Ministry of Agriculture and Rural Development
VIETNAM

Forest Carbon Partnership Facility (FCPF)

Carbon Fund

Emission Reductions Program Document (ER-PD)

Annexes 1 to 12

ER Program Name and Country: Vietnam

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Contents

1 Annex 1: Summary of the Financial Plan

	Item	Sub-item	Activity		Year 2018	Year 2019	Year 2020	Year 2021	Year 2022	Year 2023	Year 2024	Year 2025	Total (8 years)
1	**Costs**	**1(a) Implementation costs**	1. Province level cross-cutting activities and investments	USD	10.311.660	9.113.235	6.343.085	4.743.085	4.943.085	4.341.284	4.341.284	4.341.284	**48.478.003**
			2. Reducing deforestation / forest degradation component	USD	0	1.078.909	3.013.091	5.280.000	7.546.909	8.749.091	9.090.545	9.090.545	**43.849.091**
			3. Forest carbon stock enhancement component	USD	0	13.476.494	28.630.924	40.026.247	49.427.467	54.683.377	55.892.643	55.892.643	**298.029.794**
			4. Mangrove restoration and C enhancement component	USD	5.598.626	7.234.768	7.743.872	8.252.976	8.762.080	0	0	0	**37.592.322**
			5. Project management	USD	0	0	0	0	0	0	0	0	**0**
			Sub-total – Implementation costs		**15.910.286**	**30.903.407**	**45.730.972**	**58.302.309**	**70.679.541**	**67.773.752**	**69.324.472**	**69.324.472**	**427.949.210**
		1(b) Institutional costs	Project and administration management (PMU) costs	USD	610.050	590.400	497.050	397.250	363.400	355.400	355.400	363.400	**3.532.350**
			Reference level and Monitoring system costs	USD	0	0	0	0	0	0	0	0	**0**
			Benefit sharing mechanism & BSP costs	USD	0	0	0	0	0	0	0	0	**0**
			Safeguards costs	USD	0	0	0	0	0	0	0	0	**0**
			PPMU costs	USD	234.800	183.150	193.450	183.150	193.450	183.150	193.450	183.150	**1.547.750**
			Information sharing costs	USD	42.000	37.000	42.000	37.000	42.000	37.000	37.000	42.000	**316.000**
			Sub-total – Institutional costs		**886.850**	**810.550**	**732.500**	**617.400**	**598.850**	**575.550**	**585.850**	**588.550**	**5.396.100**

	Item	Sub-item	Activity		Year 2018	Year 2019	Year 2020	Year 2021	Year 2022	Year 2023	Year 2024	Year 2025	Total (8 years)
		1(c) Transaction costs	Project and administration management (PMU) costs	USD	0	0	0	0	0	0	0	0	**0**
			Reference level and Monitoring system costs	USD	219.450	0	1.058.100	0	172.200	0	0	1.022.100	**2.471.850**
			Benefit sharing mechanism & BSP costs	USD	90.650	0	47.100	0	64.200	0	0	64.200	**266.150**
			Safeguards costs	USD	303.200	291.200	306.200	297.200	232.200	148.700	148.700	153.700	**1.881.100**
			PPMU costs	USD	0	0	0	0	0	0	0	0	**0**
			Information sharing costs	USD	0	0	0	0	0	0	0	0	**0**
				USD									**0**
			Sub-total – Transaction costs		**613.300**	**291.200**	**1.411.400**	**297.200**	**468.600**	**148.700**	**148.700**	**1.240.000**	**4.619.100**
		Total costs: 1(a)+ 1(b) + 1(c)			**17.410.436**	**32.005.157**	**47.874.872**	**59.216.909**	**71.746.991**	**68.498.002**	**70.059.022**	**71.153.022**	**437.964.410**
2	**Sources of financing**	**2(a) National**		USD									**0**
			Governmental forest sector budget	USD	232.100	634.859	1.519.177	2.557.155	3.495.245	3.898.364	4.085.318	4.085.318	**20.507.536**
			Expected PFES funding	USD	509.389	1.047.171	2.051.868	2.552.829	3.103.236	2.963.935	3.040.679	3.097.040	**18.366.146**
			Private (State Forest Company)	USD	0	5.366.165	9.722.202	12.308.267	15.741.780	16.892.055	16.892.055	16.892.055	**93.814.580**
			Sub-total - national		**741.489**	**7.048.195**	**13.293.247**	**17.418.251**	**22.340.261**	**23.754.354**	**24.018.052**	**24.074.413**	**132.688.263**
		2 (b) International	Bilateral	KfW grant TA assume 50%	1.200.000	1.200.000	1.200.000	1.200.000	1.200.000	0	0	0	**6.000.000**
				Expected loan from KfW, assume 30% of a	3.000.000	3.000.000	3.000.000	3.000.000	3.000.000	0	0	0	**15.000.000**

	Item	Sub-item	Activity		Year 2018	Year 2019	Year 2020	Year 2021	Year 2022	Year 2023	Year 2024	Year 2025	Total (8 years)
				USD 50 million loan									
			Multilateral	UNDP + JICA II + SNV project Tanh Hoa	1.280.000	980.000	980.000	980.000	980.000	0	0	0	**5.200.000**
				Expected loan from WB	5.598.626	7.234.768	7.743.872	8.252.976	8.762.080	0	0	0	**37.592.322**
			Private	Investment Fund									**0**
				Equity									**0**
			Sub-total -international		**11.078.626**	**12.414.768**	**12.923.872**	**13.432.976**	**13.942.080**	**0**	**0**	**0**	**63.792.322**
		2 (c) Revenue from products & services	Revenue from REDD+ activities (e.g., sale of forests & agricultural products)	USD	0	4.852.386	9.367.262	16.879.700	27.178.678	44.961.392	62.339.980	76.355.448	**241.934.847**
		2(d) Revenue from emission reductions	Revenue from sale of Emission Reductions (not yet contracted, assume Carbon Fund	USD	5.000.000	6.000.000	10.101.896	0	17.910.450	0	0	70.952.138	**109.964.483**
				USD									**0**
				USD									**0**
				USD									**0**
			Sub-total: Revenue from products & services and ERs	USD	**5.000.000**	**10.852.386**	**19.469.157**	**16.879.700**	**45.089.128**	**44.961.392**	**62.339.980**	**147.307.586**	**351.899.330**
		Total financing sources: 2(a)+2(b)+2(c) +2(d)			**16.820.115**	**30.315.350**	**45.686.277**	**47.730.927**	**81.371.469**	**68.715.746**	**86.358.033**	**171.381.999**	**548.379.915**

	Item	Sub-item	Activity		Year 2018	Year 2019	Year 2020	Year 2021	Year 2022	Year 2023	Year 2024	Year 2025	Total (8 years)
3	Surplus or gap	Total financing source – Total costs			-590.321	-1.689.807	-2.188.595	-11.485.982	9.624.478	217.744	16.299.011	100.228.978	110.415.505
4	Options to address financing gap	4(a) Traditional sources – grants/ loans	Option 1	USD									0
			Option 2	USD									0
				USD									0
			Sub-total:		0	0	0	0	0	0	0	0	0
		4(a) Alternative sources - (e.g. guarantees /PES)	Option 1	USD									0
			Option 2	USD									0
				USD									0
			Sub-total:		0	0	0	0	0	0	0	0	0
		Total of options to address financing gap – 4(a)+4(b)			0	0	0	0	0	0	0	0	0
5	Sensitivity analysis	Annual cashflow (Source - Uses)											
		5.1. Costs	10% higher costs	USD	-2.331.365	-4.890.323	-6.976.082	-17.407.672	2.449.779	-6.632.056	9.293.109	93.113.676	66.619.064
			10% lower cost	USD	1.150.722	1.510.709	2.598.892	-5.564.291	16.799.177	7.067.544	23.304.913	107.344.280	154.211.946
			20% higher costs	USD	-4.072.409	-8.090.838	-11.763.569	-23.329.363	-4.724.921	-13.481.856	2.287.207	85.998.373	22.822.623

	Item	Sub-item	Activity		Year 2018	Year 2019	Year 2020	Year 2021	Year 2022	Year 2023	Year 2024	Year 2025	Total (8 years)
			20% lower cost	USD	2.891.766	4.711.224	7.386.379	357.400	23.973.876	13.917.345	30.310.815	114.459.582	**198.008.387**
		5.2. Financing source	10% more financing source	USD	1.091.690	1.341.728	2.380.033	-6.712.889	17.761.625	7.089.319	24.934.814	117.367.178	**165.253.497**
			10% less financing source	USD	-2.272.333	-4.721.342	-6.757.223	-16.259.074	1.487.331	-6.653.830	7.663.208	83.090.778	**55.577.514**
			20% more financing source	USD	2.773.701	4.373.263	6.948.660	-1.939.796	25.898.771	13.960.893	33.570.617	134.505.378	**220.091.488**
			20% less financing source	USD	-3.954.344	-7.752.877	-11.325.850	-21.032.167	-6.649.816	-13.525.405	-972.596	65.952.578	**739.522**
		5.3. Revenues	10% more revenues	USD	-831.810	-7.652.764	-13.534.927	-27.216.262	-8.206.871	-19.040.471	-1.485.043	90.885.323	**12.917.175**
			10% less revenues	USD	-1.831.810	-9.823.241	-17.428.758	-30.592.202	-17.224.696	-28.032.749	-13.953.039	61.423.806	**-57.462.691**
			20% more revenues	USD	-331.810	-6.567.525	-11.588.011	-25.528.292	-3.697.958	-14.544.332	4.748.955	105.616.082	**48.107.108**
			20% less revenues	USD	-2.331.810	-10.908.480	-19.375.674	-32.280.172	-21.733.609	-32.528.888	-20.187.037	46.693.047	**-92.652.624**

2 Annex 2: Plan for Updating Reference Level for 2005-2015

Currently, the reference level (RL) of North Central Coast (NCC) region has been developed for reference period of 2000 - 2010. This is consistent the the requirements of the Methodological Framework (a 10 year period ending no later than 2 years before the first TAP mission). However, it is recognized that in a dynamic landscape such as Vietnam, a more up-to-date Reference Period would be a better basis for planning the FCPF program and for establishing a current Reference Level. As for Vietnam, the first TAP mission was conducted in July 2016, therefore the end-date for RL for NCC should be no later than July 2014.

