

Table C-21. Cost Breakdown per ha of Protection of the SPL-3 Plantations (FP-02)

Protection: 200,000 VND/ha/year

Activity	Unit	Quantity	Norm	Cost (VND)			Annual Cost per ha (VND million)			
				Quantity	Unit cost	Amount	Year 1	Year 2	Year 3	Total
I Labor cost				3.00		600,000	0.20	0.20	0.20	0.60
1 Year 1				1.00		200,000	0.20			0.20
1.2 Protection *	ha	-	-	1.00	200,000	200,000				
2 Year 2				1.00		200,000	0.20			0.20
2.1 Protection *	ha	-	-	1.00	200,000	200,000				
3 Year 3				1.00		200,000	0.20		0.20	0.20
3.1 Protection *	ha	-	-	1.00	200,000	200,000				
II Material cost				Quantity	Unit cost	Amount	Year 1	Year 2	Year 3	Total
1 Seedlings										
- Indigenous species	tree									
2 Fertilizer										
- Fertilizer NPK (16-16-18)	kg									
- Fertilizer (Phan vi sinh)	kg									
- Fertilizer (Thuốc diệt mồi)	kg									
III Total (I + II)						600,000	0.20	0.20	0.20	0.60
IV Management fee of contractor (8% of III))	%		8%			48,000	0.02	0.02	0.02	0.05
V Ground Total (III+IV)						648,000	0.22	0.22	0.22	0.65

Note: * The cost for protection is 200,000 VND/ha/yr. Although it shows "1MD", the contracted person is supposed to work more days to conduct forest guards and patrolling when it is needed.

Table C-23. Cost Breakdown per ha of Vegetation Clearing and Thinning of SPL3 Plantations (IMP-02)

Unit cost/MD: 60,000 Protection: 200,000 VND/ha/year

Activity	Unit	Quantity	Norm	Cost (VND)			Annual Cost per ha (VND million)				
				Man-day	Unit cost	Amount	Year 1	Year 2	Year 3	Year 4	Total
I Labor cost				39.40		2,924,080	2.32	0.20	0.20	0.20	2.92
1 Year 1				36.40		2,324,080	2.32				2.32
1.1 Thinning											
- Vegetation clearing	m2	10,000	599	16.70	60,000	1,002,171					
- Thinning of Acacia trees	tree	862	46	18.70	60,000	1,121,909					
1.2 Protection *	ha	-	-	1.00	200,000	200,000					
2 Year 2				1.00		200,000		0.20			0.20
2.1 Protection *	ha	-	-	1.00	200,000	200,000					
3 Year 3				1.00		200,000			0.20		0.20
3.1 Protection *	ha	-	-	1.00	200,000	200,000					
4 Year 4				1.00		200,000				0.20	0.20
4.1 Protection *	ha	-	-	1.00	200,000	200,000					
II Material cost				Quantity	Unit cost	Amount	Year 1	Year 2	Year 3	Year 4	Total
						70,000	0.06	0.01			0.07
1 Materials for thinning											
- Bamboo bar, rope & knife	set	1			70,000	70,000	0.06	0.01			0.07
- Indigenous species	tree										
2 Fertilizer											
- Fertilizer NPK (16-16-18)	kg										
- Fertilizer (Phân vi sinh)	kg										
- Fertilizer (Thuốc diệt mồi)	kg										
III Total (I + II)						2,994,080	2.39	0.21	0.20	0.20	2.99
IV Management fee of contractor (8% of III)	%		8%			239,526	0.19	0.02	0.02	0.02	0.24
V Ground Total (III+IV)						3,233,607	2.58	0.22	0.22	0.22	3.23

Note: * The cost for protection is 200,000 VND/ha/yr. Although it shows "1MD", the contracted person is supposed to work more days to conduct forest guards and patrolling when it is needed.

Table C-24. Cost Breakdown per ha of Afforestation in the Coastal Area (AF-04)

Density (trees/ha): 2,500 Unit cost/MD: 60,000
Casuarina equisetifolia 2,500 Replanting: 10%

Activity	Unit	Quantity	Norm	Cost (VND)			Annual Cost per ha (VND million)				
				Man-day	Unit cost	Amount	Year 1	Year 2	Year 3	Year 4	Total
I Labor cost				217.73		13,063,678	7.64	2.66	1.38	1.38	13.06
1 Year 1				127.35		7,640,909	7.64				7.64
1.1 Planting											
- Vegetation clearing	m ²	10,000	529	18.90	60,000	1,134,216					
- Hole digging for indigenous species (40*40*40 cm)	hole	2,500	72	34.72	60,000	2,083,333					
- Hole backfilling for Casuarina	hole	2,500	191	13.09	60,000	785,340					
- Transport and application of fertilizer	tree	2,500	147	17.01	60,000	1,020,408					
- Transport and planting of Casuarina	tree	2,500	79	31.65	60,000	1,898,734					
- Clearing grass on plot's boundary	m ²	362	77	4.70	60,000	282,078					
1.2 Protection *	ha	-	-	7.28	60,000	436,800					
2 Year 2				44.31		2,658,810		2.66			2.66
2.1 Replanting											
- Replanting of Casuarina 10 %	tree	250	79	3.16	60,000	189,873					
2.2 Tending Year 2											
- 1st vegetation clearing	m ²	10,000	1,058	9.45	60,000	567,108					
- 2nd vegetation clearing	m ²	10,000	1,587	6.30	60,000	378,072					
- Soil scarification, mounding	hole	2,500	138	18.12	60,000	1,086,957					
2.3 Protection *	ha	-	-	7.28	60,000	436,800					
3 Year 3				23.03		1,381,980		1.38			1.38
3.1 Tending Year 3											
- 1st vegetation clearing	m ²	10,000	1,058	9.45	60,000	567,108					
- 2nd vegetation clearing	m ²	10,000	1,587	6.30	60,000	378,072					
3.2 Protection *	ha	-	-	7.28	60,000	436,800					
4 Year 4				23.03		1,381,980		1.38			1.38
4.1 Tending Year 4											
- 1st vegetation clearing	m ²	10,000	1,058	9.45	60,000	567,108					
- 2nd vegetation clearing	m ²	10,000	1,587	6.30	60,000	378,072					
4.2 Protection *	ha	-	-	7.28	60,000	436,800					
II Material cost				Quantity	Unit cost	Amount	Year 1	Year 2	Year 3	Year 4	Total
						3,876,000	3.58	0.30			3.88
1 Seedlings											
- Casuarina	tree	2,750				1,200	3,300,000	3.00	0.30		3.30
2 Fertilizer											
- Fertilizer NPK (16-16-18)	kg	60	0.02	2,500	9,600	576,000	0.58				0.58
- Fertilizer (Phân vi sinh)	kg		0.08			2,100					
- Fertilizer (Thuốc diệt mồi)	kg										
III Total (I + II)						16,939,678	11.22	2.96	1.38	1.38	16.94
IV Management fee of contractor (8% of III))	%			8%		1,355,174	0.90	0.24	0.11	0.11	1.36
V Ground Total (III+IV)						18,294,852	12.11	3.20	1.49	1.49	18.29

Note: * It is assumed that 7.28 MD is consumed to protect 1 ha of plantation per year.

Table C-25. Cost Breakdown per ha of Afforestation in the Coastal Area (AF-05)

Density (trees/ha):	5,000	Unit cost/MD:	60,000
<i>Casuarina equisetifolia</i>	5,000	Replanting:	10%

Activity	Unit	Quantity	Norm	Cost (VND)			Annual Cost per ha (VND million)				
				Man-day	Unit cost	Amount	Year 1	Year 2	Year 3	Year 4	Total
I Labor cost				335.47		20,128,324	13.43	3.94	1.38	1.38	20.13
1 Year 1				223.81		13,428,725	13.43				13.43
1.1 Planting											
- Vegetation clearing	m ²	10,000	529	18.90	60,000	1,134,216					
- Hole digging for indigenous speceis (40*40*40 cm)	hole	5,000	72	69.44	60,000	4,166,667					
- Hole backfilling for Casuarina	hole	5,000	191	26.18	60,000	1,570,681					
- Transport and applicatoin of fertilizer	tree	5,000	147	34.01	60,000	2,040,816					
- Transport and planting of Casuarina	tree	5,000	79	63.29	60,000	3,797,468					
- Clearing grass on plot's boundary	m ²	362	77	4.70	60,000	282,078					
1.2 Protection *	ha	-	-	7.28	60,000	436,800					
2 Year 2				65.59		3,935,639		3.94			3.94
2.1 Replanting											
- Replanting of Casuarina 10 %	tree	500	79	6.33	60,000	379,747					
2.2 Tending Year 2											
- 1st vegetation clearing	m ²	10,000	1,058	9.45	60,000	567,108					
- 2nd vegetation clearing	m ²	10,000	1,587	6.30	60,000	378,072					
- Soil scarification, mounding	hole	5,000	138	36.23	60,000	2,173,913					
2.3 Protection *	ha	-	-	7.28	60,000	436,800					
3 Year 3				23.03		1,381,980			1.38		1.38
3.1 Tending Year 3											
- 1st vegetation clearing	m ²	10,000	1,058	9.45	60,000	567,108					
- 2nd vegetation clearing	m ²	10,000	1,587	6.30	60,000	378,072					
3.2 Protection *	ha	-	-	7.28	60,000	436,800					
4 Year 4				23.03		1,381,980				1.38	1.38
4.1 Tending Year 4											
- 1st vegetation clearing	m ²	10,000	1,058	9.45	60,000	567,108					
- 2nd vegetation clearing	m ²	10,000	1,587	6.30	60,000	378,072					
4.2 Protection *	ha	-	-	7.28	60,000	436,800					
II Material cost				Quantity	Unit cost	Amount	Year 1	Year 2	Year 3	Year 4	Total
						7,176,000	6.58	0.60			7.18
1 Seedlings											
- Casuarina	tree	5,500			1,200	6,600,000	6.00	0.60			6.60
2 Fertilizer											
- Fertilizer NPK (16-16-18)	kg	60	0.01	5,000	9,600	576,000	0.58				0.58
- Fertilizer (Phan vi sinh)	kg		0.08		2,100						
- Fertilizer (Thuốc diệt mồi)	kg										
III Total (I + II)						27,304,324	20.00	4.54	1.38	1.38	27.30
IV Management fee of contractor (8% of III))	%		8%			2,184,346	1.60	0.36	0.11	0.11	2.18
V Ground Total (III+IV)						29,488,670	21.61	4.90	1.49	1.49	29.49

Note: * It is assumed that 7.28 MD is consumed to protect 1 ha of plantation per year.

Table C-26. Cost Breakdown per ha of Improvement of Existing Plantations in the Coastal Area (IMP-03)

Density (trees/ha): 600 Unit cost/MD: 60,000 Protection: 200,000 VND/ha/year
 Indigenous species (2 years old): 600 Replanting: 10%

Activity	Unit	Quantity	Norm	Cost (VND)			Annual Cost per ha (VND million)				
				Man-day	Unit cost	Amount	Year 1	Year 2	Year 3	Year 4	Total
I Labor cost				169.29		10,717,101	3.01	2.77	2.47	2.47	10.72
1 Year 1				47.76		3,005,369					
1.1 Planting											
- Vegetation clearing	m ²	10,000	529	18.90	60,000	1,134,216					
- Hole digging for indigenous species (40*40*40 cm)	hole	600	72	8.33	60,000	500,000					
- Hole backfilling for indigenous species	hole	600	191	3.14	60,000	188,482					
- Transport and application of fertilizer	tree	600	147	4.08	60,000	244,898					
- Transport and planting of protection species	tree	600	79	7.59	60,000	455,696					
- Clearing grass on plot's boundary	m ²	362	77	4.70	60,000	282,078					
1.2 Protection *	ha	-	-	1.00	200,000	200,000					
2 Year 2				43.91		2,774,870		2.77			2.77
2.1 Replanting											
- Replanting of economic species 10 %			81								
- Replanting of indigenous species 10 %	tree	60	79	0.76	60,000	45,570					
2.2 Tending Year 2											
- 1st vegetation clearing	m ²	10,000	529	18.90	60,000	1,134,216					
- 2nd vegetation clearing	m ²	10,000	529	18.90	60,000	1,134,216					
- Soil scarification, mounding	hole	600	138	4.35	60,000	260,870					
2.3 Protection *	ha	-	-	1.00	200,000	200,000					
3 Year 3				38.81		2,468,431			2.47		2.47
3.1 Tending Year 3											
- 1st vegetation clearing	m ²	10,000	529	18.90	60,000	1,134,216					
- 2nd vegetation clearing	m ²	10,000	529	18.90	60,000	1,134,216					
3.2 Protection *	ha	-	-	1.00	200,000	200,000					
4 Year 4				38.81		2,468,431			2.47		2.47
4.1 Tending Year 4											
- 1st vegetation clearing	m ²	10,000	529	18.90	60,000	1,134,216					
- 2nd vegetation clearing	m ²	10,000	529	18.90	60,000	1,134,216					
4.2 Protection *	ha	-	-	1.00	200,000	200,000					
II Material cost				Quantity	Unit cost	Amount	Year 1	Year 2	Year 3	Year 4	Total
						1,776,000	1.63	0.14			1.78
1 Seedlings											
- Economic species (exotic, fast growing)	tree				700						
- Indigenous species	tree	660			2,400	1,584,000	1.44	0.14			1.58
2 Fertilizer											
- Fertilizer NPK (16-16-18)	kg	20	0.03	600	9,600	192,000	0.19				0.19
- Fertilizer (Phân vi sinh)	kg			0.08		2,100					
- Fertilizer (Thuốc diệt mồi)	kg										
III Total (I + II)						12,493,101	4.64	2.92	2.47	2.47	12.49
IV Management fee of contractor (8% of III))	%			8%		999,448	0.37	0.23	0.20	0.20	1.00
V Ground Total (III+IV)						13,492,550	5.01	3.15	2.67	2.67	13.49

Note: * The cost for protection is 200,000 VND/ha/yr. Although it shows "1MD", the contracted person is supposed to work more days to conduct forest guards and patrolling when it is needed.

Table C-27. Cost Breakdown per ha of Enrichment Planting in the Coastal Area (ANR-04)

Density (trees/ha): 500 Unit cost/MD: 60,000 Protection: 200,000 VND/ha/year
Casuarina equisetifolia 500 Replanting: 10%

Activity	Unit	Quantity	Norm	Cost (VND)			Annual Cost per ha (VND million)					
				Man-day	Unit cost	Amount	Year 1	Year 2	Year 3	Year 4	Year 5	Total
I Labor cost				53.20		3,891,804	1.85	0.94	0.70	0.20	0.20	3.89
1 Year 1				28.58		1,854,958	1.85					1.85
1.1 Assistance for the natural regeneration												
- Clearing climbers and insects affected trees	ha	1	0.16	6.12	60,000	366,960						
- Stops weeding for the regenerating trees (300 trees/ha)	tree	300	138	2.17	60,000	130,435						
1.2 Enrichment planting												
- Hole digging for indigenous species (40*40*40 cm)	hole	500	72	6.94	60,000	416,667						
- Hole backfilling for indigenous species	hole	500	191	2.62	60,000	157,068						
- Applicatoin of fertilizer	tree	500	147	3.40	60,000	204,082						
Transport and planting of protection species	tree	500	79.0	6.33	60,000	379,747						
1.3 Protection *	ha	-	-	1.00	200,000	200,000						
2 Year 2				13.32		939,451		0.94				0.94
2.1 Assistance for the natural regeneration												
- Clearing climbers and imsects affected trees	ha	1	0.16	6.12	60,000	366,960						
- Stops weeding for the regenerating trees (300 trees/ha)	tree	300	138	2.17	60,000	130,435						
2.2 Replanting												
- Applicatoin of fertilizer	tree	500	147	3.40	60,000	204,082						
- Transport and planting of protection species	tree	50	79.0	0.63	60,000	37,975						
2.3 Protection *	ha	-	-	1.00	200,000	200,000						
3 Year 3				9.29		697,395			0.70			0.70
3.1 Assistance for the natural regeneration												
- Clearing climbers and insects affected trees	ha	1	0.16	6.12	60,000	366,960						
- Stops weeding for the regenerating trees (300 trees/ha)	tree	300	138	2.17	60,000	130,435						
3.2 Protection *	ha	-	-	1.00	200,000	200,000						
4 Year 4				1.00		200,000				0.20		0.20
4.1 Protection *	ha	-	-	1.00	200,000	200,000						
5 Year 5				1.00		200,000				0.20		0.20
5.1 Protection *	ha	-	-	1.00	200,000	200,000						
II Material cost				Quantity	Unit cost	Amount	Year 1	Year 2	Year 3	Year 4	Year 5	Total
						1,392,000	1.28	0.11				1.39
1 Seedlings												
- Indigenous species	tree	500			2,400	1,200,000						
2 Fertilizer												
- Fertilizer NPK (16-16-18)	kg	20	0.04	500	9,600	192,000						
- Fertilizer (Phân vi sinh)	kg		0.08		2,100							
- Fertilizer (Thuốc diệt mồi)	kg											
III Total (I + II)						5,283,804	3.14	1.05	0.70	0.20	0.20	5.28
IV Management fee of contractor (8% of III)	%			8%		422,704	0.25	0.08	0.06	0.02	0.02	0.42
V Ground Total (III+IV)						5,706,508	3.39	1.13	0.75	0.22	0.22	5.71

Note: * The cost for protectoin is 200,000 VND/ha/yr. Although it shows "1MD", the contracted person is supposed to work more days to conduct forest gurads and patrolling when it is needed.

Annex D

**Final Report
for
the Preparatory Survey
on the Project for Restoration and Sustainable Management of Protection
Forests in the Socialist Republic of Vietnam**

Annex D: Cost Estimation of Silviculture Infrastructure Construction

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Annex D: Cost Estimation of Silviculture Infrastructure Construction

1. Direct Cost of Construction

The direct cost for silviculture infrastructure construction and improvement are estimated by the construction unit price following the construction cost norm specified in “Degree No.99/2007ND-CP” under “Law of Construction”. According to the “Degree No.99/2007ND-CP”, the construction cost norm should be established and promulgated by the PPC or branch of the Ministry of Construction considering the particular and location of the works based on the Economic-Technical Norm and Construction Price Index issued by the Ministry of Construction. The Unit Construction Cost is composed of price of construction material, construction machinery and construction labor and the “Degree No.99/2007ND-CP” guides the way of determination of the each price. According to the “Degree No.99/2007ND-CP”, the material cost should be determined on the basis of the market price notified by the suppliers and transportation cost of the material to the work site should be added to the price. The construction labor price is guided to be determined according to the popular labor market price in each region or Province. The machine and equipment price are determined by the guidance of the Ministry of Construction with monthly and quarterly hiring charges.

Although the way of establishment of construction unit price is varied in each province for each type of work, the unit construction price for short listed rural infrastructure construction and improvement for each province is calculated in a simple manner on the following premises.

(a) Construction Labor Unit Price

The minimum wage level of all of target Districts and Communes are in the Range-IV level according to promulgation issued by the State Agency. It is therefore that same unit labor price is applied to all the Provinces for unit construction price calculation. Since most of the Provinces estimate the additional charge if working site is far away from the main road, additional 4% of the unit labor price for the coastal protection area and additional 20% of the unit labor price to the watershed area are added to the unit labor price.

(b) Construction Machine and Equipment Unit Price

Although the hiring charge of the construction machine and equipment are varied in each Province, the variation of the machine and equipment cost would not give a big impact for the unit construction cost. It is therefore that the uniformed machinery cost is applied to all the Provinces. The additional transportation cost is estimated 1.2% only for the watershed area uniformly to all the Provinces.

(c) Construction Material Unit Price

It is observed the difference of the construction material cost in the Region-wise namely North Central Coast, South Central Coast and South East, the average of the major material cost such as cement, sand, coarse aggregate and reinforcement is employed for each region for the calculation of unit construction cost. The additional transportation cost for the major materials were also calculated at VND 182,000 per m³ for watershed area and VND 70,000 per m³ for the coastal protection area.

2. Administrative Charges and Miscellaneous

In addition to the direct cost estimated based on the construction unit price, 1.5% of total direct cost is included as a miscellaneous to the estimation. Also the following administrative charges of the

Contractor and their profit are estimated and included in the cost. Any price and physical contingencies are not included in the cost estimation.

Administration Charge : 6.0 % of Direct Cost for all kind of silviculture infrastructure except forestry road of 5.3 %

Profit : 5.5% for all kind of silviculture infrastructure except forestry road of 6.0%

3. Unit Cost of Construction

The work quantities of each subcomponents are tentatively estimated considering the similar type of work carried out in SLP-III or other Government projects in the target provinces and based on the typical design.

Based on the above assumption, the unit cost for construction and improvement of forestry road, fire break line, fire watch tower, forest guard station, information board and nursery are estimated and the summarized below.

Summary of Estimated Unit Cost for Silviculture Infrastructure

Region	Province	Location	Estimated Cost (Million VND)					
			Forestry Road (per km)	Fire Break Line (per km)	Fire Watch Tower (per no.)	Forest Guard Station (per no.)	Information Board (per no.)	Nursery (per no.)
North Central Coast	Thanh Hoa, Nghe An, Ha Tinh, Quang Binh, Quang Tri, Hue	Watershed	220.3	24.5	121.2	208.4	16.2	125.4
		Coastal	197.1	21.4	108.8	190.2	14.7	107.8
South Central Coast	Quang Nam, Quang Ngai, Binh Dinh, Phu Yen	Watershed	230.4	24.5	121.5	210.2	16.2	130.6
		Coastal	207.0	21.4	109.1	192.0	14.8	112.9
South East	Ninh Thuan, Binh Thuan	Watershed	220.6	24.5	115.4	207.8	16.1	127.8
		Coastal	197.3	21.4	103.0	189.6	14.6	110.2

Tables D-1~D-6 show the estimated unit cost of silviculture infrastructure. **Figures D-1~D-9** provide typical design of the infrastructure.

Tables & Figures

Table D-1 Typical Cost Estimation for Construction of Silviculture Infrastructure

Type of Infrastructure
 Specification Road
 Causeway

Forestry Road

5m width
 Without pavement
 3m width with Gabion
 2 nos. per km

No.	Code	Description	Unit	Work Quantity	NCC	SCC	SE	NCC	SCC	SE
Formation of Road					Unit Cost (VND)	Unit Cost (VND)	Unit Cost (VND)	Total (VND)	Total (VND)	Total (VND)
1	AB.31123	Earth Excavation by machine 3rd Class Soil	100m3	50.000	1,298,604	1,298,604	1,298,604	64,930,200	64,930,200	64,930,200
2	AB.64123	Earth Filling by 9 T Road Roller 3rd Class Soil	100m3	30.000	662,179	662,179	662,179	19,865,370	19,865,370	19,865,370
3	AB.11833	Excavating vertical ditch, 3rd class soil by manual	m3	200.000	85,193	85,193	85,193	17,038,600	17,038,600	17,038,600
4	AB.24113	Excavating vertical ditch, 3rd class soil by excavator	100m3	1.923	699,369	699,369	699,369	1,344,887	1,344,887	1,344,887
Sub Total								103,179,057	103,179,057	103,179,057
II Causeway										
5	AB.11313	Excavating basement (3rd class soil)	m3	3.570	90,291	90,291	90,291	322,339	322,339	322,339
6	AB.11313	Refilling soil in basement hole, 3rd soil, K=0.95	m3	1.190	90,291	90,291	90,291	107,446	107,446	107,446
7	VL.15112	Fabrication and Gabion, steel wire size of 2x1x1m	no.	22.000	1,126,206	1,232,905	1,198,443	24,776,527	27,123,910	26,365,746
8	AL.15311	Piling the stone alone, plane surface	m3	44.000	172,583	226,583	143,208	7,593,652	9,969,652	6,301,152
Sub Total								32,799,964	37,523,347	33,096,683
Location Watershed					Total of Estimated Cost before Adjustment			168,778,984	178,225,751	169,372,423
					Adjustment for Labor	20.0%		16,956,071	16,956,071	16,956,071
					Adjustment for Material		8,008,000.0	8,008,000	8,008,000	8,008,000
					Adjustment for Machine	1.2%		2,025,348	2,138,709	2,032,469
					Total			195,768,403	205,328,531	196,368,963
					Miscellaneous	1.5%		2,936,526	3,079,928	2,945,534
					Total Direct Cost			198,704,929	208,408,459	199,314,498
					Administration Charge	5.3%		10,531,361	11,045,648	10,563,668
					Profit Charge	6.0%		12,554,177	13,167,246	12,592,690
					Total before Tax			221,790,468	232,621,354	222,470,856
					(VAT included in Material)			(1,448,216)	(2,262,172)	(1,919,134)
					Total w/o VAT			220,342,252	230,359,182	220,551,722
Location Coastal					Total of Estimated Cost before Adjustment			168,778,984	178,225,751	169,372,423
					Adjustment for Labor	4.0%		3,391,214	3,391,214	3,391,214
					Adjustment for Material		3,080,000.0	3,080,000	3,080,000	3,080,000
					Adjustment for Machine					
					Total			175,250,198	184,696,965	175,843,637
					Miscellaneous	1.5%		2,628,753	2,770,454	2,637,655
					Total Direct Cost			177,878,951	187,467,420	178,481,292
					Administration Charge	5.3%		9,427,584	9,935,773	9,459,508
					Profit Charge	6.0%		11,238,392	11,844,192	11,276,448
					Total before Tax			198,544,928	209,247,384	199,217,248
					(VAT included in Material)			(1,431,043)	(2,235,348)	(1,896,378)
					Total w/o VAT			197,113,885	207,012,036	197,320,870

Table D-2 Typical Cost Estimation for Construction of Silviculture Infrastructure

Type of Infrastructure
Specification

Fire Break Line

10m width for 1000 m

No.	Code	Description	Unit	Work Quantity	NCC	SCC	SE	NCC	SCC	SE
I Formation of Fire Break Line					Unit Cost (VND)	Unit Cost (VND)	Unit Cost (VND)	Total (VND)	Total (VND)	Total (VND)
1	AA11215	Clearing of forest by machine	100m2	40.000	96,171	96,171	96,171	3,846,840	3,846,840	3,846,840
2	AA.11125	Clearing of forest by manual	100m2	60.000	238,834	238,834	238,834	14,330,040	14,330,040	14,330,040
Sub Total								18,176,880	18,176,880	18,176,880
Location Watershed		Total of Estimated Cost before Adjustment						18,176,880	18,176,880	18,176,880
		Adjustment for Labor						20.0%	3,177,656	3,177,656
		Adjustment for Material								
		Adjustment for Machine						1.2%	218,123	218,123
		Total							21,572,659	21,572,659
		Miscellaneous						1.5%	323,590	323,590
		Total Direct Cost							21,896,248	21,896,248
		Administration Charge						6.0%	1,313,775	1,313,775
		Profit Charge						5.5%	1,276,551	1,276,551
		Total before Tax							24,486,575	24,486,575
		Total							24,486,575	24,486,575
Location Coastal		Total of Estimated Cost before Adjustment						18,176,880	18,176,880	18,176,880
		Adjustment for Labor						4.0%	635,531	635,531
		Adjustment for Material								
		Adjustment for Machine								
		Total							18,812,411	18,812,411
		Miscellaneous						1.5%	282,186	282,186
		Total Direct Cost							19,094,597	19,094,597
		Administration Charge						6.0%	1,145,676	1,145,676
		Profit Charge						5.5%	1,113,215	1,113,215
		Total before Tax							21,353,488	21,353,488
		Total							21,353,488	21,353,488

Table D-3 Typical Cost Estimation for Construction of Silviculture Infrastructure

Type of Infrastructure
 Specification Height 10 m height
 Pillar Steel Rod
 Watch House 4.0m² (2.0m x 2.0m)