However, Vietnam has a long story of national forest inventory which started in 1990 and this is being implemented in a 5 year cycle. Considering availability of forest data and the consistency with national forest inventory, Vietnam has decided to use end date for RL was December 2015. This will provide for a shorter time interval between the end of the Reference Period and the start of the Performance Period. It also gives Vietnam the flexibility to use the existing forest cover map for 2005 to define the start of the Reference Period. Therefore, the reference period for RL for NCC in ER-P will be 2005 – 2015. This will require the creation of a NCC forest land cover map for the year 2015, using methods consistent with both the existing 2005 and 2010 maps, as well as the future MMR system. Concurrently, we will also define the 2015 forest cover map to be the base map, and will adjust boundaries on the 2005 and 2010 maps (where they exist) to correspond to the 2015 map, thereby addressing the issue of independence of maps leading to differencing errors.

This Annex provides a plan for updating RL for 2005 – 2015 and it is planned to be completed in 4 months and be finalized before June 2017. The current RL is used as interim RL for estimating emissions reduction targets.

2.1 Updating Activity Data

2.1.1 Methods

The “Object based” approach with the support of eCognition software will be applied to classify Landsat images into the 6 forest cover classes for the 6 NCC provinces. to produce final 2015 forest cover map. This 2015 map will be used as base map for FCPF activity data, to reference past and future forest cover maps.

Change detection using Landsat images and map overlay methods will be applied for registration of 2010 and 2005 forest cover map boundaries into the 2015 forest cover map, ensuring consistent parcel boundaries over time where such boundaries exist.

Map overlay method will also be used to develop land use change matrixes showing land use changes patterns for period 2005-2010 and 2010-2015. The AD is then calculated accordingly.

Olofsson’s method will be applied to assess the accuracy of forest change and accuracy assessment results are used to adjust the area of each forest change category in the period 2005-2010 and 2010-2015.

2.2 Activities

2.2.1 Data collection and image pre-processing

- Collecting Landsat images closest to three time spot 2015, 2010 and 2005 (hopefully using the same images as used for the original generation of the past maps);

- Collecting other available data sources (such as high resolution satellite images, sample plots and classified key conducted during NFIS implementation process); and
- Collecting relevant data and reports on the forest status and forest changes in the period 2010-2015 in NCC.

2.2.2 Establishment of 2015 forest cover (Based map)

a) Landsat image 2015 classification.

The Landsat images are classified by applying "Object based" approach with the support of eCognition software, including steps as following:

- Creating a training sample set;
- Selecting index used for classification and calculating threshold for each index;
- Running Landsat image classification; and
- Checking and verifying the classified result.

b) Updating classified result based on the image analysis

- Overlaying classified result with base map layers (roads, rivers, administrative boundaries);
- Based on the overlaid result, adjust polygon boundaries to match known geography; and
- Using high spatial resolution satellite images, sample plots as well as classification keys to improve the quality of classified results to create final forest cover map of 2015.

2.2.3 Registration of 2005 and 2010 maps to the new 2015 boundaries

The forest cover map 2015 will serve as the base map for past and future forest cover mapping under FCPF. As a first step, the boundaries on the 2005 and 2010 forest cover maps will be adjusted to correspond to the same boundaries on the 2015 map (where such boundaries exist). This will eliminate the problems arising from mismatching boundaries during the overlay process when mapping the forest change. The steps applied are as follows:

- Detecting forest cover change during the periods of 2010-2015 and 2005-2015 using Landsat images of 2005, 2010 and 2015;
- The polygon boundary of forest cover map 2015 in the area of no change (or change within small (predefined) threshold) will be kept as polygon boundary for forest cover map 2010 or 2005 correspondingly;
- The polygon boundary and class name on the forest cover map 2010 and 2005 of the changed area during 2010-2015 and 2005-2015 correspondingly will be adjusted based on the Landsat image classification/change detection results and reference data; and
- Overlay forest cover maps 2015, 2010, 2005 for final check and error correction.

A pilot test will be run for a small test area covering all the steps 1.2.1; 1.2.2; 1.2.3 to refine the proposed workflow, develop more detail technical specification and to

assess the magnitude of the registration and boundaries issues for the forest cover maps 2005 and 2010.

2.2.4 Calculation of activity data for period 2005 – 2015

- Overlaying land cover maps in the year of 2010 and 2015 to generate 2010-2015 land use change matrix for AD; and
- Overlaying land cover maps in the year of 2005 and 2010 to generate 2005-2010 land use change matrix for AD

2.2.5 Accuracy assessment and AD adjustment

- Sampling designing;
- Checking and verifying sample set;
- Calculating forest changes accuracy following the methods of Olofsson 2012; and
- Using accuracy assessment results to adjust AD.

2.3 Updating emissions factors

Apply the same methods used for estimating emission and removal factors for period 2000 – 2010. The main change is emission factors (tCO_2e/ha) by forest type for the NCC region using NFIMAP Cycle 3. These will be used to update the estimates of Emissions and Removals for forest land remaining in the same forest class from 2005-2010. Root to Shoot ratio (RS) will be updated using default value of IPCC 2006. The value of RS will be based on the biomass value (i.e, < 125 tdm/ha and > 125 tdm/ha).

2.4 Updating reference level

Total emissions and removals for 2005 – 2015 are aggregated based on 2005 – 2010 and 2010 – 2015. Emission factors calculated using NFIMAP cycle 3 &4 are used for estimation of emissions and removals for 2005 – 2010 and emission factors using NFIMAP cycle 4 are applied to estimate emissions and removals for 2010 – 2015. The use of emission factors calculated based on different NFIMAP data is consistent with national RL submitted to UNFCC.

2.5 Implementation plan

Total time for updating RL for 2005 – 2015 is 4 months. The followings indicate timeline for implementing key activities.

ID	Activities	Month 1		Month 2		Month 3		Month 4	
1	**Updating AD**								
1.1	Data collection and images pre-processing	X							
1.2	Establishment of land cover maps of 2015		X	X	X	X			
1.3	Pilot assessment of the work on the registration of 2005 and 2010 maps to the new 2015 boundaries					X	X	X	
1.4	Develop land use matrixes and calculation of activity data in						X	X	

	period 2005 – 2015								
1.5	Accuracy assessment and adjustment of AD							X	X
2	**Updating emission factors**								
2.1	Calculation of carbon stock using NFIMAP cycle 3 data	X	X	X	X				
2.3	Updating EFs for 2005-2010					X	X		
3	**Updating reference level 2005-2015**								
3.1	Calculation of emissions & removals 2005 - 2010						X	X	
3.2	Analysis and reporting							X	X

3 Annex 3: Priority areas for site-level interventions in the ER-P Accounting Area

3.1 Scaling of participating entities and priority districts and communes for REDD+ implementation

Table 3.1 Districts and provinces in the ER-P

Scaling of participating entities	2017	2018	2019	2020	2021
Protection Forest Management Board (PFMB)	15	17	10	8	0
Special Forest Use Protection Forest Management Board (SUF PFMB)	8	6	0	0	0
State Forest Company (SFC)	9	4	0	0	0

Province	Number of district selected	Number of District in Prv	Number of commune selected	Number of Commune in Prv
Ha Tinh	6	12	31	262
Nghe An	11	20	77	478
Quang Binh	7	7	54	159
Quang Tri	9	9	33	139
Thanh Hoa	11	27	78	630
Thua Thien Hue	6	9	48	152
	50	**84**	**321**	**1820**

Table 3.2 Summary of the proposed participating districts, communes and management boards

Province	Participating districts	Participating communes	Management Boards
Thanh Hoa	14 participating districts, including: Muong Lat, Quan Hoa, Quan Son, Lang Chanh Ba Thuoc, Thuong Xuan, Nhu Xuan, Nhu Thanh, Cam Thuy, Ngoc Lac, Nga Son, Hau Loc, Tho Xuan, Thach Thanh	124 Participating Communes: Muong Lat (8), Quan Hoa (15), Quan Son (11), Lang Chanh (10), Ba Thuoc (19), Thuong Xuan (13), Nhu Xuan (14), Nhu Thanh (7), Cam Thuy (11), Ngoc Lac (7), Nga Son (1), Hau Loc (1), Tho Xuan (2), Thach Thanh (5).	Ben En, Xuan Lien, Pu Hu, Pu Luong
Nghe An	13 districts, including Anh Sơn, Con Cuông, Diễn Châu, Đô Lương, Kỳ Sơn, Nghĩa Đàn, Quế Phong, Quỳ Châu, Quỳ Hợp, Tân Kỳ, Thanh Chương, Tương Dương, Yên Thành	89 communes in 13 districts: Anh Sơn (8), Con Cuông (10), Diễn Châu (2), Đô Lương (2), Kỳ Sơn (7), Nghĩa Đàn (3), Quế Phong (12), Quỳ Châu (9), Quỳ Hợp (7), Tân Kỳ (2), Thanh Chương (3), Tương Dương (20), Yên Thành (4)	?
HaTinh	5 Huong Son, Huong Khe, Vu Quang, Cam Xuyen and Ky Anh (including Ky Anh town)	22 key communes with an additional 16 also proposed for participation (38+)	Vu Quang NP, Ke Go NR (2) Huong Son SFC, Chuc A SFC, (2) Ngan Sau PFMB Song Tiem PFMB; Southern Ha Tinh PFMB (3)
Quan Binh	6 districts Bo Trach, Le Thuy, Minh Hoa, Quang Ninh, Quang Trach, Tuyen Hoa	19 communes including: Thuong Trach, Tan Trach, Phuc Trach (Bo Trach district); Lam Thuy, Kim Thuy, Ngan Thuy (Le Thuy district); Thuong Hoa, Dan Hoa, Hoa Son, Hong Hoa, Tan Hoa (Minh Hoa district); Truong Son, Truong Xuan (Quang Ninh district); Quang Hop (Quang Trach district); Cao Quang, Kim Hoa, Lam Hoa, Dong Hoa, Thuan Hoa (Tuyen Hoa district)	Phong Nha Ke Bang National Park; 7 PFMB (Dong Chau, Ba Ren, Long Dai, Minh Hoa, Nam Quang Binh, Quang Trach, Tuyen Hoa); 9 Forestry Branches (SFCs) (Dong Hoi, Bong Lai, Bo Trach, Khe Giua, Kien Giang, Minh Hoa, Quang Trach, Rung Thong, Truong Son)