Fire Watch Tower

No.	Code	Description	Unit	Work Quantity	NCC	SCC	SE	NCC	SCC	SE
I		Basement of the watch tower								
1	AB.11323	Excavation of basement with width <1m, depth<1m, Class-III Soil	m ³	7.328	95,388	95,388	95,388	699,003	699,003	699,003
2	AB.13211	Backfilling around fundation Class-III Soil	m ³	5.794	41,505	41,505	41,505	240,480	240,480	240,480
3	AF.11111	Placing base concrete M100 mortar, 4x6stone	m ³	0.262	468,031	557,255	497,563	122,624	146,001	130,362
4	AF.11213	Placing concrete for basement, M200 mortar, 1x2 stone	m ³	1.771	670,333	797,070	707,428	1,187,160	1,411,611	1,252,855
5	-	Furnish, process and installation of steel rod D=10mm	ton	0.062	14,679,554	15,584,054	14,518,754	910,132	966,211	900,163
6	-	Mortar Plaslarig 2cm thick mortar M75	m ²	3.360	739,600	739,600	739,600	2,485,056	2,485,056	2,485,056
7	AF.81111	Formwork of above	100m ²	0.043	4,804,218	5,248,963	5,248,963	206,581	225,705	225,705
8	-	M 24 x 600 Zinc plated Bolt, Nut	kit	16.000	64,680	64,680	64,680	1,034,880	1,034,880	1,034,880
9	-	Fixing of M 24 x 600 Zinc plated Bolt, Nut	ton	0.060	2,427,080	2,427,080	2,427,080	145,625	145,625	145,625
Sub Total								7,031,542	7,354,573	7,114,129
II		Basement to fix the pillar								
10	AB.11323	Excavation of basement with width <1m, depth<1m, Class-III Soil	m3	3.227	95,388	95,388	95,388	307,817	307,817	307,817
11	AB.13211	Backfilling around fundation Class-III Soil	m3	3.177	41,505	41,505	41,505	131,861	131,861	131,861
12	AF.61110	Furnish, process and installation of steel rod D=10mm	ton	0.003	12,409,991	13,314,491	12,214,729	37,230	39,943	36,644
13	AF.61120	Furnish, process and installation of steel rod D=18mm	ton	0.005	12,290,846	13,208,846	12,034,778	61,454	66,044	60,174
14	AF.11213	Placing concrete for basement, M200 mortar, 1x2 stone	m3	0.050	670,333	797,070	687,343	33,517	39,854	34,367
15	AF.81111	Formwork of above	100m2	0.002	4,804,218	5,248,963	5,248,963	9,608	10,498	10,498
16	-	Zinc plating	kg	11.230	32,340	32,340	32,340	363,178	363,178	363,178
17	-	Installation, transportation and fixing of fixing base material <0.5 Ton	piece	1.000	891,158	891,158	891,158	891,158	891,158	891,158
Sub Total								1,835,824	1,850,354	1,835,698
III		Steel column 10m								
18	-	Installation of steel column	ton	3.249	4,190,888	4,190,888	3,023,403	13,616,195	13,616,195	9,823,036
19	-	Apply rust-resistant paint	kg	1630.710	21,560	21,560	21,560	35,158,108	35,158,108	35,158,108
20	-	Apply stainless paint	kg	786.120	21,560	21,560	21,560	16,948,747	16,948,747	16,948,747
21	-	M14x30 Zinc plated Bolt	kit	832.000	7,560	7,560	7,560	6,289,920	6,289,920	6,289,920
Sub Total								72,012,970	72,012,970	68,219,811
IV		Watch tower								
22	AH.13111	Floor wood of 2m length, 2m width, 5cm thickness (Grade III Timber)	m3	0.217	8,675,387	8,864,097	313,387	1,882,559	1,923,509	68,005
23	-	M14x50 zinc plated bolt	set	6.000	9,660	9,660	9,660	57,960	57,960	57,960
24	-	Installation of steel column	ton	0.032	4,190,888	4,190,888	3,023,403	134,108	134,108	96,749
25	-	Installation of steel crossing frame of roof	ton	0.084	2,820,528	2,820,528	2,054,568	236,924	236,924	172,584
26	-	Producing rust-resistant paint	kg	165.450	21,560	21,560	21,560	3,567,102	3,567,102	3,567,102
27	-	0.5 x 1,040mm Cold corrugated iron	m	4.800	114,380	114,380	114,380	549,024	549,024	549,024
Sub Total								6,427,678	6,468,628	4,511,424
V.		Fixing wire 50-10								
28	-	Zinc plated twisted steel wire	kg	5.180	36,680	36,680	36,680	190,002	190,002	190,002
29	-	Zinc plated round head adjusting bar	set	1.000	101,500	101,500	101,500	101,500	101,500	101,500
30	-	Zinc plated lock	piece	2.000	24,920	24,920	24,920	49,840	49,840	49,840
31	-	Zinc plated steel clamp	piece	8.000	30,240	30,240	30,240	241,920	241,920	241,920
32	-	Installing the fixing wire	set	1.000	157,000	157,000	157,000	157,000	157,000	157,000
Sub Total								740,262	740,262	740,262
VI		Lightning Rod								
33	-	Rust -resistant paint steel production	kg	3.200	21,560	21,560	21,560	68,992	68,992	68,992
34	-	M100x30 zinc plated bolt	set	6.000	7,560	7,560	7,560	45,360	45,360	45,360
35	-	Installation of base feet	set	1.000	644,204	644,204	644,204	644,204	644,204	644,204
36	-	Copper plated lightning rod	rod	1.000	753,056	753,056	753,056	753,056	753,056	753,056
Sub Total								1,511,612	1,511,612	1,511,612
VII		Wiring for the watch tower LR-24								
37	-	Earthing pile L63x63x5 L= 2500 mm zinc plated	kg	288.600	32,340	32,340		9,333,324	9,333,324	9,333,324
38	-	Earth wiring CT3 D12 zinc plated	kg	110.000	32,340	32,340		3,557,400	3,557,400	3,557,400
39	-	Steel sealage of the pile L63x5 L=100mm zinc plated	kg	11.550	32,340	32,340		373,527	373,527	373,527
40	AB.11323	Excavating ditch for earthening (3rd class soil)	m3	29.230	95,388	95,388	95,388	2,788,191	2,788,191	2,788,191
41	AB.13211	Refilling soil in the earthening ditch (3rd class soil)	m3	29.230	41,505	41,505	41,505	1,213,191	1,213,191	1,213,191
42	-	Driving earthening pile	pile	24.000	112,023	112,023	112,023	2,688,552	2,688,552	2,688,552
43	-	Producing, arranging the earth wiring	m	170.000	12,268	12,268	9,498	2,085,560	2,085,560	2,085,560
Sub Total								22,039,745	22,039,745	22,039,745

No.	Code	Description	Unit	Work Quantity	Unit Cost (VND)	Unit Cost (VND)	Unit Cost (VND)	Total (VND)	Total (VND)	Total (VND)
Location	Watershed				Total of Estimated Cost before Adjustment			111,599,633	111,978,144	105,972,681
					Adjustment for Labor	20.0%		4,794,670	4,794,670	4,794,670
					Adjustment for Material		9,460,360.0	9,460,360	9,460,360	9,460,360
					Adjustment for Machine	1.2%		1,339,196	1,343,738	1,271,672
					Total			127,193,859	127,576,912	121,499,384
					Miscellaneous	1.5%		1,907,908	1,913,654	1,822,491
					Total Direct Cost			129,101,767	129,490,566	123,321,874
					Administration Charge	6.0%		7,746,106	7,769,434	7,399,312
					Profit Charge	5.5%		7,526,633	7,549,300	7,189,665
					Total before Tax			144,374,506	144,809,300	137,910,852
					(VAT included in Material)			(23,158,781)	(23,274,932)	(22,560,409)
					Total w/o VAT			121,215,725	121,534,368	115,350,443
Location	Coastal				Total of Estimated Cost before Adjustment			111,599,633	111,978,144	105,972,681
					Adjustment for Labor	4.0%		958,934	958,934	958,934
					Adjustment for Material		3,638,600.0	3,638,600	3,638,600	3,638,600
					Adjustment for Machine			116,197,167	116,575,678	110,570,215
					Total			1,742,958	1,748,635	1,658,553
					Miscellaneous	1.5%		117,940,125	118,324,313	112,228,768
					Total Direct Cost			6,250,827	6,271,189	5,948,125
					Administration Charge	5.3%		7,451,457	7,475,730	7,090,614
					Profit Charge	6.0%		131,642,408	132,071,232	125,267,507
					Total before Tax			(22,840,789)	(22,955,344)	(22,250,633)
					(VAT included in Material)					
					Total w/o VAT			108,801,619	109,115,888	103,016,874

Table D-4 Typical Cost Estimation for Construction of Silviculture Infrastructure

Type of Infrastructure	Specification	Floor Area	Forestry Guard Station					
		Facilities	67.9m ² (7.8m x 8.7m)					
			Toilet x 1no					
			Electricity Arrangement					
No.	Code	Description	Unit	Work Quantity	Unit Cost (VND)	Unit Cost (VND)	Unit Cost (VND)	Total (VND)
I		Forestry Guard Station						
1	AB.11413	Excavation for foundation soil class-III	m ³	11,292	138,349	138,349	138,349	1,562,237
2	AF.11111	Leveling concrete M100, stone 4x6	m ³	0.566	468,031	557,255	497,563	264,906
3	AF.11213	Placing concrete for foundation, M200, stone 1x2	m ³	2.193	670,333	797,070	707,428	1,470,040
4	AF.61110	Furnishing, cutting, bending and placing mild steel RF D=10mm	ton	0.065	12,409,991	13,314,491	12,249,191	806,649
5	AF.61120	Furnishing, cutting, bending and placing mild steel RF D=18mm	ton	0.201	12,290,846	13,208,846	12,229,646	2,470,460
6	AF.81122	Formwork	100m ²	0.266	6,074,344	6,519,089	6,519,089	1,615,775
7	AE.17113	Building the foundation, 13x18x38 bolder stone	m ³	10,960	432,122	549,145	471,877	4,736,057
8	AE.21113	Brick masonry for building foundation (65x105x220), M50	m ³	3.107	697,781	676,123	653,802	2,168,006
9	AB.13112	Earthfilling for foundation	m ³	12,952	48,786	48,786	48,786	631,876
10	AB.13411	Earthfilling (Sand) for foundation	m ³	22,817	32,767	32,767	32,767	747,645
11	AF.11332	Placing concrete for foundation, M150, stone 4-6	m ³	6,290	533,913	634,396	571,377	3,358,313
12	AF.12313	Placing concrete slab, M200, stone1x2	m ³	2.513	861,391	987,924	898,627	2,164,676
13	AF.61511	Furnishing, cutting, bending and placing mild steel RF D=10mm	ton	0.147	12,795,212	13,699,712	12,634,412	1,880,896
14	AF.61521	Furnishing, cutting, bending and placing mild steel RF D=18mm	ton	0.155	12,426,983	13,344,983	12,365,783	1,926,182
15	AF.81141	Formwork	100m ²	0.329	6,654,307	7,099,052	7,099,052	2,189,267
16	AF.12413	Placing concrete for roof and floor M200, stone1x2	m ³	1.048	750,155	750,155	750,155	786,162
17	AF.61711	Production and instalation of steel rod D=10mm	ton	0.078	12,345,047	13,314,491	19,746,491	962,914
18	AF.81151	Placing concrete for wood casing, roof & floor	100m ²	0.198	5,728,868	5,728,868	5,728,868	1,134,316
19	AF.12513	Placing concrete for lintel	m ³	0.371	854,355	854,355	854,355	316,966
20	AF.61161	Furnishing, cutting, bending and placing mild steel rod	ton	0.041	12,409,991	13,344,983	19,158,983	517,681
21	AE.73113	Bulling the wall with 6 hole brick (85x130x200) M50	m ³	0.093	490,452	490,452	490,452	45,612
22	AE.73213	Brick masonry, M50	m ³	17,337	490,542	473,498	459,551	8,504,527
24	AE.73223	Brick masonry, M50 for building wall (85x130x200)	m ³	4.480	502,245	485,182	471,198	2,250,058
25	AE.33113	Building with split bricks 50x100x200, building column, pilar with height <4m, M50	m ³	0.390	901,939	901,939	901,939	351,756
26	TT	Inslationg and finishing wooden door of glass panel, normal lock	m ²	4.840	580,500	580,500	580,500	2,809,620
27	TT	Inslationg and finishing wooden door of glass panel, normal lock	m ²	6.720	554,700	554,700	554,700	3,727,584
28	AK.83422	Painting steel with three 3 coats of paint	m ²	5.830	20,204	20,204	20,204	117,789
29	AH.11121	Production and installation of wood components, crossing frame of roof with a	m ³	0.567	9,002,194	9,190,904	9,190,904	5,104,244
30	AH.13111	Manufacturing and installation of wooden item	m ³	0.748	8,675,387	8,864,097	8,864,097	6,489,189
31	AH.13211	Fabrication and installation of timber components, purlin	m ³	0.657	8,667,493	8,856,203	8,856,203	5,694,543
32	AK.11110	Covering tile roof 22v/m ² , height≤ 4m	100m ²	0.854	6,277,188	5,203,268	5,203,268	5,360,719
33	AK.23113	Plastering work	m ²	32,900	35,412	35,412	35,412	1,165,055
34	AK.25113	Plastering to the eaves M50	m ²	26,400	25,751	25,751	25,751	679,826
35	AK.42114	Finishing work of eaves and gutter with thickness of 1.0cm, M75	m ²	9,060	14,632	14,632	14,632	132,566
36	AK.124213	Plastering the double edge with M50	m	16,700	49,289	49,289	49,289	823,126
37	AK.24313	Plastering the fillet with M50	m	31,800	12,069	12,069	12,069	383,794
38	AK.22123	Plastering the pillar, staircase with thickness of 1.5cm M50	m ²	21,060	49,872	49,872	49,872	1,050,304
39	AK.21134	Plastering external wall, thickness of 2.0cm, M75	m ²	25,980	36,508	36,508	36,508	948,478
40	AK.21123	Plastering external wall, thickness of 1.5cm, M50	m ²	102,670	32,307	34,003	32,694	3,316,960
41	AK.21223	Plastering the internal wall with thickness of 1.5cm, M50	m ²	289,950	27,195	28,891	27,582	7,885,190
42	AK.41214	Polishing the floor with color, thickness of 2.0cm, M75	m ²	9,300	16,570	16,570	16,570	154,101
43	AK.51220	Paving the floor with ceramic tile 200x200mm	m ²	65,025	112,221	93,245	93,245	6,063,256
44	AK.81130	Cement-washing twice	m ²	70,760	3,692	3,692	3,692	261,246
45	AK.81120	White-washing one time and color-washing twice outdoor	m ²	112,270	4,316	4,316	4,316	484,557
46	AK.81110	White-washing one time and color-washing twice indoor	m ²	289,950	4,191	4,191	4,191	1,215,180
47	TT	Electricity Arrangement	Sum	1,000	23,036,265	23,036,265	23,036,265	23,036,265
48	TT	Construction of Toilet	Sum	1,000	48,705,373	48,705,373	48,705,373	48,705,373
		Sub Total			206,952,078	213,371,866	221,097,078	169,705,857
								171,497,817
								169,182,770
		Location	Watershed		Total of Estimated Cost before Adjustment			
					169,705,857	171,497,817	169,182,770	
					Adjustment for Labor	20.0%	9,240,020	9,240,020
							10,400,000	10,400,000
					Adjustment for Material		2,036,470	2,057,974
						1.2%		2,030,193
					Total		191,382,347	193,195,811
					Miscellaneous	1.5%	2,870,735	2,897,937
					Total Direct Cost		194,253,082	196,093,748
					Administration Charge	6.0%	11,655,185	11,765,625
					Profit Charge	5.5%	11,324,955	11,432,266
					Total before Tax		217,233,222	219,291,639
					(VAT included in Material)		(8,830,914)	(9,047,442)
					Total w/o VAT		208,402,308	210,244,197
								207,818,963
		Location	Coastal		Total of Estimated Cost before Adjustment			
					169,705,857	171,497,817	169,182,770	
					Adjustment for Labor	4.0%	1,848,004	1,848,004
							4,000,000	4,000,000
					Adjustment for Material			4,000,000
					Adjustment for Machine			
					Total		175,553,861	177,345,821
					Miscellaneous	1.5%	2,633,308	2,660,187
					Total Direct Cost		178,187,169	180,006,008
					Administration Charge	5.3%	9,443,920	9,540,318
					Profit Charge	6.0%	11,257,865	11,372,780
					Total before Tax		198,888,954	200,919,106
					(VAT included in Material)		(8,709,657)	(8,923,211)
					Total w/o VAT		190,179,297	191,995,895
								189,603,962

Table D-5 Typical Cost Estimation for Construction of Silviculture Infrastructure

Type of Infrastructure
Specification

Forest Protection Board

No.	Code	Description	Unit	Work Quantity	NCC	SCC	SE	NCC	SCC	SE
Forest Protection Board					Unit Cost (VND)	Unit Cost (VND)	Unit Cost (VND)	Total (VND)	Total (VND)	Total (VND)
1	AB.25113	Excavating foundation, 3 rd class soil, W≤3m, D≤1m	100m ³	3.300	1,463,237	1,463,237	1,463,237	4,828,682	4,828,682	4,828,682
2	AB.67110	Dry stone masonry without sealing vein	100m ³	0.400	2,835,095	2,835,095	2,835,095	1,134,038	1,134,038	1,134,038
3	AE.21114	Brick masonry size 15x20x25, M75	m ³	2.000	697,781	676,123	653,802	1,395,562	1,352,246	1,307,604
4	AF.12113	Placing concrete for Pillar M200, stone 1x2	m ³	0.300	971,897	1,098,430	1,009,133	291,569	329,529	302,740
5	AE.21114	6 holed brick masonry dimension 10x15x22, wall thickness≤ 10cm, height ≤ 4m, cement mortar M30	m ³	0.840	697,781	676,123	653,802	586,136	567,943	549,194
6	AF.81111	Wooden formwork for in situ concrete: pillar, wall bracing	100m ²	0.030	4,804,218	5,248,963	5,248,963	144,127	157,469	157,469
7	AF.61110	Fabrication and installation of wall reinforcement, diameter≤10mm	ton	0.010	12,409,991	13,314,491	12,249,191	124,100	133,145	122,492
8	AF.61120	Fabrication and installation of wall reinforcement, diameter≤18mm	ton	0.030	12,290,846	13,208,846	12,229,646	368,725	396,265	366,889
9	AK.21113	Plastering wall, thickness 1cm, height ≤4m, cement mortar M50	m ²	15.600	23,284	23,284	23,284	363,234	363,234	363,234
10	AK.84111	Painting the wall with 2 coats	m ²	7.200	13,818	13,818	13,818	99,491	99,491	99,491
11	AB.65130	Backfilling around structure	m ³	1.500	1,489,256	1,489,256	1,489,256	2,233,884	2,233,884	2,233,884
12	TT	Painting to draw letters, decorative painting (Asia paint for road)	kg	8.000	64,681	64,681	64,681	517,445	517,445	517,445
13	TT	Painting to draw letters, decorative drawing	cong	15.000	46,944	46,944	46,944	704,160	704,160	704,160
Sub Total								12,791,153	12,817,531	12,687,321
Location		Watershed			Total of Estimated Cost before Adjustment			12,791,153	12,817,531	12,687,321
					Adjustment for Labor	20.0%		958,747	958,747	958,747
					Adjustment for Material		578,760.0	578,760	578,760	578,760
					Adjustment for Machine	1.2%		153,494	153,810	152,248
					Total		14,482,153	14,508,848	14,377,076	
					Miscellaneous	1.5%		217,232	217,633	215,656
					Total Direct Cost		14,699,385	14,726,481	14,592,732	
					Administration Charge	5.3%		779,067	780,503	773,415
					Profit Charge	6.0%		928,707	930,419	921,969
					Total before Tax		16,407,160	16,437,403	16,288,116	
					(VAT included in Material)		(219,939)	(222,999)	(214,982)	
					Total w/o VAT		16,187,221	16,214,404	16,073,134	
Location		Coastal			Total of Estimated Cost before Adjustment			12,791,153	12,817,531	12,687,321
					Adjustment for Labor	4.0%		191,749	191,749	191,749
					Adjustment for Material		222,600.0	222,600	222,600	222,600
					Adjustment for Machine					
					Total		13,205,502	13,231,880	13,101,671	
					Miscellaneous	1.5%		198,083	198,478	196,525
					Total Direct Cost		13,403,584	13,430,359	13,298,196	
					Administration Charge	5.3%		710,390	711,809	704,804
					Profit Charge	6.0%		846,838	848,530	840,180
					Total before Tax		14,960,813	14,990,698	14,843,180	
					(VAT included in Material)		(217,331)	(220,355)	(212,433)	
					Total w/o VAT		14,743,482	14,770,343	14,630,747	

Table D-6 Typical Cost Estimation for Construction of Silviculture Infrastructure

Type of Infrastructure	Nursery Garden		
Specification	Area	Capacity	6,800 m ²
			1,000,000 plants / year

No.	Code	Description	Unit	Work Quantity	Unit Cost (VND)	Unit Cost (VND)	Unit Cost (VND)	NCC	SCC	SE	NCC	SCC	SE
1 Construction of Nursery Garden													
1	AB.25113	Excavating foundation, 3 rd class soil, W≤3m, D≤1m	m ³	38.970	14,631	14,631	14,631	570,170	570,170	570,170	570,170	570,170	570,170
2	AF.12152	Placing concrete, M50, stone4x6	m ³	28.130	870,818	958,286	922,394	24,496,110	26,956,585	25,946,943			
3	AE.11113	Foundation masonry with quarry-stone, thickness≤60, cement mortar #50	m ³	47.100	398,048	398,048	398,048	18,748,042	18,748,042	18,748,042			
4	AG.11113	Pre-cast concrete for pillar stone 1x2, M200	m ³	10.520	710,186	710,186	710,186	7,471,157	7,471,157	7,471,157			
5	AF.12613	Concrete for slab, stone 1x2 M200	m ³	0.430	801,852	928,385	839,088	344,796	399,206	360,808			
6	AF.61110	Furnishing, cutting, bending and placing mild steel reinforcement D<=10mm	ton	0.121	12,409,991	13,314,491	12,249,191	1,501,609	1,611,053	1,482,152			
7	AF.61120	Furnishing, cutting, bending and placing mild steel reinforcement D<=18mm	ton	0.830	12,290,846	13,208,846	12,229,646	10,205,089	10,967,305	10,154,275			
8	AF.81111	Formwork of pre-cast concrete pillar	100m ²	1.460	4,804,218	5,248,963	5,248,963	7,014,158	7,663,486	7,663,486			
9	AF.11111	Leveling Concrete stone 4x6 M100	m ³	9.350	344,790	434,014	374,322	3,223,787	4,058,031	3,499,911			
10	AE.11214	Wall masonry, d≤30, 4x8x19, cement mortar #75, ≤4m	m ³	2.820	453,591	453,591	453,591	1,279,126	1,279,126	1,279,126			
11	AK.21114	Plastering bricked wall, thickness=1.5cm, cement mortar #75, H≤4m	m ²	35.100	24,099	24,099	24,099	845,861	845,861	845,861			
12	AK.41213	Polishing background surface with color, thickness=20, cement mortar #50≤4m	m ²	25.200	15,167	15,167	15,167	382,213	382,213	382,213			
13		Irrigation System (main pipeline 1,400m, sub pipeline=770m)	sum	1.000	16,606,617	16,606,617	16,606,617	16,606,617	16,606,617	16,606,617			
Sub Total													
Location		Total of Estimated Cost before Adjustment											
		Adjustment for Labor											
		18,072,836.6											
		Adjustment for Material											
		1.2%											
		1,112,265											
		Total											
		116,040,476											
		Miscellaneous											
		1.5%											
		1,740,607											
		Total Direct Cost											
		117,781,083											
		Administration Charge											
		5.3%											
		6,242,397											
		Profit Charge											
		6.0%											
		7,441,409											
		Total before Tax											
		131,464,890											
		(VAT included in Material)											
		(6,110,504)											
		(6,496,027)											
		(6,316,808)											
		Total w/o VAT											
		125,354,386											
		130,552,538											
		127,810,325											
Location		Total of Estimated Cost before Adjustment											
Coastal		92,688,735											
		Adjustment for Labor											
		4,166,639											
		Adjustment for Material											
		18,072,837											
		18,072,837											
		Adjustment for Machine											
		1,112,265											
		1,170,706											
		1,140,129											
		116,040,476											
		120,969,034											
		118,390,366											
		Miscellaneous											
		1,775,855											
		Total											
		100,473,154											
		1,507,097											
		1,580,149											
		1,541,928											
		101,980,252											
		106,923,420											
		104,337,108											
		Administration Charge											
		5,404,953											
		5,666,941											
		5,529,867											
		Profit Charge											
		6,443,1											

Figure D-1 Typical Design of Silviculture Infrastructure

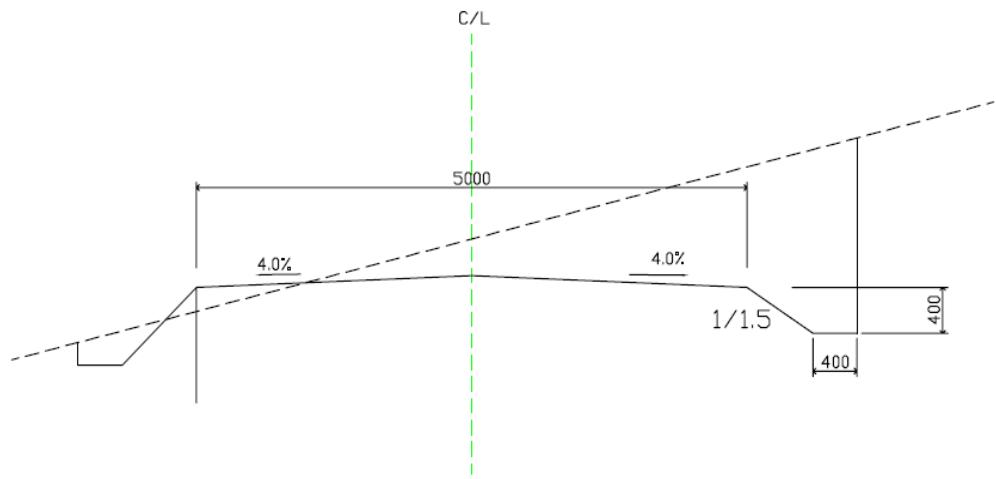
Type of Infrastructure
Specification Road

Causeway

Forestry Road

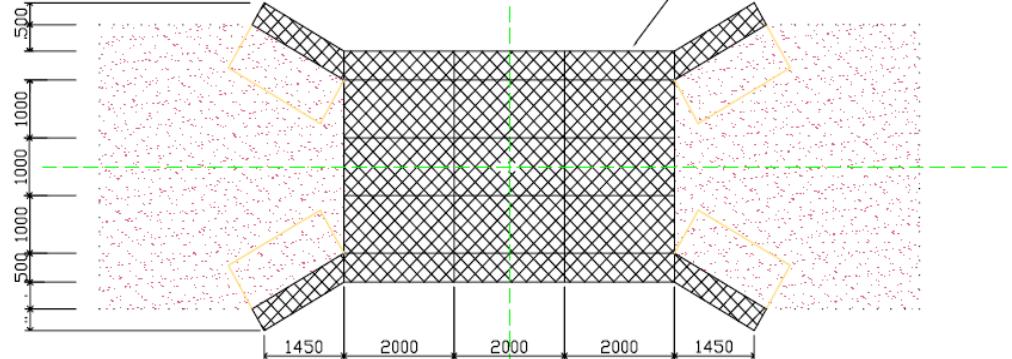
5m width
Without pavement
3m width with Gabion
2 nos. per km

Typical Drawing

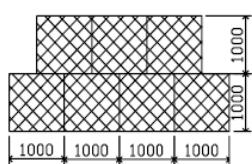


Typical Cross Section of Forestry Road

Section A Ganion Mattress
1m x 1m x 2m



Plan of Causeway



Section A

Figure D-2 Typical Design of Silviculture Infrastructure

Type of Infrastructure	Fire Watch Tower
Specification	Height
Pillar	10 m height
Watch House	Steel Rod
	4.0m ² (2.0m x 2.0m)

Typical Drawing

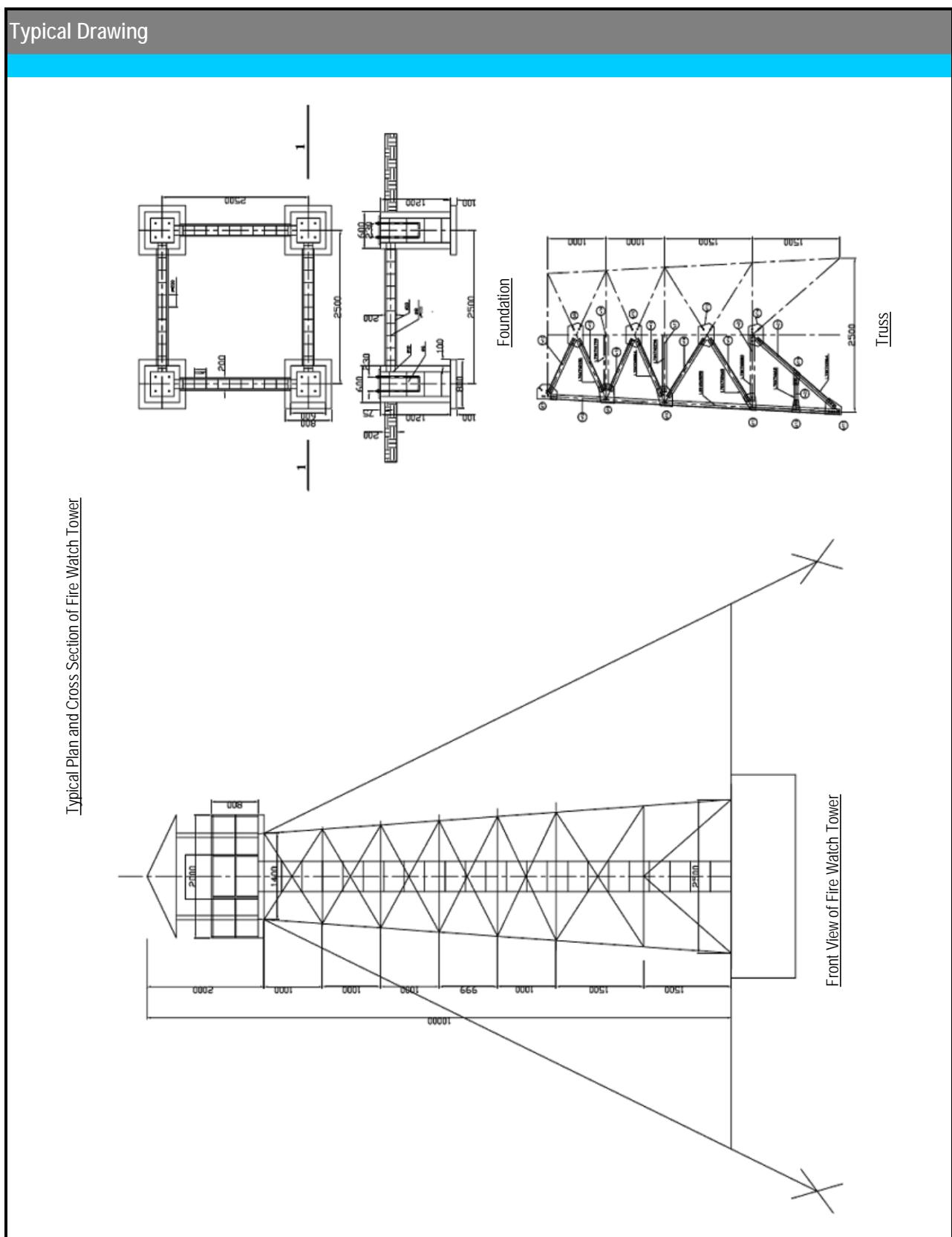


Figure D-3 Typical Design of Silviculture Infrastructure

Type of Infrastructure	Fire Watch Tower
Specification	Height
Pillar	10 m height
Watch House	Steel Rod 4.0m ² (2.0m x 2.0m)