Province	Participating districts	Participating communes	Management Boards
Quang Tri	7 Districts Huong Hoa, Hai Lang, Trieu Phong, Gio Linh, Vinh Linh, Dak Rong; Cam Lo	Enhancement area (large timber): Huc Nghi, Huong Hiep, Dak Rong, Ta Long (Dak Rong), Huong Linh, Huong Lap, Huong Son, Huong Phung, Huong Viet (Huong Hoa), Vinh O (Vinh Linh), Linh Thuong (Gio Linh) Restoration enrichment: Huc Nghi, Huong Hiep, Dak Rong, Ta Long (Dak Rong), Huong Linh, Huong Lap, Huong Son, Huong Hung, Huong Viet Communes (Huong Hoa District), Vinh O Commune (Vinh Linh District), Linh Thuong Commune (Gio Linh District) Deforestation and Degradation Huc Nghi, Huong Hiep, A Bung, Hai Phuc, Ta Rut, Ba Nang (Dak Rong), Huong Linh, Huong Lap, Ba Tang (Huong Hoa), Vinh Ha (Vinh Linh).	Ben Hai Protection forest MB; Thach Han Protection forest MB; Dak Rong Protection forest MB; Dak Rong SUF MBs; Bac Huong Hoa SUF MB Ben Hai SFC; Duong 9 SFC; Trieu Hai SFC
Thua Thien Hue	3 districts A Luoi, Nam Dong, Phong Dien	35 communes: 21 communes in A Luoi District, 11 communes in Nam Dong District Three communes in Phong Dien District	11 large forest owners SUFs MB 3: Bach Ma NP, Phong Dien NR, Sao La Reserve PFMBs 6 Song Bo, A Luoi, Nam Dong, Song Huong, Huong Thuy Huong Thuy PFMB Bac Hai Van PFMB SFCs 4 Phong Dien, Nam Hoa, Tien Phong Phu Loc
Total	**14+13+5+6+7+3=48**	**124+89+38+22+17+35=325**	**SUFs: 4+?+2+1+2+3=12** **PFMB:?+?+3+7+3+6= 19** **SCF:?+?+2+9+3+4=18**

3.2 Project areas by intervention and province

Table 3.3 PFMB area under management per implementation entity after 5 years (ha)

PFMB models	Thua Thien Hue	Quang Tri	Quang Binh	Ha Tinh	Nghe An	Thanh Hoa	Total	Small holder
1. Forest protection of existing natural forest through contracts	880	2,200	880	440	880	660	5,940	
2. Natural assisted regeneration of medium quality forest / avoiding degradation (no planting)	800	1,320	660	880	880	660	5,200	
3. Natural regeneration and enrichment planting of poor natural forest	1200	1200	1200	1,200	1,200	1200	7,200	720
4. Afforestation/Reforestation - Acacia long rotation model (12 years)	480	600	280	400	200	160	2,120	212
5. Afforestation/Reforestation - Acacia with mixed species (20 years) (50% native; 50% Acacia)	480	600	280	400	200	160	2,120	212
6. Transformation of Acacia short rotation to long-rotation (12 years)	540	1,100	400	880	400	480	3,800	380
7. Transformation of Acacia short rotation to long rotation mixed native species (20 years)	480	1,000	320	800	320	440	3,360	336
8. Afforestation/Reforestation - Melia azedarach (8-year rotation)	0	0	0	0	240	0	240	24
sub total	4,860	8,020	4,020	5,000	4,320	3,760	29,980	
Plantation land	3,180	4,500	2,480	3,680	2,560	2,440	18,840	1,884

Table 3.4 SUF MB area under management per implementation entity after 5years (ha)

SUF MB models	Thua Thien Hue	Quang Tri	Quang Binh	Ha Tinh	Nghe An	Thanh Hoa	Total
1. Forest protection of existing natural forest through contracts	440	1,120	720	120	280	600	3,280
2. Natural assisted regeneration of medium quality forest / avoiding degradation (no planting)	360	440	1,200	440	320	600	3,360
3. Natural regeneration and enrichment planting of poor natural forest	1200	800	800	880	880	880	5,440
sub total	2,000	2,360	2,720	1,440	1,480	2,080	12,080
Plantation land	1,200	800	800	880	880	880	5,440

Table 3.5 SFC area under management per implementation entity after 5 years (ha)

SFC models	Thua Thien Hue	Quang Tri	Quang Binh	Ha Tinh	Nghe An	Thanh Hoa	Total
1. Forest protection of existing natural forest through contracts	720	1,880	2,000	400	200	800	6,000
2. Natural assisted regeneration of medium quality forest / avoiding degradation (no planting)	600	720	3,200	1,600	200	800	7,120
3. Natural regeneration and enrichment planting of poor natural forest	600	600	880	1,200	720	800	4,800
4. Afforestation/Reforestation - Acacia long rotation model (12 years)	400	320	600	600	200	200	2,320
5. Afforestation/Reforestation - Acacia with mixed species (20 years) (50% native; 50% Acacia)	400	320	600	600	200	200	2,320
6. Transformation of Acacia short rotation to long-rotation (12 years)	480	1,240	520	320	680	480	3,720
7. Transformation of Acacia short rotation to long rotation mixed native species (20 years)	480	1,240	480	320	480	480	3,480
8. Afforestation/Reforestation - Melia azedarach (8-year rotation)	0	0	0	0	200	0	200
sub total	3,680	6,320	8,280	5,040	2,880	3,760	29,960
Plantation land	2,360	3,720	3,080	3,040	2,480	2,160	16,840

3.2.1 Priority districts and communes Thanh Hoa province

Table 3.6 List of communes prioritized to reduce deforestation in Thanh Hoa Province from 2016-2020

District	Commune	Total
Muong Lat	Tam Chung, Ten Tan, Muong Ly, Quang Chieu, Pu Nhi, Nhi Son, Muong Chanh, Trung Ly	8
Quan Hoa	Thanh Xuan, Trung Son, Hien Kiet	3
Quan Son	Son Ha, Na Meo, Son Dien	3
Lang Chanh	Tam Van, Dong Luong, Giao An, Giao Thien, Tan Phu, Yen Khuong, Yen Thang, Tri Nang, Lam Phu	9
Ba Thuoc	Dien Quang, Luong Trung, Luong Ngoai, Ai Thuong, Dien Thuong, Dien Lu, Ha Trung	7
Ngoc Lac	My Tan, Thach Lap, Ngoc Khe, Quang Trung, Phung Giao, Minh Son, Ngoc Son	7
Thuong Xuan	Xuan Chinh, Xuan Cao, Luan Thanh, Luan Khe, Xuan Thang, Xuan Loc, Xuan Le, Yen Nhan, Van Xuan, Luong Son, Bat Mot	11
Nhu Xuan	Cat Van, Thanh Xuan, Thanh Hoa, Thanh Phong, Thanh Lam, Thanh Son, Thuong Ninh, Xuan Binh, Hoa Quy, Tan Binh, Binh Luong, Xuan Hoa	12
Cam Thuy	Cam Long, Cam Thanh, Cam Son, Cam Chau, Cam Quy	5
Thach Thanh	Thanh Van, Thanh Tam, Thach Lam	3
Total		**68**

Table 3.7 List of prioritized communes in Thanh Hoa to reduce forest degradation

District	Commune	Total
Muong Lat	Trung Ly	1
Quan Hoa	Hien Kiet	1
Quan Son	Trung Thuong, Trung Tien, Tam Thanh, Son Thuy, Tam Lu	5
Lang Chanh	Yen Khuong, Yen Thang, Tri Nang, Lam Phu	4
Thuong Xuan	Xuan Le, Bat Mot	2
Nhu Xuan	Xuan Hoa	1
Cam Thuy	Cam Quy	1
Total		**15**

3.2.2 Priority districts and communes for REDD+ in Nghe An province

Table 3.8 List of selected commune priority for activities to reduce deforestation in Nghe An period 2016-2020

No	District	Commune	Total
1	Anh Sơn	Bình Sơn, Đức Sơn, Hùng Sơn, Hội Sơn, Thọ Sơn, Tường Sơn	6
2	Con Cuông	Bình Chuẩn, Cam Lâm, Chi Khê, Đôn Phục, Mậu Đức, Thạch Ngàn	6
3	Kỳ Sơn	Chiêu Lưu, Hữu Kiệm, Hữu Lập, Nậm Cắn, Phà Đánh, Tà Cạ, Tây Sơn	7
4	Nghĩa Đàn	Nghĩa Lạc, Nghĩa Lợi, Nghĩa Mai	3
5	Quế Phong	Căm Muộn,Châu Kim, Đồng Văn, Hạch Dịch, Mường Ngọc, Nậm Giải, Quang Phong, Thông Thụ, Tiền Phong, Tri Lễ	12
6	Quỳ Châu	Châu Bình, Châu Bính, Châu Hạnh, Châu Hoàn, Châu Hội, Diễn Lãm, Châu Thuận, Châu Nga	8
7	Quỳ Hợp	Châu Cường, Châu Thành, Nam Sơn	2
8	Tân Kỳ	Đồng Văn, Nghĩa Hành	2
9	Thanh Chương	Hạnh Lâm,Thanh Đức, Thanh Thủy	3
10	Tương Dương	Hữu Khuông, Lưỡng Minh, Lưu Kiền, Mai Sơn, Nga My, Nhôn Mai, Tam Đình, Tam Hợp, Tam Thái, Xá Lượng, Xiềng My, Yên Hòa, Yên Na, Yên Thắng, Tam Quang, Yên Tĩnh	15
Total			**64**

Table 3.9 List of selected communes priority for activities to reduce forest degradation in Nghe An period 2016-2020

No	District	Commune	Total
1	Anh Sơn	Phúc Sơn	1
2	Con Cuông	Bình Chuẩn, Châu Khê, Lục Dạ, Môn Sơn	4
3	Kỳ Sơn	Chiêu Lưu, Hữu Kiệm, Mỹ Lý, Phà Đánh	4
4	Nghĩa Đàn	Nghĩa Lạc	1
5	Quế Phong	Căm Muộn, Châu Kim, Đồng Văn, Hạnh Dịch, Nậm Giải, Quang Phong, Thông Thụ, Tiền Phong, Tri Lễ	9
6	Quỳ Châu	Châu Bình, Châu Bính, Châu Hoàn	3
7	Quỳ Hợp	Châu Cường	1
8	Thanh Chương	Thanh Thủy	1
9	Tương Dương	Hữu Khuông, Lưu Kiền, Nhôn Mai, Tam Đình, Tam Thái, Yên Hòa, Yên Na, Yên Thắng, Tam Quang	9
Total			**33**

3.2.3 Priority districts and communes for REDD+ in Ha Tinh province

Results of priority zoning show that selected communes/forest owners mainly belong to districts of Huong Son, Huong Khe, Vu Quang, Cam Xuyen and Ky Anh (including Ky Anh town). In which:

The number of chosen preferred communes for implementing the solution group of reduction of deforestation and forest degradation is 45, in which, 11 are the most preferred communes including: Son Kim 1, Son Hong, Son Kim 2, Son Tay (Huong Son); Phu Gia, Hoa Hai, Huong Lam (Huong Khe); Cam My (Cam Xuyen) and Co Dam, Xuan Vien, Xuan Linh (Nghi Xuan).