Typical Drawing

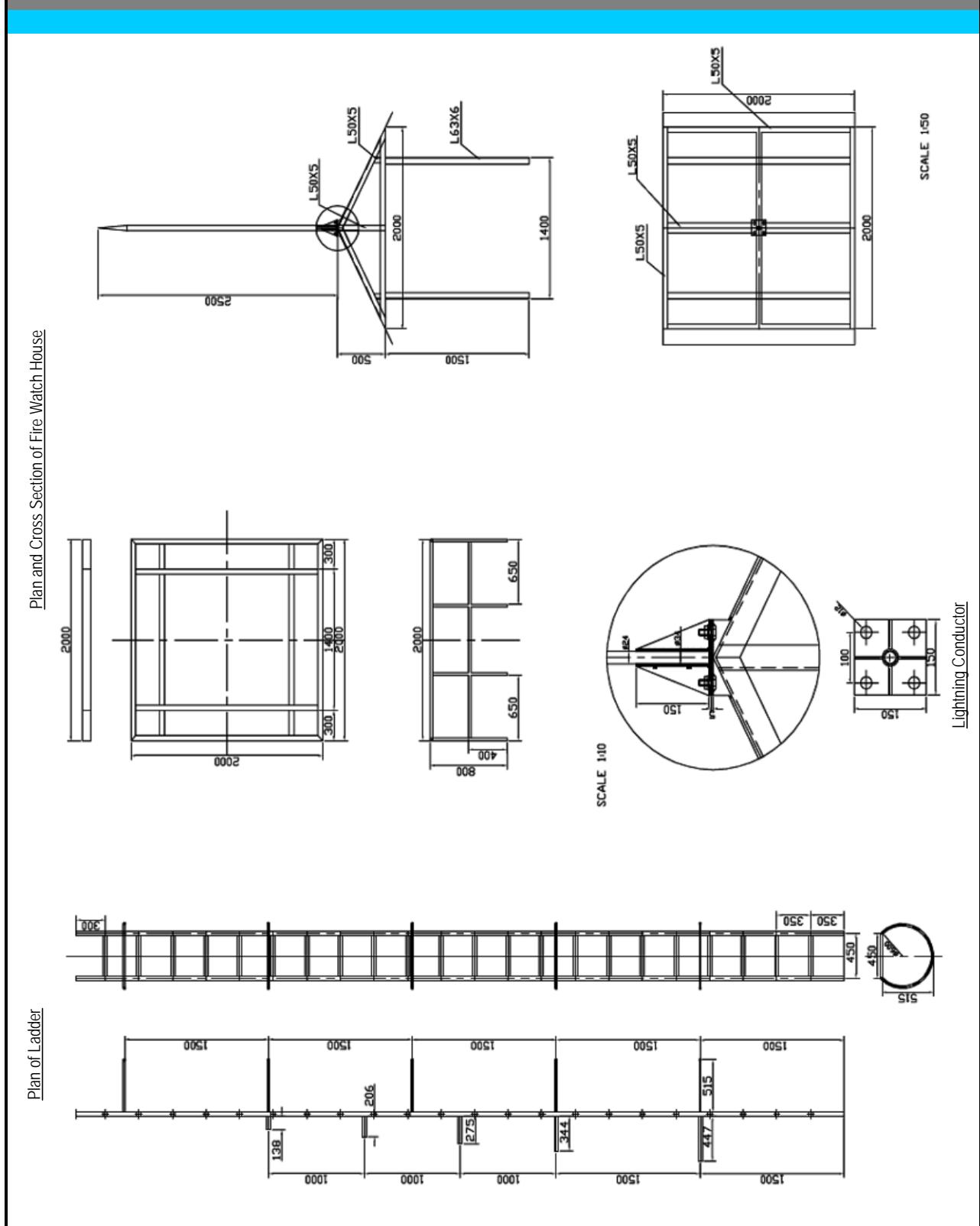


Figure D-4 Typical Design of Silviculture Infrastructure

Type of Infrastructure
Specification Floor Area
Facilities

Forestry Guard Station

67.9m² (7.8m x 8.7m)

Toilet x 1no

Electricity Arrangement

Typical Drawing

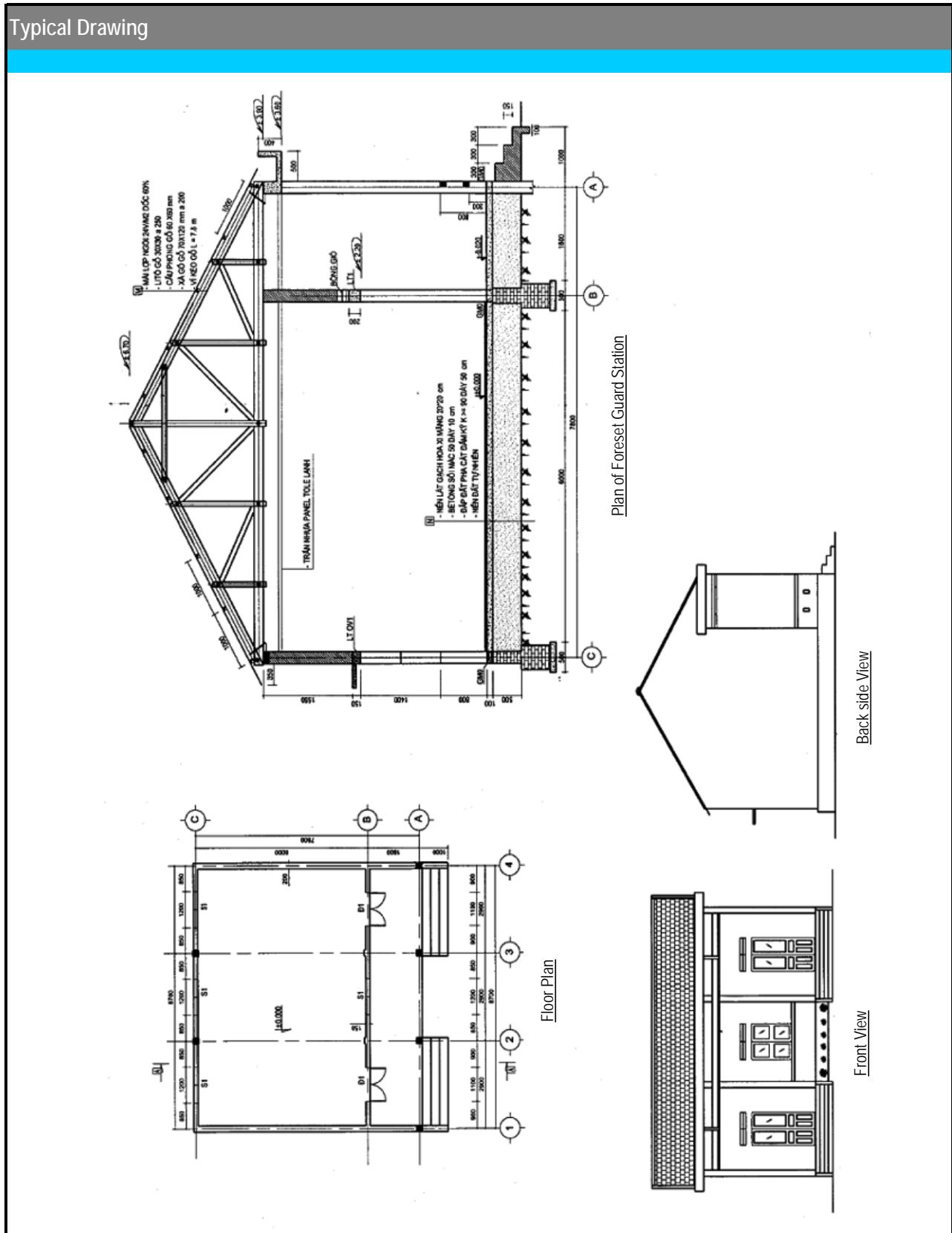


Figure D-5 Typical Design of Silviculture Infrastructure

Type of Infrastructure
Specification Floor Area
Facilities

Forestry Guard Station

67.9m² (7.8m x 8.7m)

Toilet x 1no

Electricity Arrangement

Typical Drawing

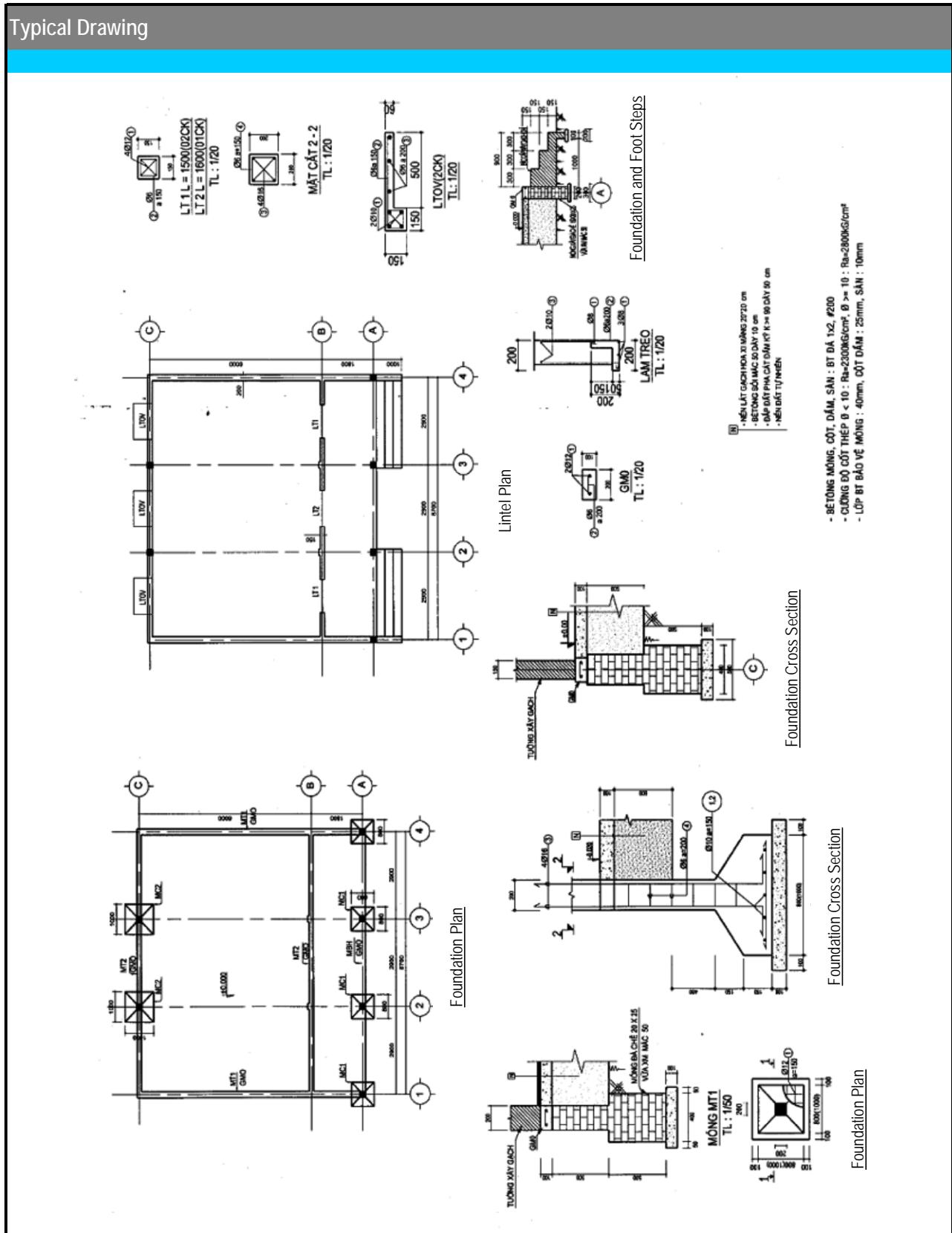


Figure D-6 Typical Design of Silviculture Infrastructure

Type of Infrastructure
Specification Floor Area
Facilities

Forestry Guard Station

67.9m² (7.8m x 8.7m)

Toilet x 1no

Electricity Arrangement

Typical Drawing

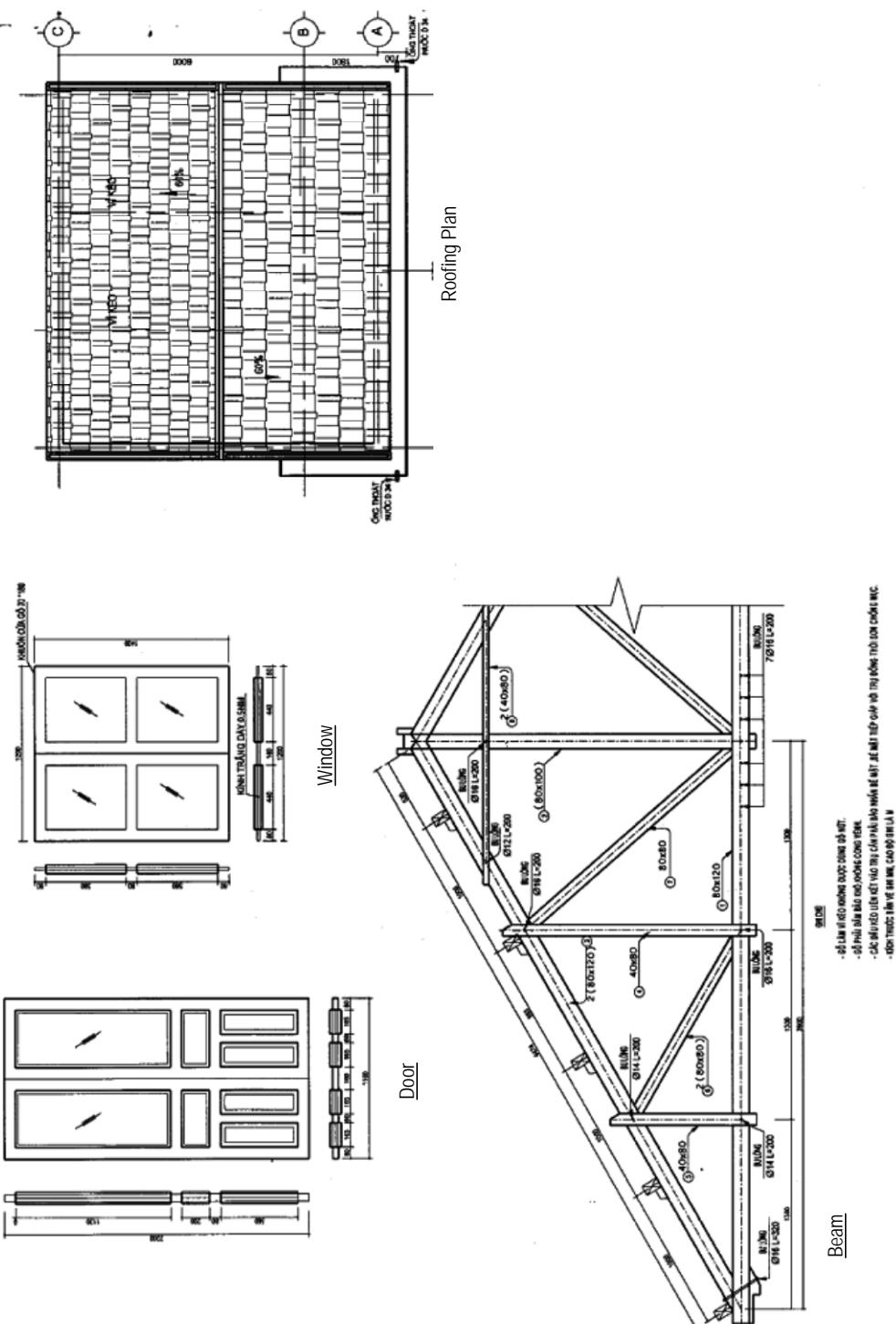


Figure D-7 Typical Design of Silviculture Infrastructure

Type of Infrastructure
Specification

Forest Protection Board

Typical Drawing

Typical Plan and Cross Section of Forest Protection Board

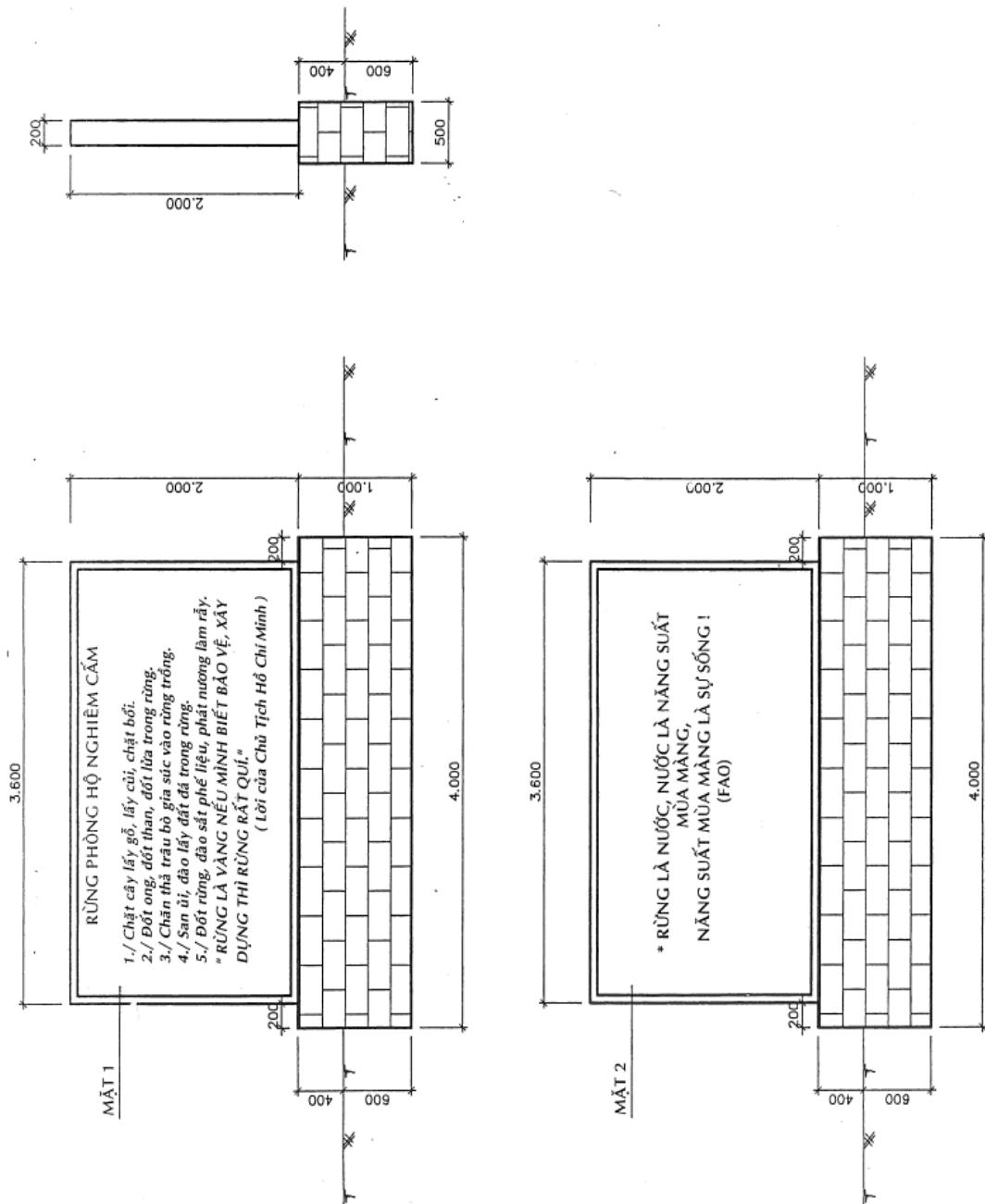


Figure D-8 Typical Design of Silviculture Infrastructure

Type of Infrastructure
Specification Area
Capacity

Nursery Garden

6,800 m²
1,000,000 plants / year

Typical Drawing

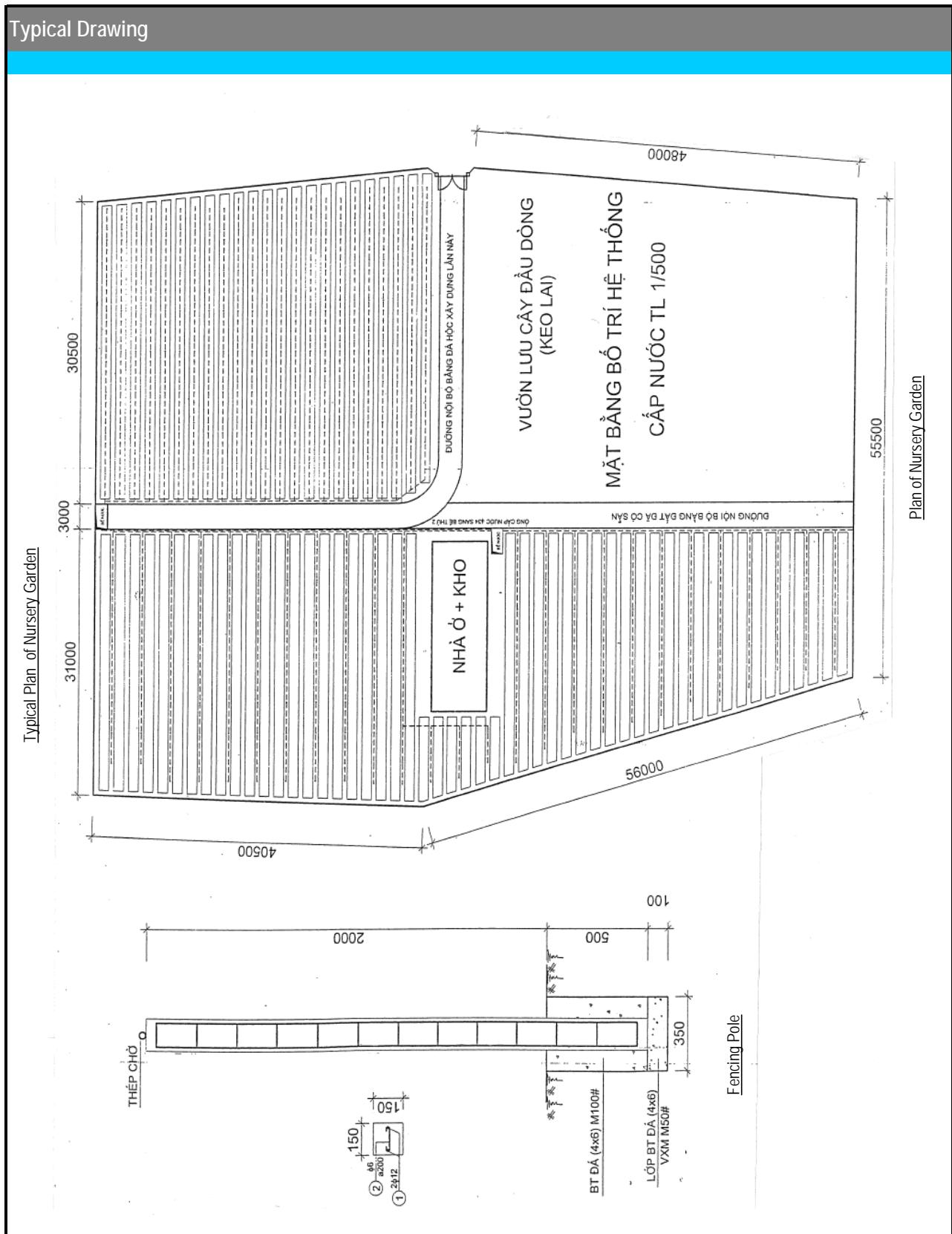


Figure D-9 Typical Design of Silviculture Infrastructure

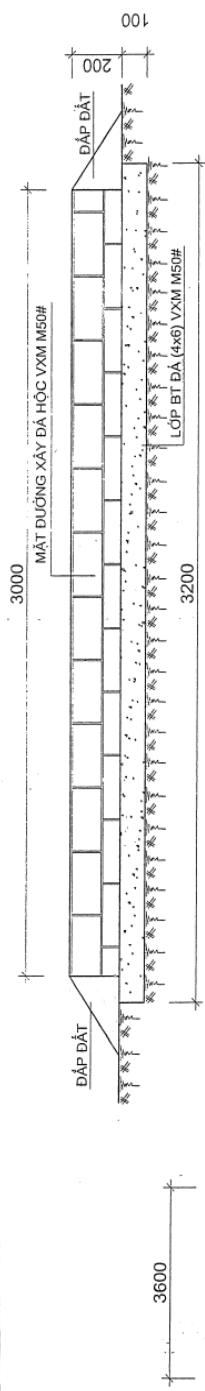
Type of Infrastructure
Specification Area
Capacity

Nursery Garden

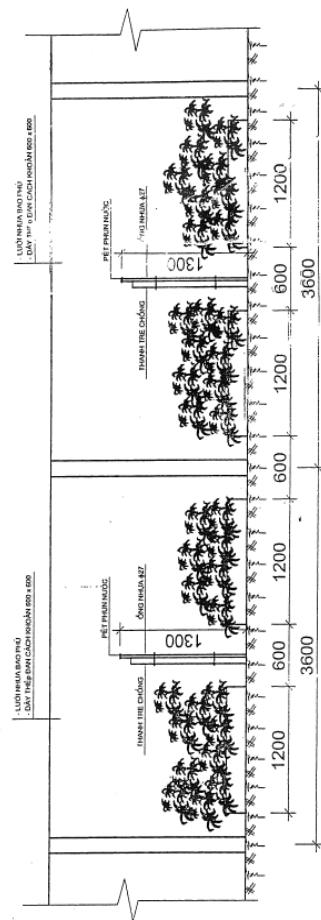
6,800 m²
1,000,000 plants / year

Typical Drawing

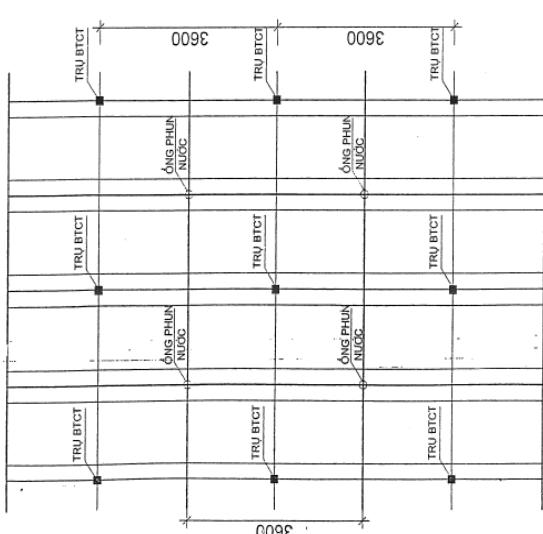
Typical Plan of Irrigation Arrangement



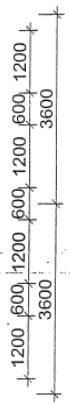
Plan of Sprinkler Irrigation System (1)



Plan of Sprinkler Irrigation System (2)



Plan of Sprinkler Irrigation System (3)



Annex E

**Final Report
for
the Preparatory Survey
on the Project for Restoration and Sustainable Management of Protection
Forests in the Socialist Republic of Vietnam**

**Annex E: Estimated Cost and Annual Disbursement of the Component for
Livelihood Development Assistance**

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Annex E: Estimated Cost and Annual Disbursement of the Component for Livelihood Development Assistance

1. Estimated Cost of the Component by Province

The component is composed of four parts: i) livelihood development needs assessment at village level, ii) introduction/development of demonstration plots, iii) technical assistance and training, and ii) cross field visits. They are further broken down into several activities. **Table E-1** gives the detailed cost of the component by province. Its summary is shown below.

Provinces	Need Assessment	Demonstration plots	Technical training	Field visits	Total
Than Hoa	1,004	2,540	2,021	114	5,680
Ngen An	717	1,815	1,672	114	4,319
Ha Tinh	1,148	2,903	2,063	114	6,228
Quang Binh	646	1,633	1,187	114	3,580
Quang Tri	1,722	3,499	3,043	152	8,416
T.T. Hue	2,152	4,588	2,937	152	9,829
Quang Nam	1,578	3,485	2,650	152	7,865
Quang Ngai	1,435	3,122	2,250	152	6,960
Binh Din	1,148	2,903	2,063	114	6,228
Phu Yen	717	1,803	1,299	152	3,972
Ninh Thuan	1,220	3,085	2,013	114	6,431
Binh Thuan	1,076	2,722	1,706	114	5,618
Total	14,565	34,099	24,904	1,559	75,127

The quantity of each activity was estimated mainly on the basis of the number of districts, communes and PFMBs to be involved. Meanwhile most of the unit costs of the activities of the component were estimated based on the experiences in SPL-3 Afforestation Project and other government projects. The costs for need assessment, technical training on livelihood development techniques, and field visits/exchange visits were estimated based on the government regulations, namely, MPI circular No. 61/ QD-BTC of 2 Nov 2006 and MARD circular No. 526/QD-BNN-TC of 3 Mar 2009. The unit costs of the activities are given in **Tables E-4 to Table E-9**.

The cost for introduction and development of demonstration plots were estimated by simply assuming that following livelihood development / assistance models would be introduced in the target villages.

- Bee keeping
- Mushroom culture
- Biogas introduction

2 Estimated Annual Cost of the Component by Provinces

Quang Tri province was taken as a sample province to estimate annual cost of the component according to the implementation schedule (**Table E-2**). Annual cost of the component in other provinces was estimated assuming that proportion of annual cost of the component against the total cost in other provinces is similar to that of Quang Tri province. Hence, they were calculated based on the % of annual cost of each subcomponent calculated for Quang Tri province and the cost of each subcomponent. **Table E-3** shows the estimated annual cost of the component by province.