The number of chosen preferred communes for implementing the solution group of enhancement of natural forest quality and area is 47, in which, 12 are the most preferred communes including: Son Kim 1, Son Hong, Son Kim 2 (Huong Son); Phu Gia, Hoa Hai, Huong Trach, Huong Minh, Huong Quang (Huong Khe), Cam My (Cam Xuyen); Ky Lac (Ky Anh) Thuan Thien, Thien Loc (Can Loc).

The number of chosen preferred communes for implementing the solution group of plantation development is 40, in which,11 are the most preferred communes including: Son Kim 1, Son Tay (Huong Son); Phu Gia, Hoa Hai, Loc Yen (Huong Khe), Ky Lac, Ky Son, Ky Tay, Ky Tan (Ky Anh) and Xuan Vien, Xuan Linh (Nghi Xuan).

In the communes preferably selected for conducting activities of REDD+, 22 communes have been chosen for implementing all three solution groups and 16 communes have been selected for conducting two different solution groups (*for more details, see priority zoning map for conducting activities of REDD+ and annex 06*).

To conclude, selected communes are mainly communes with large areas of natural forests and plantations. These communes have great potential in conducting groups of priority solutions such as: reduction of deforestation and forest degradation; enhancement of natural forest quality and area; plantation development (reforestation). 22 communes accomplish all three preferred solution groups, 16 communes conduct two different priority solution groups, and 08 communes implement one group of priority solution. In addition, almost all selected communes have entire or a part of forestland locating in great forest owners such as: Huong Son forestry company, Chuc A forestry company, Vu Quang national park, Ke Go nature reserve, management board of Ngan Sau protection forest, management board of Song Tiem protection forest, and management board of Southern Ha Tinh protection forest. Therefore, when conducting activities of REDD+, depending on specific conditions, it is able to implement activities with subjects of forest owners or households, groups of households, and communities in selected communes.

3.2.4 Priority districts and communes for REDD+ in Quang Binh province

The results of analysis of spatial data and consultation in Quang Binh Province have identified 19 priority communes of 6 districts for the REDD+ implementation in accordance with five Contents: Reduction of deforestation, reducing forest degradation, conservation of carbon stocks, enhance carbon stocks and sustainable forest management.

Table 3.10 Priority districts and communes in Quang Binh

District	Commune	Natural land area (ha)	Forest area (ha)	Reduction of deforestation	Reducing forest degradation	Carbon conservation	Carbon enhance	Sustainable forest management
Bo Trach	Thuong Trach	74,709	74,330		x	x	x	
Bo Trach	Tan Trach	35,227	35,209			x		
Bo Trach	Phuc Trach	5,783	3,981			x		
Le Thuy	Lam Thuy	22,767	22,308	x	x		x	x
Le Thuy	Kim Thuy	48,835	47,164	x	x		x	x
Le Thuy	Ngan Thuy	16,153	15,314	x			x	x
Minh Hoa	Thuong Hoa	35,294	34,482	x	x	x		x
Minh Hoa	Dan Hoa	35,649	34,807	x	x	x	x	
Minh Hoa	Hoa Sơn	18,056	17,099		x	x		x
Minh Hoa	Hong Hoa	7,132	6,766				x	
Minh Hoa	Tan Hoa	7,119	6,103				x	
Quang Ninh	Truong Son	77,985	77,400	x	x		x	x
Quang Ninh	Truong Xuan	15,540	14,484				x	
Quang Trach	Quang Hop	11,302	9,481				x	
Tuyen Hoa	Cao Quang	11,644	10,392	x	x		x	
Tuyen Hoa	Kim Hoa	18,209	17,026	x	x		x	
Tuyen Hoa	Lam Hoa	10,083	9,787	x	x		x	
Tuyen Hoa	Đong Hoa	5,996	5,200	x			x	
Tuyen Hoa	Thuan Hoa	4,464	3,885				x	

3.2.5 Priority districts and communes for REDD+ in Quang Tri province

Provisional only for Quang Tri as work is in progress.

- Seven districts: Huong Hoa, Hai Lang, Trieu Phong, Gio Linh, Vinh Linh, Dak Rong; Cam Lo;
- MB and SFCs: Dak Rong SUF MBs; Bac Huong Hoa SUF MB;
- Ben Hai Protection forest MB; Thach Han Protection forest MB; Dak Rong Protection forest MB;
- Ben Hai SFC; Duong 9 SFC; Trieu Hai SFC;
- Enhancement area (large timber):

  Huc Nghi, Huong Hiep, Dak Rong, Ta Long (Dak Rong), Huong Linh, Huong Lap, Huong Son, Huong Phung, Huong Viet (Huong Hoa), Vinh O (Vinh Linh), Linh Thuong (Gio Linh);
- Restoration enrichment:

Huc Nghi, Huong Hiep, Dak Rong, Ta Long (Dak Rong), Huong Linh, Huong Lap, Huong Son, Huong Hung, Huong Viet Communes (Huong Hoa District), Vinh O Commune (Vinh Linh District), Linh Thuong Commune (Gio Linh District).

- Deforestation and Degradation

Nine districts: Huong Hoa, Hai Lang, Trieu Phong, Gio Linh Vinh Linh, Dak Rong, Cam Lo;

Huc Nghi, Huong Hiep, A Bung, Hai Phuc, Ta Rut, Ba Nang (Dak Rong), Huong Linh, Huong Lap, Ba Tang (Huong Hoa), Vinh Ha (Vinh Linh).

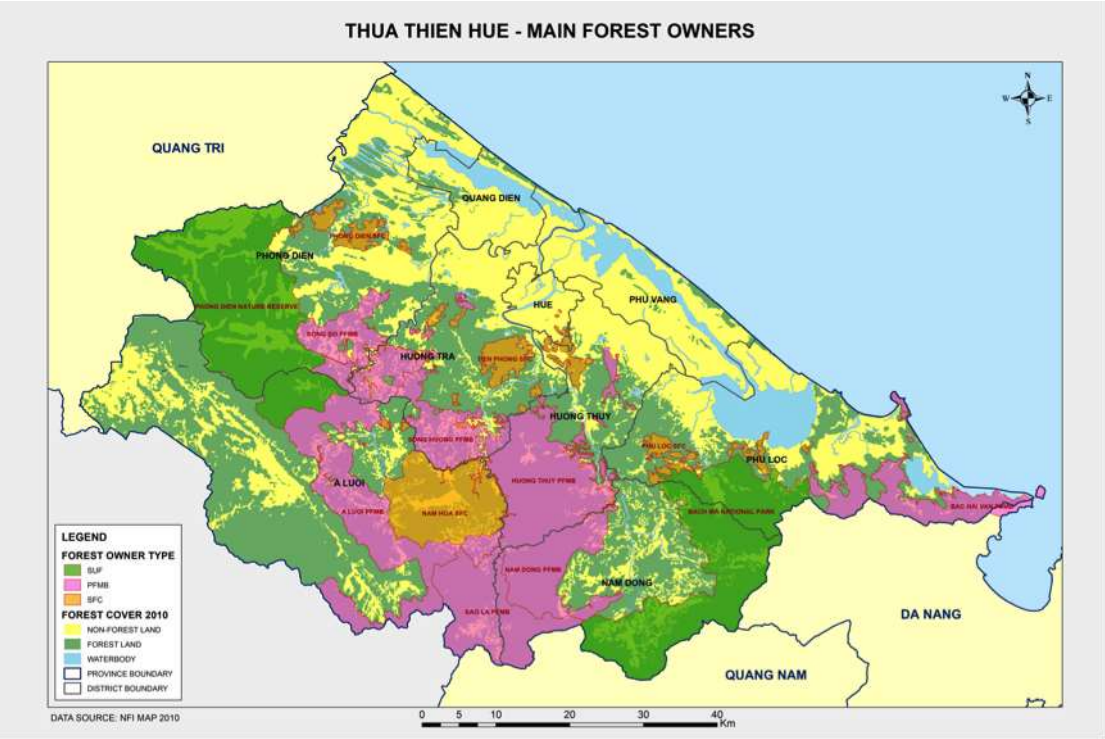
3.2.6 Priority Districts and communes in Thua Thien Hue

Thirty-five (35) communes: all (21) communes in A Luoi District, all (11) communes in Nam Dong District, and Three communes in Phong Dien District. Also the area is covered by 13 large forest owners:

Table 3.11 Major forest land owners proposed to be involved in the ER-P in TT Hue

SUF MBs	PFMBs	SFCs
Bach Ma National Park MB Phong Dien Nature Reserve MB Sao La Reserve MB	Song Bo PFMB A Luoi PFMB Nam Dong PFMB Song Huong PFMB Huong Thuy PFMB Bac Hai Van PFMB	Phong Dien SFC Nam Hoa SFC Tien Phong SFC Phu Loc SFC

Figure 3.1 Thua Thien Hue showing the main forest owners



4 Annex 4: Determination of reversal set-aside in the buffer

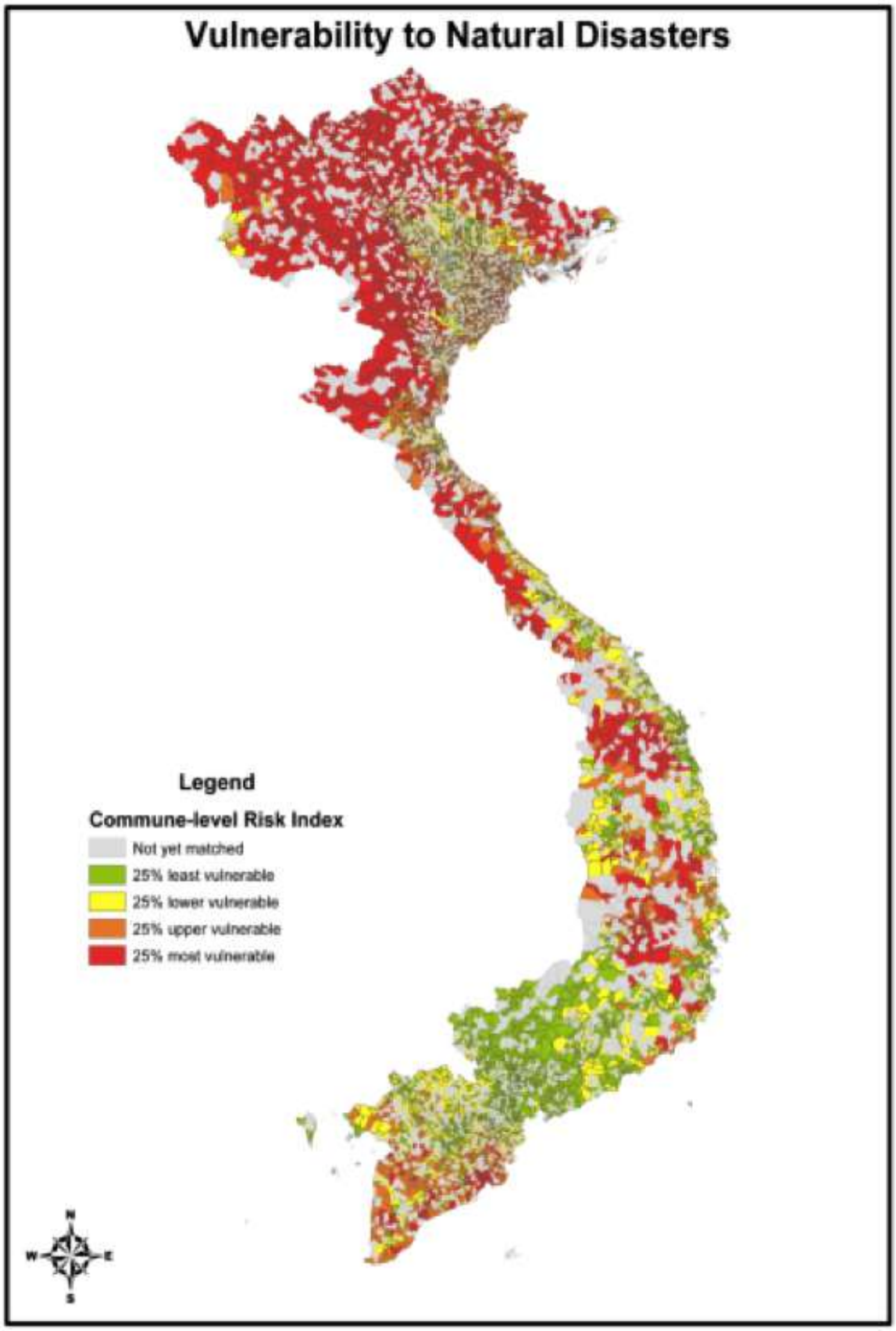
4.1 Set-aside percentage

Table 4.1 Determination of reversal set-aside percentage (18%)

Risk factor	Example of risk indicators		Discount	Resulting reversal risk set aside %		Actual Vietnam
Default risk	Not applicable, fixed minimum amount	Experience in Vietnam	10%	**Not applicable**	10%	10%
A. Lack of broad and sustained stakeholder support	Are stakeholders aware of, and/or have positive experience with FGRM, benefit sharing plans etc. or similar instruments in other contexts? Have occurrences of conflicts over land and resources been addressed?	Yes stakeholders are increasingly aware of FGRM and benefit sharing and have the example of PFES Yes in general most land disputes are solved at the commune level	10%	Reversal Risk is considered high: 0% discount; OR	10%	
				Reversal Risk is considered medium: 5% discount; OR	5%	
				Reversal Risk is considered low: 10% discount	0%	0%
B. Lack of institutional capacities and/or ineffective vertical/cross sectoral coordination	Is there a track record of key institutions in implementing programs and policies? Is there experience of cross-sectoral cooperation? Is there experience of collaboration between different levels of government?	Yes Yes Yes	10%	Reversal Risk is considered high: 0% discount; OR	10%	
				Reversal Risk is considered medium: 5% discount; OR	5%	5%
				Reversal Risk is considered low: 10% discount	0%	
C. Lack of long term effectiveness in addressing underlying drivers	Is there experience in decoupling deforestation and degradation from economic activities? Is relevant legal and regulatory environment conducive to REDD+ objectives?	Yes Yes	5%	Reversal Risk is considered high: 0% discount; OR	5%	
				Reversal Risk is considered medium: 2% discount; OR	3%	
				Reversal Risk is considered low: 5% discount	0%	0%
D. Exposure and vulnerability to natural disturbances	Is the Accounting Area vulnerable to fire, storms, droughts, etc? Are there capacities and experiences in effectively preventing natural disturbances- or mitigating1 their impacts?	Yes, no increase is forecast approximately 1-2 per year is possible,but most damage is to plantations near the sea, those planted on wetland and to young trees Yes	5%	Reversal Risk is considered high: 0% discount; OR	5%	
				Reversal Risk is considered medium: 2% discount; OR	3%	3%
				Reversal Risk is considered low: 5% discount	0%	

Actual Reversal Risk Set-Aside Percentage: 10+(Result A+ Result B+ Result C+ Result D) = 10+5+3=18%

Figure 4.1 Ranking of communes by vulnerability to disasters



Source: Lê Đặng Trung, Indochina Research and Consulting June 2012

5 Annex 5: Methodological Framework criterion and cross referenced to the ER-PD

Table 5.1 Methodological Framework criterion cross-referenced to sections in the ER-PD

Mythological framework Criteria	Criteria	Reference in the Text
2. Level of Ambition Criteria 1 – 2	Criterion 1: The proposed ER Program is ambitious, demonstrating the potential of the full implementation of the variety of interventions of the national REDD+ strategy, and is implemented at a jurisdictional scale or programmatic scale.	Section 2.2 page 22,23 on
	Criterion 2: The Accounting Area matches a government designated that is of significant scale.	Section 3.1 page 31,32
3. Carbon Accounting	Criterion 3: The ER Program can choose which sources and sinks associated with any of the REDD+ Activities will be accounted for, measured, and reported, and included in the ER Program Reference Level. At a minimum, ER Programs must account for emissions from deforestation. Emissions from forest degradation also should be accounted for where such emissions are significant.	Sections 7.1 and 7.2 pages 96, 97; Sections 8.1, 8.2, 8.3, 8.3.2, 8.4 pages 98 -110; Annex 2
3 (a) Scope and methods	Criterion 4: The ER Program should account for, measure, and report, and include in the ER Program Reference Level, significant Carbon Pools and greenhouse gases, except where their exclusion would underestimate total emission reductions.	Sections 7.1 and 7.2 pages 96, 97
Criteria 3 - 6	Criterion 5: The ER Program uses the most recent Intergovernmental Panel on Climate Change (IPCC) guidance and guidelines, as adopted or encouraged by the Conference of the Parties as a basis for estimating forest related greenhouse gas emissions by sources and removals by sinks	Sections 7, 8 and Annex 2
	Criterion 6: Key data and methods that are sufficiently detailed to enable the reconstruction of the Reference Level, and the reported emissions and removals (e.g., data, methods and assumptions), are documented and made publicly available online. In cases where the country's or ER Program's policies exempt sources of information from being publicly disclosed or shared, the information should be made available to independent reviewers and a rationale is provided for not making these data publicly available. In these cases, reasonable efforts should be made to make summary data publicly available to	Section 8 and Annex 2
3 (b) Uncertainties Criteria 7 - 9	Criterion 7: Sources of uncertainty are systematically identified and assessed in Reference Level setting and Measurement, Monitoring and reporting.	Section 12, 12.1.1, 12.1.2, 12.1.3, 12,1 12.2.1 pages 131- onwards
	Criterion 8: The ER Program, to the extent feasible, follows a process of managing and reducing uncertainty of activity data and emission factors used in Reference Level setting and Measurement, Monitoring and reporting.	Section 9
	Criterion 9: Uncertainty of activity data and emission factors used in Reference Level setting and Measurement, Monitoring and reporting is quantified in a consistent way, so that the estimation of emissions, removals and Emission Reductions is comparable among ER Programs i.	Section 12.2 12.2.1 Pages 135
3 (c) Reference Level Criteria 10 - 13	Criterion 10: The development of the Reference Level is informed by the development of a Forest Reference Emission Level or Forest Reference Level for the UNFCCC.	Section 8 page 98
	Criterion 11: A Reference Period is defined.	Section 8.1 pages 98
	Criterion 12: The forest definition used for the ER Program follows available guidance from UNFCCC decision 12/CP.17.	Section 8.2.1 pages 98
	Criterion 13: The Reference Level does not exceed the average annual historical emissions over the Reference Period. For a limited set of ER Programs, the Reference Level may be adjusted upward by a limited amount above average annual historical emissions. For any ER Program, the Reference Level may be adjusted downward.	Section 8.3.1 page 100
3 (d) Reference Level, Monitoring & Reporting on Emission Reductions Criteria 14-16	Criterion 14: Robust Forest Monitoring Systems provide data and information that are transparent, consistent over time, and are suitable for measuring, reporting and verifying emissions by sources and removals by sinks, as determined by following Criterion 3 within the proposed Accounting Area.	Section 9 Page
	Criterion 15: ER Programs apply technical specifications of the National Forest Monitoring System where possible.	Sections 9.2.3, 9.3 pages 120, 121,122
	Criterion 16: Community participation in Monitoring and reporting is encouraged and used where appropriate.	Sections, 2.2.1; 4.1.10; 4.3.2; 4.3.4; 4.4 6.2.3, 16.1 pages 23, 55, 61, 62, 72, 94, 170; Annex 1, section 2
3 (e) Accounting for Displacement (leakage)	Criterion 17: The ER Program is designed and implemented to prevent and minimize potential Displacement	Section 10
3 (f) Accounting for Reversal Criteria 18 – 21	Criterion 18: The ER Program is designed and implemented to prevent and minimize the risk of Reversals and address the long-term sustainability of ERs.	Section 11
	Criterion 19: The ER Program accounts for Reversals from ERs that have been transferred to the Carbon Fund during the Term of the ERPA	Sections, 11.1; 11.3; 11.4 13, 13.1 pages 138
	Criterion 20: The ER Program, building on its arrangements put in place during the readiness phase and during the Term of the ERPA, will have in place a robust Reversal management mechanism to address the risk of Reversals after the Term of the ERPA.	As above
	Criterion 21: The ER Program monitors and reports major emissions that could lead to Reversals of ERs transferred to the Carbon Fund during the Term of the ERPA.	As above, section 9; 9.2.2;
3 (g) Accounting for Ers Criteria 22 - 23	Criterion 22: Net ERs are calculated	Section 13; Annex 2 Section 6; Annex 4
	1. Subtract the reported and verified emissions and removals from the Reference Level.	
	2. Set aside a number of ERs from the result of step 1, above, in a buffer reserve. This amount reflects the level of uncertainty associated with the estimation of ERs during the Term of the ERPA. The amount set aside in the buffer reserve is determined using the following conservativeness factors for deforestation:	
	3. Set aside a number of ERs in the ER Program CF Buffer or other Reversal management mechanism created or used by an ER Program to address Reversals.	