Tables

Table E-1 Estimated Cost of Livelihood Development Support Component by Province

Table E-1 Estimated Cost of Livelihood Development Support Component b)

	Unit	Unit Cost (VND 1000)	Reference	Quang Nam	Quang Ngai	Binh Dinh	Phu Yen	Ninh Thuan	Binh Thuan	
			Q'ty	Amount (mil. VND)	Q'ty	Amount (mil. VND)	Q'ty	Amount (mil. VND)	Q'ty	Amount (mil. VND)
No of district (new sites)			6	4	5	3	4	3	3	3
No of district (SPL-3 sites)			1	2		1				
No of commune (calculated assuming development area per commune is 720ha)			16	14	16	9	17		15	
No. of commune (SPL-3 sites)			6	6		1				
No. of PFMB (new site)			6	5	5	3	4		8	
No. of PFMB (SPL-3)			1	2		1				
1 Needs Assessment for Livelihood Development										
1.1 Scoping		times	27,918	Table E-4	16	447	14	391	16	251
1.2 Detailed survey		times	43,830	Table E-4	16	701	14	614	16	394
2 Development of Demo Plots & Livelihood Development Models										
2.1 Guidance on the techniques introduced and identification of demonstration plots.		times	6,880	Table E-5	16	110	14	96	16	701
2.2 Development of demonstration plots										
(1) Establishment of demonstration plots (Acacia/Sugar Palm) - 5ha per commune	ha	5,621	<1	80	450	70	393	80	450	45
(2) Establishment of other livelihood models - one model per commune	types	146,470	Table E-6	16	2,344	14	2,051	16	2,344	9
3 Technical Assistance in Livelihood Development										
3.1 Technical training on livelihood development activities										
(1) Organization of technical training at the demonstration plots - 5 times per communes	times	6,880	Table E-5	80	550	70	482	80	550	45
(2) Organization of technical training at the district level - 9 times per district	times	14,893	Table E-5	54	804	36	536	45	670	27
(3) Quarterly coaching to local communities by field coordinators - for 22 quarters	times	1,188	Table E-7	219	331	244	290	279	331	157
3.2 Periodical meetings with communities										
(1) Quarterly meeting between field coordinators and PAFEC	times									
(2) Bi-annual monitoring at field by PAFEC	times	3,650	Table E-8	140	511	122	445	140	511	66
4 Inter-province Cross Field Visit										
1 Needs Assessment for Livelihood Development (SPL-3 sites)		times	19,013	Table E-9	6	114	6	114	6	114
1.1 Scoping		times	27,918	Table E-4	6	168	6	168	6	168
1.2 Detailed survey		times	43,830	Table E-4	6	263	6	263	6	263
2 Development of Demo Plots & Livelihood Development Models (SPL-3 sites)										
2.1 Guidance on the techniques introduced and identification of demonstration plots.		times	6,880	Table E-5	6	41	6	41	6	41
2.2 Development of demonstration plots										
(1) Establishment of demonstration plots (Acacia/Sugar Palm) - 3ha per commune	ha	5,621	<1	8	101	18	101	18	101	3
(2) Establishment of other livelihood models - (at a half of target communes)	types	146,470	Table E-6	3	439	3	439	3	439	1
3 Technical Assistance in Livelihood Development (SPL-3 sites)										
3.1 Technical training on livelihood development activities										
(1) Organization of technical training at the demonstration plots - 5 times per communes	times	6,880	Table E-5	12	83	12	83	12	83	2
(2) Organization of technical training at the district level - 9 times per district	times	14,893	Table E-5	3	45	6	89	6	89	3
(3) Quarterly coaching to local communities by field coordinators - for 22 quarters	times	1,188	Table E-7	108	128	108	128	108	128	18
3.2 Periodical meetings with communities										
(1) Quarterly meeting between field coordinators and PA FEC	times									
(2) Bi-annual monitoring at field by PA FEC	times	3,650	Table E-8	54	197	54	197	54	197	10
4 Inter-province Cross Field Visit (SPL-3 sites)		times	19,013	Table E-9	2	38	2	38	2	38
1 Needs Assessment for Livelihood Development (new sites)										
2 Development of Demo Plots & Livelihood Development (new sites)										
3 Technical Assistance in Livelihood Development (new sites)										
4 Cross Field Visit (new sites)										
1 Needs Assessment for Livelihood Development (SPL-3 sites)										
2 Development of Demo Plots & Livelihood Development (SPL-3 sites)										
3 Technical Assistance in Livelihood Development (SPL-3 sites)										
4 Cross Field Visit (SPL-3 sites)										
TOTAL					7,865	6,960	6,228	3,972	6,431	5,618

Table E-2 Estimation of Annual Cost of the Livelihood Development Support Component in Quang Tri Province

Quang Tri				Unit Cost	Reference Table	Total	2010				2011				2012				2013				2014				2015				2016				2017				2018				2019				2020			
							IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV											
							1st Year	2nd Year	3rd Year	4th Year	5th Year	6th Year	7th Year	8th Year	9th Year	10th Year																																		
7 5 No of district (new sites / SPL-3 sites)																																																		
13 11 No. of commune (new sites / SPL-3 sites)																																																		
3 2 No. of PFMB (new sites / SPL-3 sites)																																																		
1 Needs Assessment for Livelihood Development (new sites)																																																		
1.1 Scoping																																																		
1.2 Detailed survey																																																		
2 Development of Demo Plots & Livelihood Development Models (new sites)																																																		
2.1 Guidance on the techniques introduced and identification of demonstration plots.																																																		
2.2 Development of demonstration plots																																																		
(1) Establishment of demonstration plots (Acacia/Sugar Palm) - 5ha per commune	ha	65																																																
(2) Establishment of other livelihood models	types	13																																																
3 Technical Assistance in Livelihood Development (new sites)																																																		
3.1 Technical training on livelihood development activities																																																		
(1) Organization of technical training at the demonstration plots	times	65																																																
(2) Organization of technical training at the district level	times	63																																																
(3) Quarterly coaching to local communities by field coordinators	times	226																																																
3.2 Periodical meetings with communities																																																		
(1) Quarterly meeting between field coordinators and PAFEC	times	66																																																
(2) Bi-annual monitoring at field by PAFEC	times	113																																																
4 Inter-province Cross Field Visit (new sites)																																																		
1 Needs Assessment for Livelihood Development (SPL-3 sites)																																																		
1.1 Scoping	times	11																																																
1.2 Detailed survey	times	11																																																
2 Development of Demo Plots & Livelihood Development Models (SPL-3 sites)																																																		
2.1 Guidance on the techniques introduced and identification of demonstration plots.	times	11																																																
2.2 Development of demonstration plots																																																		
(1) Establishment of demonstration plots (Acacia/Sugar Palm) - 3ha per commune	ha	33																																																
(2) Establishment of other livelihood models	types	6																																																
3 Technical Assistance in Livelihood Development (SPL-3 sites)																																																		
3.1 Technical training on livelihood development activities																																																		
(1) Organization of technical training at the demonstration plots	times	22																																																
(2) Organization of technical training at the district level	times	15																																																
(3) Quarterly coaching to local communities by field coordinators	times	198																																																
3.2 Periodical meetings with communities																																																		
(1) Quarterly meeting between field coordinators and PAFEC	times	20																																																

Quang Tri

Table E-3 Estimated Annual Cost of Livelihood Development Support Component by Province

Project components	Unit	Project Cost (mil. VND)				1st (2010)				2nd (2011)				3rd (2012)				4th (2013)				5th (2014)				6th (2015)				7th (2016)				8th (2017)				9th (2018)				10th (2019)			
		Total	L.C	FC	L.C	FC	L.C	FC	L.C	FC	L.C	FC	L.C	FC	L.C	FC	L.C	FC	L.C	FC	L.C	FC	L.C	FC	L.C	FC	L.C	FC	L.C	FC	L.C	FC													
% of annual cost against the total cost per activity																																													
1 Needs Assessment for Livelihood Development (new sites)		100%																																											
2 Development of Demo Plots & Livelihood Development (new sites)		100%																																											
3 Technical Assistance in Livelihood Development (new sites)		100%																																											
4 Cross Field Visit (new sites)		100%																																											
Thanh Hoa																																													
1 Needs Assessment for Livelihood Development (new sites)	mil. VND	5,680																																											
2 Development of Demo Plots & Livelihood Development Models (SPL-3 sites)	mil. VND	1,004	1,004																																										
3 Technical Assistance in Livelihood Development (SPL-3 sites)	mil. VND	2,540	2,540																																										
4 Cross Field Visit (SPL-3 sites)	mil. VND	2,021	114	114																																									
Nghia An																																													
1 Needs Assessment for Livelihood Development (new sites)	mil. VND	4,319																																											
2 Development of Demo Plots & Livelihood Development Models (new sites)	mil. VND	717	717																																										
3 Technical Assistance in Livelihood Development (new sites)	mil. VND	1,815	1,815																																										
4 Cross Field Visit (new sites)	mil. VND	1,672	1,672																																										
Ha Tinh																																													
1 Needs Assessment for Livelihood Development (new sites)	mil. VND	6,228																																											
2 Development of Demo Plots & Livelihood Development Models (new sites)	mil. VND	1,148	1,148																																										
3 Technical Assistance in Livelihood Development (SPL-3 sites)	mil. VND	2,903	2,903																																										
4 Cross Field Visit (SPL-3 sites)	mil. VND	2,063	2,063																																										
Quang Binh																																													
1 Needs Assessment for Livelihood Development (new sites)	mil. VND	3,580																																											
2 Development of Demo Plots & Livelihood Development Models (new sites)	mil. VND	646	646																																										
3 Technical Assistance in Livelihood Development (new sites)	mil. VND	1,633	1,633																																										
4 Cross Field Visit (new sites)	mil. VND	1,187	1,187																																										
Quang Tri																																													
1 Needs Assessment for Livelihood Development (new sites)	mil. VND	8,416																																											
2 Development of Demo Plots & Livelihood Development Models (new sites)	mil. VND	933	933																																										
3 Technical Assistance in Livelihood Development (new sites)	mil. VND	2,359	2,359																																										
4 Cross Field Visit (new sites)	mil. VND	2,071	2,071																																										
T.T. Hue																																													
1 Needs Assessment for Livelihood Development (new sites)	mil. VND	9,829																																											
2 Development of Demo Plots & Livelihood Development Models (new sites)	mil. VND	1,363	1,363																																										
3 Technical Assistance in Livelihood Development (new sites)	mil. VND	3,448	3,448																																										
4 Cross Field Visit (new sites)	mil. VND	2,055	2,055																																										
T.T. Hue																																													
1 Needs Assessment for Livelihood Development (new sites)	mil. VND	8,416																																											
2 Development of Demo Plots & Livelihood Development Models (new sites)	mil. VND	971	971																																										
3 Technical Assistance in Livelihood Development (SPL-3 sites)	mil. VND	1,140	1,140																																										
4 Cross Field Visit (SPL-3 sites)	mil. VND	882	882																																										
T.T. Hue																																													
1 Needs Assessment for Livelihood Development (new sites)	mil. VND	1,140																																											
2 Development of Demo Plots & Livelihood Development Models (SPL-3 sites)	mil. VND	882	882																																										
3 Technical Assistance in Livelihood Development (SPL-3 sites)	mil. VND	38	38																																										
4 Cross Field Visit (SPL-3 sites)	mil. VND	38	38																																										

Table E-3 Estimated Annual Cost of Livelihood Development Support Component by Province

Project components		Unit	Project Cost (mil. VND)		1st (2010)		2nd (2011)		3rd (2012)		4th (2013)		5th (2014)		6th (2015)		7th (2016)		8th (2017)		9th (2018)		10th (2019)		
Quang Nam		mil. VND	7,865	7,865	Total	LC	FC	LC	FC																
1 Needs Assessment for Livelihood Development (new sites)		mil. VND	1,148	1,148																					
2 Development of Demo Plots & Livelihood Development Models (new sites)		mil. VND	2,903	2,903																					
3 Technical Assistance in Livelihood Development (new sites)		mil. VND	2,197	2,197																					
4 Cross Field Visit (new sites)		mil. VND	114	114																					
Quang Ngai		mil. VND	6,960	6,960																					
1 Needs Assessment for Livelihood Development (new sites)		mil. VND	1,004	1,004																					
2 Development of Demo Plots & Livelihood Development Models (new sites)		mil. VND	2,540	2,540																					
3 Technical Assistance in Livelihood Development (new sites)		mil. VND	1,753	1,753																					
4 Cross Field Visit (SPL-3 sites)		mil. VND	114	114																					
Binh Dinh		mil. VND	6,228	6,228																					
1 Needs Assessment for Livelihood Development (new sites)		mil. VND	1,148	1,148																					
2 Development of Demo Plots & Livelihood Development Models (new sites)		mil. VND	2,903	2,903																					
3 Technical Assistance in Livelihood Development (new sites)		mil. VND	2,063	2,063																					
4 Cross Field Visit (SPL-3 sites)		mil. VND	114	114																					
Phu Yen		mil. VND	3,972	3,972																					
1 Needs Assessment for Livelihood Development (new sites)		mil. VND	646	646																					
2 Development of Demo Plots & Livelihood Development Models (new sites)		mil. VND	1,633	1,633																					
3 Technical Assistance in Livelihood Development (new sites)		mil. VND	1,187	1,187																					
4 Cross Field Visit (new sites)		mil. VND	114	114																					
Ninh Thuan		mil. VND	6,431	6,431																					
1 Needs Assessment for Livelihood Development (new sites)		mil. VND	1,220	1,220																					
2 Development of Demo Plots & Livelihood Development Models (new sites)		mil. VND	3,085	3,085																					
3 Technical Assistance in Livelihood Development (new sites)		mil. VND	2,013	2,013																					
4 Cross Field Visit (new sites)		mil. VND	114	114																					
Binh Thuan		mil. VND	5,618	5,618																					
1 Needs Assessment for Livelihood Development (new sites)		mil. VND	1,076	1,076																					
2 Development of Demo Plots & Livelihood Development Models (new sites)		mil. VND	2,722	2,722																					
3 Technical Assistance in Livelihood Development (new sites)		mil. VND	1,706	1,706																					
4 Cross Field Visit (SPL-3 sites)		mil. VND	114	114																					
		mil. VND	823	823																					
		mil. VND	253	253																					
		mil. VND	628	628																					
		mil. VND	186	186																					
		mil. VND	1,047	1,047																					
		mil. VND	369	369																					
		mil. VND	38	38																					
		mil. VND	302	302																					
		mil. VND	38	38																					

Table E-4. Cost Breakdown of Livelihood Needs Assessment

1. Scoping							
a. Basis for Estimation:							
Cost Norm:	61/QD-BTC of 2 Nov 2006						
Participants:	70 persons/ PPMU/ DARD/ PFMB/ District staffs/ Commune leaders/ Forest users' representative						
Venue:	Regional Centre						
Type:	Residential						
Duration:	2 days						
Purpose:	Needs assessment/scoping						
b. Cost Breakdown							
Items	Unit cost (1)	Unit1	Q'ty (2)	Unit2	Q'ty (3)	Unit3	Total cost (1 x 2 x 3)
I Lecturer/ facilitator							
1.1 Lecturer	150,000 / session		4 sessions		1 person		600,000
1.2 Lecturer Assistant	100,000 / session		4 sessions		1 person		400,000
III Material							
Photocopy	20 pages		50 sets		500 VND/ page		500,000
Stationery	15,000 / person/ time		50 persons		1 times		750,000
Refreshments	10,000 / person/ day		50 persons		2 days		1,000,000
Meals	50,000 / person/ day		50 persons		2 days		5,000,000
IV Accommodation	120,000 / person/ day		50 persons		2 days		12,000,000
V Stipend/ meal allowance/ pocket money	50,000 / person/ day		50 persons		2 days		5,000,000
VI Venue	300,000 / person/ course		2 days		1		600,000
Sub-total							25,850,000
VII Management fee (8%)							2,068,000
Total							27,918,000