Table 7.1 Cont.

Mythological framework Criteria	Criteria	Reference in the Text
4 Safeguards		
Actions undertaken to meet WB and Cancun Safeguards Criteria 24-26	Criterion 24: The ER Program meets the World Bank social and environmental safeguards and promotes and supports the safeguards included in UNFCCC guidance related to REDD+.	Section 14; 14.1 pages143
	Criterion 25: Information is provided on how the ER Program meets the World Bank social and environmental safeguards and addresses and respects the safeguards included in UNFCCC guidance related to REDD+, during ER Program implementation.	Section 14.1; 14.2 pages 143, 149
	Criterion 26: An appropriate Feedback and Grievance Redress Mechanism (FGRM) developed during the Readiness phase or otherwise exist(s), building on existing institutions, regulatory frameworks, mechanisms and capacity.	Section 14.3; pages 150
5 Sustainable Program Design and Implementation		
5 (a) Drivers and Land Resource Tenure Assessment Criteria 27-28	Criterion 27: The ER Program describes how the ER Program addresses key drivers of deforestation and degradation.	Section 4.3; Annex 4 Section 1;
	Criterion 28: The ER Program has undertaken and made publicly available an assessment of the land and resource tenure regimes present in the Accounting Area.	Not yet
5 (b) Benefit sharing Criteria 29 – 33	Criterion 29: The ER Program provides a description of the benefit sharing arrangements for the ER Program, including information specified in indicator 30.1, to the extent known at the time.	Section 15; Pages 153 on wards; Section 14.3.2 page 151
	Criterion 30: The Benefit Sharing Plan will elaborate on the benefit sharing arrangements for Monetary and Nonmonetary Benefits, building on the description in the ER Program Document, and taking into account the importance of managing expectations among potential Beneficiaries.	Section 15 page 153 onwards
	Criterion 31: The benefit sharing arrangements are designed in a consultative, transparent, and participatory manner appropriate to the country context. This process is informed by and builds upon the national readiness process, including the SESA, and taking into account existing benefit sharing arrangements, where appropriate.	Section 15 page 153 onwards
	Criterion 32: The implementation of the Benefit Sharing Plan is transparent.	Not required yet
	Criterion 33: The benefit sharing arrangement for the ER Program reflects the legal context.	Section 15; section 15.3 page 161
5 (c) Non-Carbon Benefits Criteria 34 – 35	Criterion 34: Non Carbon Benefits are integral to the ER Program.	Section 16 page 168
	Criterion 35: The ER Program indicates how information on the generation and/or enhancement of priority Non Carbon Benefits will be provided during ER Program implementation, as feasible.	Section 16 pages 168 onwards
6 ER Program Transactions		
6 (a) ERPA Signing Authority and Transfer of Title To ERs Criterion 36	Criterion 36: The ER Program Entity demonstrates its authority to enter into an ERPA and its ability to transfer Title to ERs to the Carbon Fund.	Section 17.1 page 173
6 (b) Data Management and ER Transaction Registries Criteria 37 - 38	Criterion 37: Based on national needs and circumstances, the ER Program works with the host country to select an appropriate arrangement to avoid having multiple claims to an ER Title.	Section 18, Section 18.2 page 175, 176
	Criterion 38: Based on national needs and circumstances, ER Program host country selects an appropriate arrangement to ensure that any ERs from REDD+ activities under the ER Program are not generated more than once; and that any ERs from REDD+ activities under the ER Program sold and transferred to the Carbon Fund are not used again by any entity for sale, public relations, compliance or any other purpose.	Section 18, but under development

6 Annex 6: Additional data for the analysis of deforestation and degradation in the ER-P

The following graphs are based on the Provincial Agricultural Yearbook Statistics from the ER-P provinces 2010 to 2014.

6.1 Logging plantation and natural forest

The following graphs on legal logging show the rapid growth in the volume of legally logged plantation timber and the rapid decline from 2010 to 2013 of logging of natural forest due to the ban on logging, but the data also shows a surprisingly rapid rise from 2013, this is probably related to infrastructure projects and most of the logging of natural forest was undertaken in two provinces Nghe An and Ha Tinh.

Figure 6.1 Legally logged plantation timber

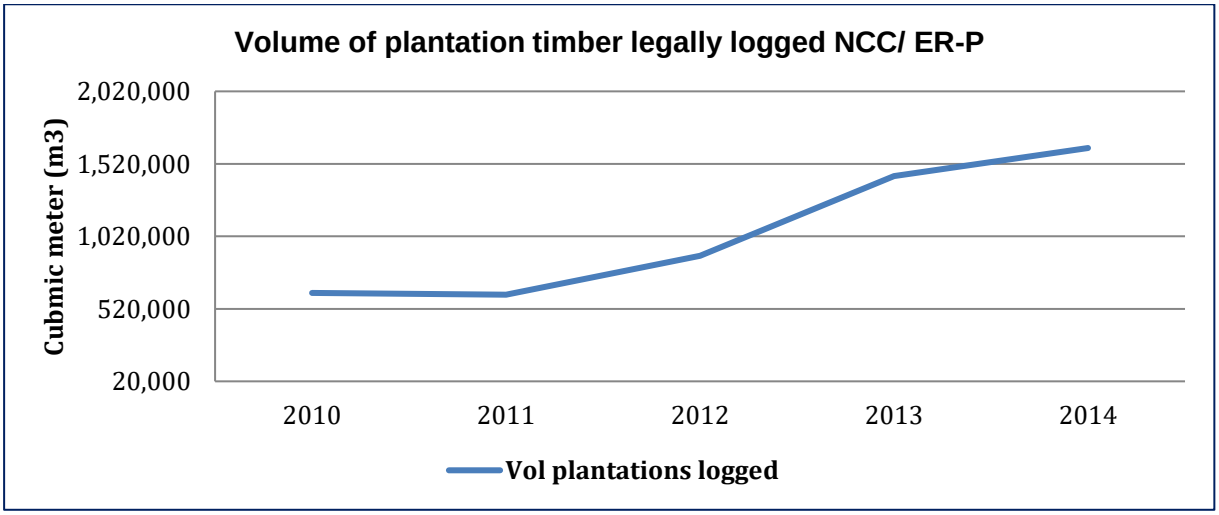
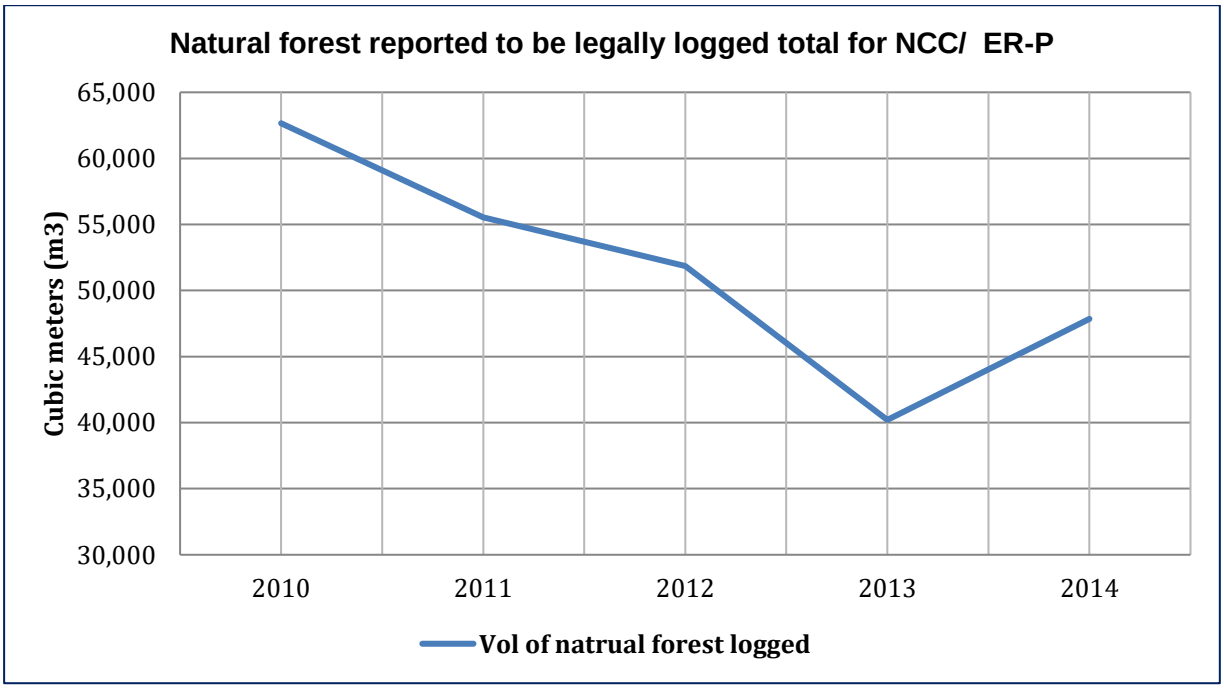
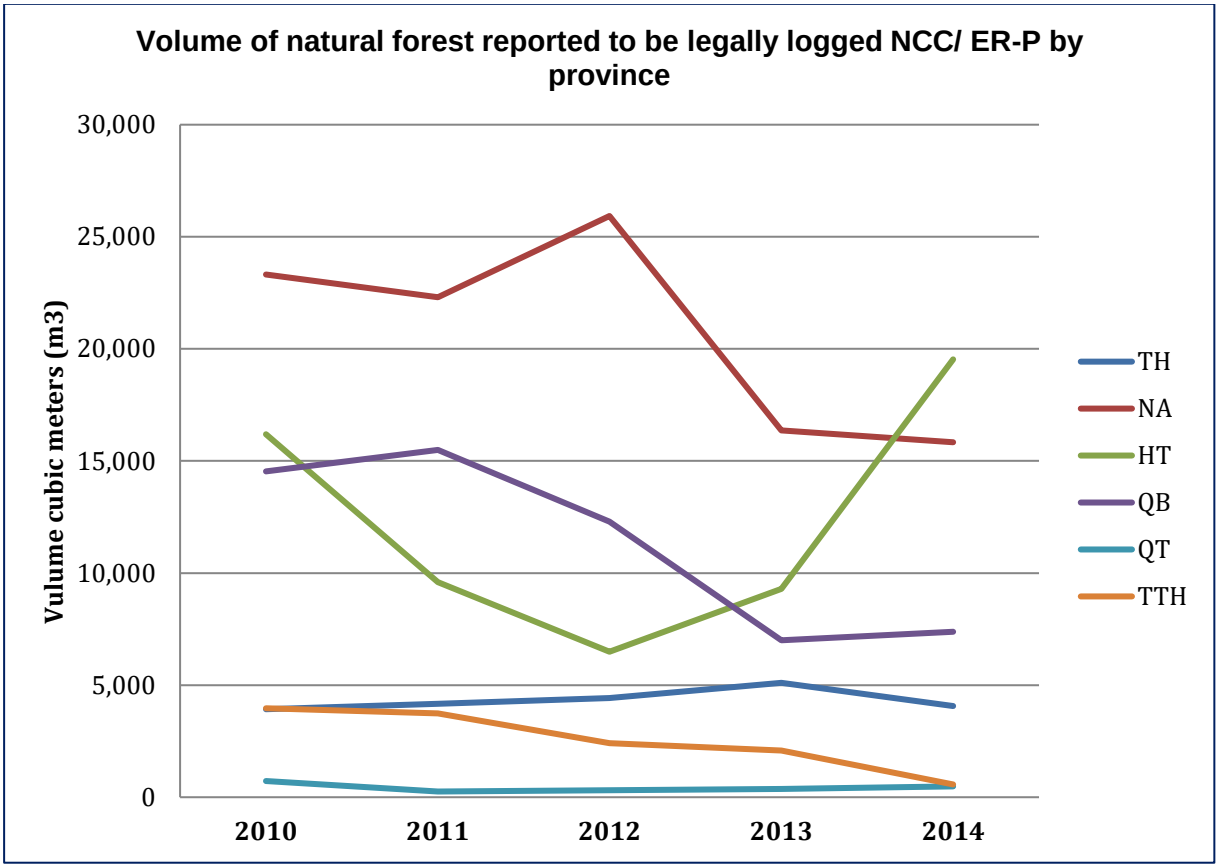


Figure 6.2 Legally logged natural forest – logging ban starts end of 2014



The provincial graphs of legally logged natural forest for Nghe An and Ha Tinh show the probable relation of logging to due construction of infrastructure related to infrastructure - a number of hydropower plants were under construction at this time, it is unclear why so much natural forest was logged in Quang Binh from 2010-2011. It is noticeable that logging of natural forest rapid increased in 2013 and early figures for 2014 ahead of the logging ban, the Yearbooks do not have data after Q3 2014. For, Thanh Hoa, Quang Tri and Thua Thien Hue the volume of natural forest logged has remained low and even decreased for the period.

Figure 6.3 Volume of legally logged natural forest by province in the ER-P region



6.2 Expansion of agriculture

Shifting cultivation still occurs in the NCC region, but is limited to the upland and mountainous western parts, and little or no swidden is officially recorded in the midland landscape of the central provinces of Ha Tinh and Quang Binh provinces, however, up to 12,800 ha were reported in Nghe An province and 14,500 ha in the southern provinces of Quang Tri and Thua Thien-Hue (FPD 2011). Shifting cultivation is a cultural practice of ethnic minority communities, and is most often found in the absence of viable alternatives[1], and in areas lacking good agricultural land (particularly for young couples), access to extension services, and adequate market access.

Nghe An and Quang Tri have the largest forest area being converted into agriculture land while Thanh Hoa, Ha Tinh and Thua Thien Hue have a few areas converted into agriculture

[1] Reports from provinces and FPD from 2007 to 2014 show small area of forest lost due to shifting cultivation and through interviews of local people it revealed that the Government regularly supports poor households, particularly HHs of ethnic minority with rice.

land; almost all converted land of these provinces, and in particular for Quang Binh, is used for non-agriculture purposes. Since the forest being converted would be expected to be poor natural or planted forest, especially in Quang Tri, where soil has been heavily degraded, more investment would be required if the forest is replaced by other agriculture crops.

The rate of change to the expansion of the area for agriculture is clearly seen in the following set of graphs for different agricultural commodities for the provinces in the ER-P region data comes from the Agricultural Statistical Yearbooks. Of note is that the increase in the agricultural area does not closely match the volume of legally logged natural forest until 2013, however, the expansion of annual crops does match the increase in agricultural crop area and over the same period perennial crops also expand, but not by so much, this is probably due to the investment required for the perennial crop. The individual crops show some general increases including rubber, which shows continued and reasonably rapid expansion of the production area, but with a drop in rubber production for the same period.

Discussions with provinces indicate that rubber is still being planted, despite the drop in price, as this reflects the investment decisions already made and also some confidence that the price for latex will become more attractive in the future, however, further new investment in rubber plantations after this planting cycle would be expected to be put on hold until there is some upward movement in the price.

The growth rate in planted area has increased at an overall 7% for the whole NCC region, however the growth rate in particular provinces (Ha Tinh 11%, Nghe An 10% and TTHue 11%) has been much higher. The forecast trend for rubber based on historic performance shows a continuation in the in the area as shown in Table 2.1 below.

Table 6.1Three year current and forecast increase in area planted to rubber NCC region

Year	Actual area of rubber (ha)	Forecast growth in the area of rubber (ha)
2012	72,870	
2013	77,911	
2014	79,335	
2015		82,454
2016		86,536
2017		90,619

Note: This is based on analysis of the historical trend of rubber area from 2001-2014, there have been fluctuations in the price of rubber latex over that period and these are expected to continue; there has been a relatively rapid expansion of the area for rubber in some provinces notably Nghe An, Ha Tinh, and Thua Thien Hue, currently prices for rubber latex are at a low which may in the short term stall further investment in the crop. However, the overall trend and growth forecast remains high relatively high

Figure 6.4 Change in total agricultural area of ER-P region (ha)

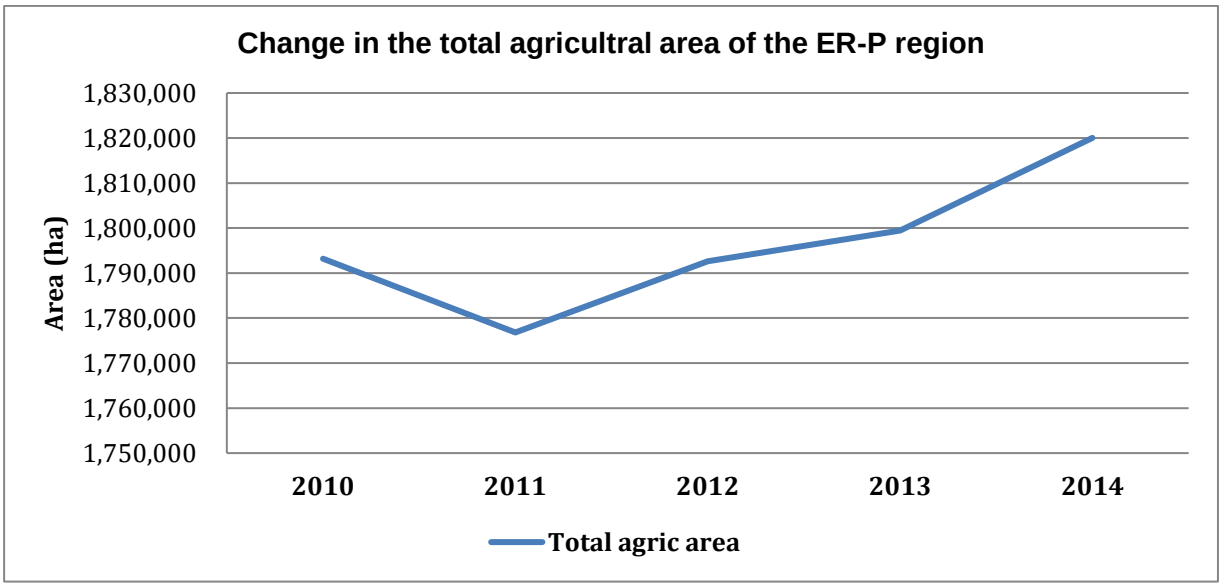


Figure 6.5 Area of annual crops ER-P region (ha)