Table E-4. Cost Breakdown of Livelihood Needs Assessment

2. Detailed survey

a. Basis for Estimation:

Cost Norm:	61/ QD-BTC of 2 Nov 2006
Participants:	50 forest users
Venue:	Commune
Type:	Non Residential
Duration:	5 days
Purpose:	Project orientation

b. Cost Breakdown

Items	Unit cost (1)	Unit1	Q'ty (2)	Unit2	Q'ty (3)	Unit3	Total cost (1 x 2 x 3)
I Facilitator							
1.1 Facilitator	100,000 / session		10 sessions		1 person		1,000,000
1.2 Facilitator assistant	50,000 / session		10 sessions		1 person		500,000
II Transportation	50,000 / return trip		50 persons		1 person		2,500,000
III Material							
Photocopy	30 pages		50 sets		500 VND/ page		750,000
Stationery/ Drinks	15,000 / person/ day		50 persons		5 times		3,750,000
Meals	40,000 / person/ day		50 persons		5 days		10,000,000
IV Accommodation	120,000 / person/ day		5 persons		5 days		3,000,000
V Stipend/ meal allowance/ pocket money	25,000 / person/ day		50 persons		5 days		6,250,000
Stationery	30,000 / person/ course		50 persons		5 course		7,500,000
Refreshments	10,000 / person/ day		50 persons		5 days		2,500,000
VI Venue	300,000 / day		1 days		5 days		1,500,000
VII Local consultant (Level 2)	266,667 / day		5 days		1 person		1,333,000
Sub-total							40,583,000
VIII Management fee (8%)							3,247,000
Total							43,830,000

Table E-5 Cost Breakdown of Technical Training of/Guidance to Forest Users / Local Households

1. Technical Training/Guidance at the Commune Level

a. Basis for Estimation:

Cost Norm: 526/QD-BNN-TC of 3 Mar 2009
 Participants: 50 forest users/ local households
 Venue: Commune
 Type: Non residential
 Duration: 1 day

b. Cost Breakdown

Items	Unit cost (1)	Unit1	Q'ty (2)	Unit2	Q'ty (3)	Unit3	Total cost (1 x 2 x 3)
I Lecturer/ facilitator							
1.1 Lecturer	200,000	/ day	1	day	1	person	200,000
1.2 Lecturer Assistant	120,000	/ day	1	day	1	person	120,000
1.3 Transportation for Lecturers	100,000	trip	2	persons	2	trips	400,000
II Material							
2.1 Training material preperation	60,000	/ page	30	pages	1	set	1,800,000
2.2 Photocopy	30	pages	50	sets	500	VND/ page	750,000
2.3 Stationery	15,000	/ person/ time	50	persons	1	times	750,000
2.4 Meals	20,000	/ person/ time	50	persons	1	times	1,000,000
2.5 Water	7,000	/ person/ day	50	persons	1	days	350,000
III Stipend	20,000	/ person/ day	50	persons	1	days	1,000,000
Sub-total							6,370,000
IV Management fee (8%)							510,000
Total							6,880,000

No 61/ QD/2006 BTC of 2 Nov. 2006 stipulates that the professional training shall comply with the current spending limits of those funded by the state budget. Therefore, the above is adopted for the TOT.

Table E-5 Cost Breakdown of Technical Training of/Guidance to Forest Users / Local Households

2. Technical Training at the District Level

a. Basis for Estimation:

Cost Norm: 526/QD-BNN-TC of 3 Mar 2009
 Participants: 50 forest users/ local households
 Venue: District center
 Type: Non residential
 Duration: 1 day

b. Cost Breakdown

Items	Unit cost (1)	Unit1	Q'ty (2)	Unit2	Q'ty (3)	Unit3	Total cost (1 x 2 x 3)
I Lecturer/ facilitator							
1.1 Lecturer	200,000	/ half a day	2	half days	1	person	400,000
1.2 Lecturer Assistant	120,000	/ half a day	2	half days	1	person	240,000
1.3 Transportation for Lecturers	50,000	trip	2	persons	2	trips	200,000
II Transportation for trainees							
2.1 Transportation	30,000	trip	50	persons	2	trips	3,000,000
III Material							
3.1 Training material preperation	60,000	/ page	30	pages	1	set	1,800,000
3.2 Photocopy	30	pages	50	sets	500	VND/ page	750,000
3.3 Stationery	15,000	/ person/ time	50	persons	1	times	750,000
3.4 Meals	70,000	/ person/ time	50	persons	1	times	3,500,000
3.5 Water	7,000	/ person/ day	50	persons	1	days	350,000
IV Accommodation	0	/ person/ day	50	persons	1	days	0
V Stipend	50,000	/ person/ day	50	persons	1	days	2,500,000
VI Venue	300,000	day	1	days	1		300,000
Sub-total							13,790,000
VII Management fee (8%)							1,103,000
Total							14,893,000

No 61/ QD/2006 BTC of 2 Nov. 2006 stipulates that the professional training shall comply with the current spending limits of those funded by the state budget. Therefore, the above is adopted for the TOT.

Table E-6 Cost Breakdown of Demonstration Models for Livelihood Development

1. Biogas plant introduction

1.1 Basic Assumption

Size of biogas: 10 m³/unit
 Capacity of biogas: 1 family per unit
 No. of users/families per model: 20 households per model
 Reference: SNV biogas project at provincial level

1.2 Cost Estimates

a. Construction cost for one unit

Material	Unit	Quantity	Price (VND)	Amount (VND)
1 Cement	kg	1000	1,070	1,070,000
2 Brick	unit	3000	1,100	3,300,000
3 Sand	m ³	3	100,000	300,000
4 Steel (diameter 6 mm)	kg	10	12,000	120,000
5 Plastic pipe (diameter 150 mm)	m	2	150,000	300,000
6 Plastic pipe (diameter 200 mm)	m	2	200,000	400,000
7 Labor cost	working days	10	150,000	1,500,000
Sub-total				6,990,000
8 Management fee (8%)				559,000
Total				7,549,000

b. Total cost for one model

$$\text{VND } 6,990,000 / \text{ unit} \times 20 \text{ households} = 139,800,000 \text{ VND}$$

Source: NAFEC (August 2009)

2. Bee keeping

2.1 Basic Assumption

Operation period: 12 months
 Location: Mountainous area
 Size of the model: 600 hives
 Number of demonstration plots: 5 places
 Number of participants: 100 farmers

2.2 Requirements

Breeding quality: Domestic bee
 Requirement for bee-keeping: having at least 3 sphere barrels, queen-bee: up to 6 month age, free, food enough for 3 week:
 Scale/household : at lease 5 hives
 Number of participants, time and field trip
 Number 100 participants x 1 time x 1 day/time
 Field trip 150 persons x 2 times x 1 day/time
 Project-end summation 200 persons x time x 1 day / time

2.3 Cost estimates

No	Items	Cost (1.000đ)	Note
1	Breeding, equipments and materials	133,200	
2	Technical training	14,400	3 times
3	Field trip/ Conference	12,950	once
4	Project-end summation		once
5	Communication and propaganda	2,350	models and propaganda
6	Manager		9 months x 5 people (non-salary)
7	Supervision and management		
	Total	162,900	

2.4 Projected production

Honey productivity: > 12kg/ hive/year
 Honey quality: + Water content < 22%
 Queen-bee and hive multiplying potential: > 2 times / original hive/ year
 Training for bee-keeping techniques and hive managemen

Table E-7 Cost Breakdown of Meeting with Field Coordinators and Extension Workers

a. Basis for Estimation:

Cost Norm: 526/QD-BNN-TC of 3 Mar 2009
 Participants: 20 persons of field coordinators and extension workers
 Venue: Commune
 Type: Non-residential
 Duration: 1 day

b. Cost Breakdown

Items	Unit cost (1)	Unit1	Q'ty (2)	Unit2	Q'ty (3)	Unit3	Total cost (1 x 2 x 3)
I Lecturer/ facilitator							
1.1 Lecturer	150,000	/ day	1	day	1	person	150,000
1.3 Transportation for Lecturers	50,000	trip	1	person	1	trip	50,000
II Material							
Stationery and water	15,000	/ person/ time	20	persons	1	time	300,000
Meals	30,000	/ person/ time	20	persons	1	time	600,000
Sub-total							1,100,000
III Management fee (8%)							88,000
Total							1,188,000

Table E-6 Cost Breakdown of Demonstration Models for Livelihood Development

3. Mushroom production

3.1 Basic Assumption

No. of participants: 30 households
 Size of production model: Mountainous area
 Size of the model: 1 ton of straw

3.2 Cost estimates

No	Items	Q'ty	Unit	Unit cost (VND)	Unit	Total cost (VND)
1.	Survey and land preparation					
(1)	Lecturer	2	person-day	250,000	person-day	500,000
(2)	Local staff	1	person-day	50,000	person-day	50,000
(3)	Accommodation cost	2	person-night	100,000	person-night	200,000
	Sub-total					750,000
2.	Preparation of documents for training	1	I.S.	500,000		500,000
3.	Materials for 30 households					
(1)	Bamboo stick	30	sets	1,000,000	set	30,000,000
(2)	Straw	30	ton	300,000	ton	9,000,000
(3)	Shape by wood	30	sets	150,000	set	4,500,000
(4)	Shelf	30	sets	500,000	set	15,000,000
(5)	Mushroom	30	sets	300,000	for 1 ton	9,000,000
(6)	N, P, and Stone powder, lime	30	sets	100,000	set	3,000,000
(7)	P.E., Cotton wool	30	sets	200,000	set	6,000,000
(8)	Pump for watering	60	pumps	150,000	pump	9,000,000
	Sub-total					85,500,000
4.	2-day Training					
(1)	Facilitation cost for participants	60	person-day	25,000	person-day	1,500,000
(2)	Cost for lecturer	4	person-day	250,000	person-day	1,000,000
(3)	Cost for assistant	2	person-day	100,000	person-day	200,000
(4)	Drinking water	68	person-day	10,000	person-day	680,000
(5)	Copy of documents	30	persons	10,000	persons	300,000
(6)	Office materials	1	I.S.	300,000	-	300,000
(7)	Accommodation fees for lecturer and assistant	6	person-night	100,000	person-night	600,000
(8)	Stationaries for participants	30	persons	10,000	persons	300,000
	Sub-total					4,880,000
5.	Technical assistance in mushroom production in the field					
(1)	Facilitation cost for participants	150	person-time	25,000	person-day	3,750,000
(2)	Cost for lecturer	10	person-day	250,000	person-day	2,500,000
(3)	Drinking water	160	person-day	10,000	person-day	1,600,000
(4)	Accommodation fees for lecturer and assistant	10	person-night	100,000	person-night	1,000,000
	Sub-total					8,850,000
6.	Evaluation workshop at the field					
(1)	Resource person / speaker from the participants	1	person-day	60,000	person-day	60,000
(2)	Speakers	1	person-day	200,000	person-day	200,000
(3)	Lecturer	2	person-day	250,000	person-day	500,000
(4)	Facilitation cost for participants (commune leaders)	10	person-day	50,000	person-day	500,000
(5)	Facilitation cost for participants (farmers)	50	person-day	25,000	person-day	1,250,000
(6)	Drinking water	62	person-day	10,000	person-day	620,000
(7)	Recording/Picture taking	1	I.S.	300,000	-	300,000
	Sub-total					3,430,000
7.	Report preparation	1	person-day	250,000	person-day	250,000
	Grand Total					104,160,000

4. Average

Total estimated costs for:	Biogas introduction:	139,800,000
	Bee keeping	162,900,000
	Mushroom production	104,160,000
Average:		135,620,000
Average (with 8% management fee):		146,470,000

Table E-8 Cost Breakdown of Bi-annual Monitoring by PAFEC

a. Basis for Estimation:

Cost Norm: 526/QD-BNN-TC of 3 Mar 2009
 Participants: 30 forest users/ local households
 Venue: Commune
 Type: Non residential
 Duration: 1 day

b. Cost Breakdown

Items	Unit cost (1)	Unit1	Q'ty (2)	Unit2	Q'ty (3)	Unit3	Total cost (1 x 2 x 3)
I Lecturer/ facilitator							
1.1 Lecturer	300,000	/ day	1	day	1	person	300,000
1.2 Lecturer Assistant	120,000	/ day	1	day	1	person	120,000
1.3 Transportation for Lecturers	250,000	trip	2	person	1	trip	500,000
II Material							
2.1 Training material preperation	60,000	/ page	10	pages	1	set	600,000
2.2 Photocopy	10	pages	30	sets	500	VND/ page	150,000
2.3 Stationery	10,000	/ person/ time	30	persons	1	times	300,000
2.4 Meals	20,000	/ person/ time	30	persons	1	times	600,000
2.5 Water	7,000	/ person/ day	30	persons	1	days	210,000
III Stipend	20,000	/ person/ day	30	persons	1	days	600,000
Sub-total							3,380,000
IV Management fee (8%)							270,000
Total							3,650,000

No 61/ QD/2006 BTC of 2 Nov. 2006 stipulates that the professional training shall comply with the current spending limits of those funded by the state budget. Therefore, the above is adopted for the TOT.

Table E-9 Cost Breakdown of Inter-province Exchange Visits

a. Basis for Estimation:

Cost Norm: 526/QD-BNN-TC of 3 Mar 2009
 Participants: 30 forest users/ local households
 Venue: Inter-province/ inter project sites
 Type: Residential
 Duration: 3 days

b. Cost Breakdown

Items	Unit cost (1)	Unit1	Q'ty (2)	Unit2	Q'ty (3)	Unit3	Total cost (1 x 2 x 3)
I Lecturer/ facilitator							
1.1 Lecturer	200,000 / day		3	days	1	person	600,000
1.2 Lecturer Assistant	120,000 / day		3	days	1	person	360,000
1.3 Transportation for Lecturers	50,000 / trip		2	persons	3	trips	300,000
II Transportation (40 person/ bus)	3,000,000 / day		1	bus	3	days	9,000,000
III Material							
3.1 Meals	40,000 / person/ time		35	persons	1	times	1,400,000
3.2 Water	7,000 / person/ day		35	persons	1	days	245,000
IV Accommodation	120,000 / person/ day		35	persons	1	days	4,200,000
V Stipend	50,000 / person/ day		30	persons	1	days	1,500,000
Sub-total							17,605,000
VI Management fee (8%)							1,408,000
Total							19,013,000

No 61/ QD/2006 BTC of 2 Nov. 2006 stipulates that the professional training shall comply with the current spending limits of those funded by the state budget. Therefore, the above is adopted for the TOT.