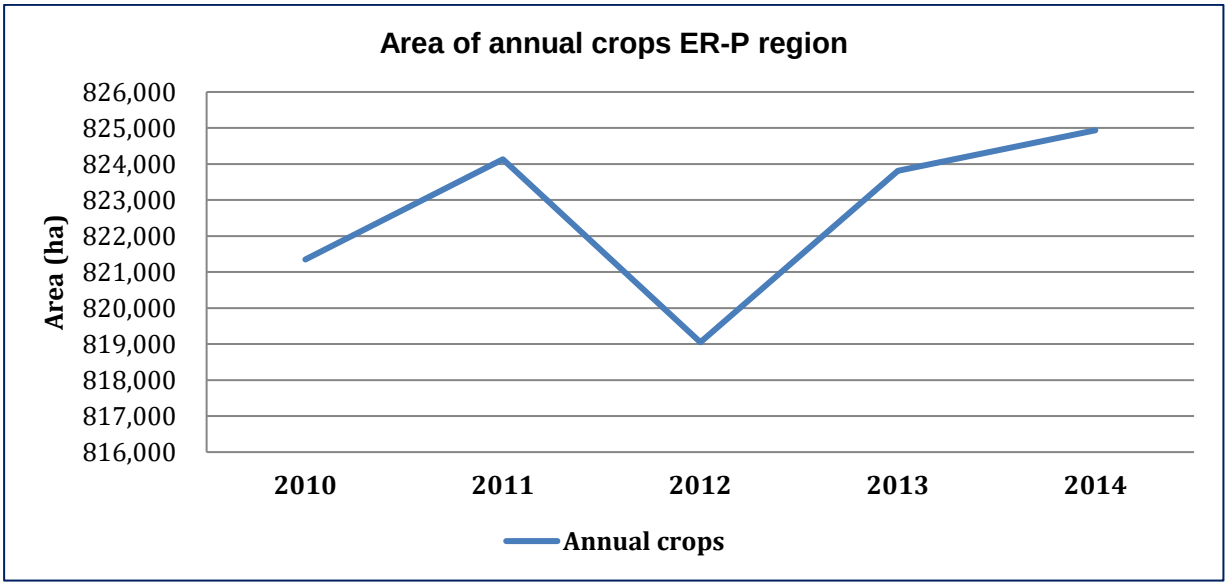


Figure 6.6 Area of perennial crops ER-P region (ha)

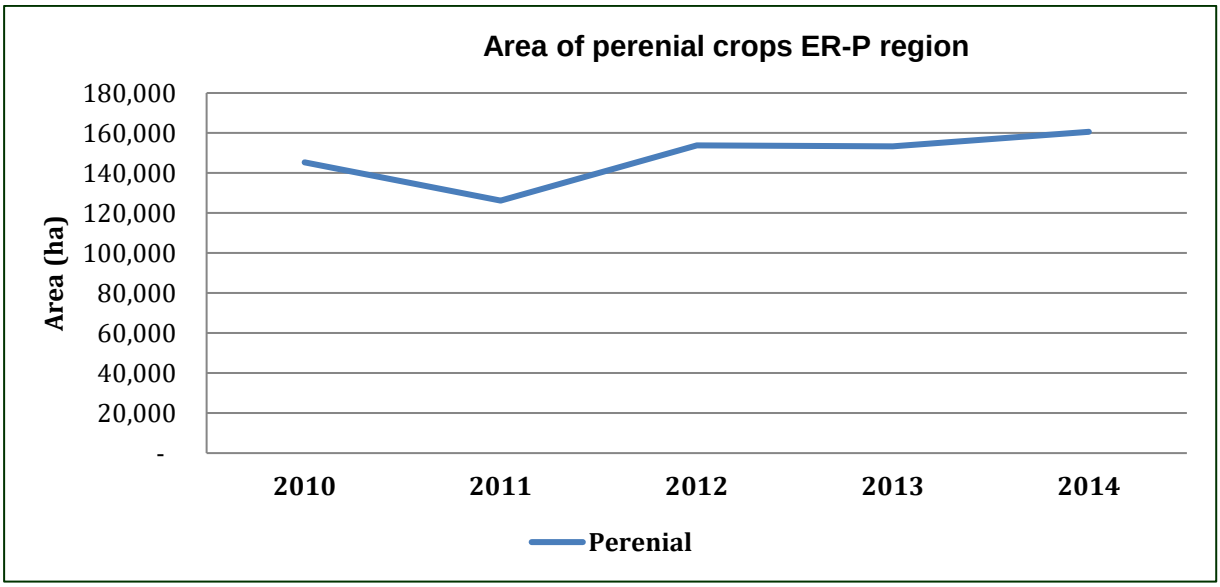


Figure 6.7 Area of cereal crops ER-P region (ha)

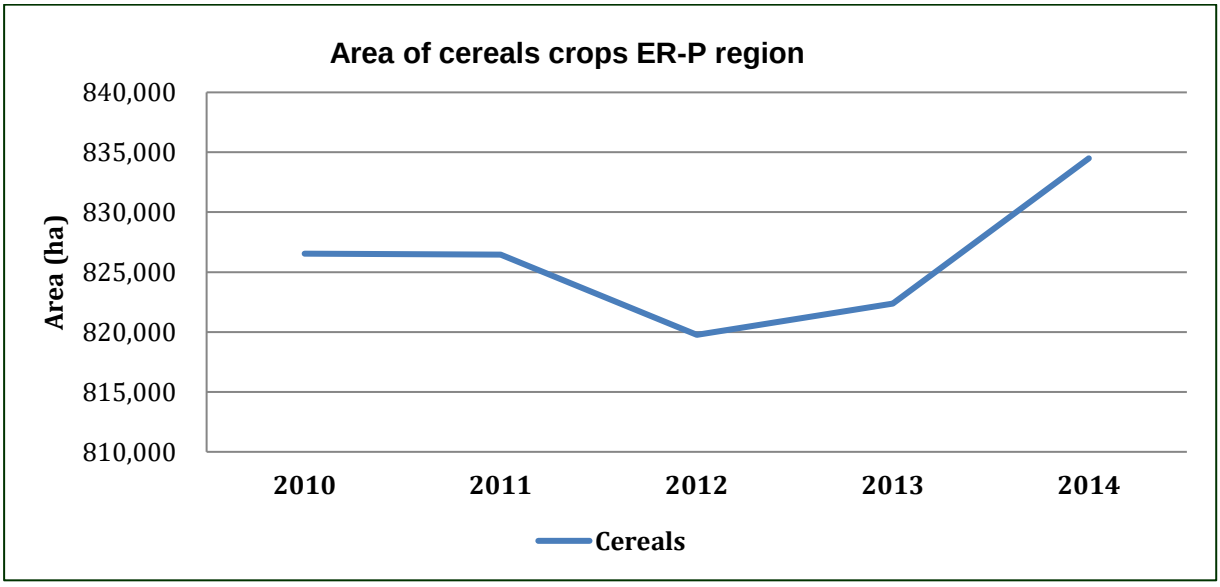
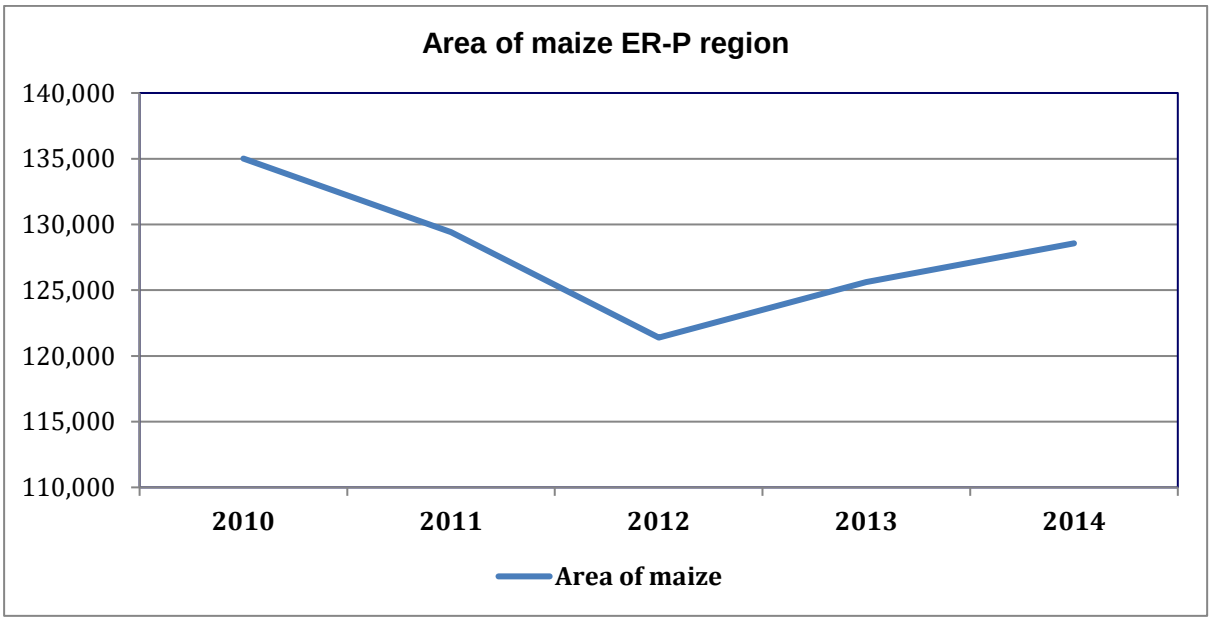


Figure 6.8 Area of maize in the ER-P region (ha)



a) Other planned crops and agricultural productions approaches operating as agricultural conversion drivers

In Nghe An, as a result of a large scale dairy unit (with 3,000+ head of cattle), 12,600 ha of forestland has been allocated to plant fodder crops for milk cows.[2]

6.3 Rubber

Rubber continues as an important and widespread driver in the region (see Figures 2.9, 2.10 and 2.11), as it was 2013/14 for the ER-PIN, even though the price has dropped and the area of production has dropped the expansion of the area under rubber has continued, although this may drop if the price does not increase.

The growth rate in planted area has increased at an overall 7% for the whole NCC region, however the growth rate in particular provinces (Ha Tinh 11%, Nghe An 10% and TTHue 11%) has been much higher. The forecast trend for rubber based on historic performance shows a continuation in the in the area as shown in Table 2.2 below.

Table 6.2 Three year current and forecast increase in area planted to rubber NCC region

Year	Actual area of rubber (ha)	Forecast growth in the area of rubber (ha)
2012	72,870	
2013	77,911	
2014	79,335	
2015		82,454
2016		86,536
2017		90,619

Note: This is based on analysis of the historical trend of rubber area from 2001-2014, there have been fluctuations in the price of rubber latex over that period and these are expected to continue; there has been a relatively rapid expansion of the area for rubber in some provinces notably Nghe An, Ha Tinh, and Thua Thien Hue, currently prices for rubber latex are at a low which may in the short term stall further investment in the crop. However, the overall trend and growth forecast remains high relatively high.

[2] Decision 23/QD-SNN-KHTC 23 Jan. 2015.

Figure 6.9 Growth in the area of rubber in the NCC region

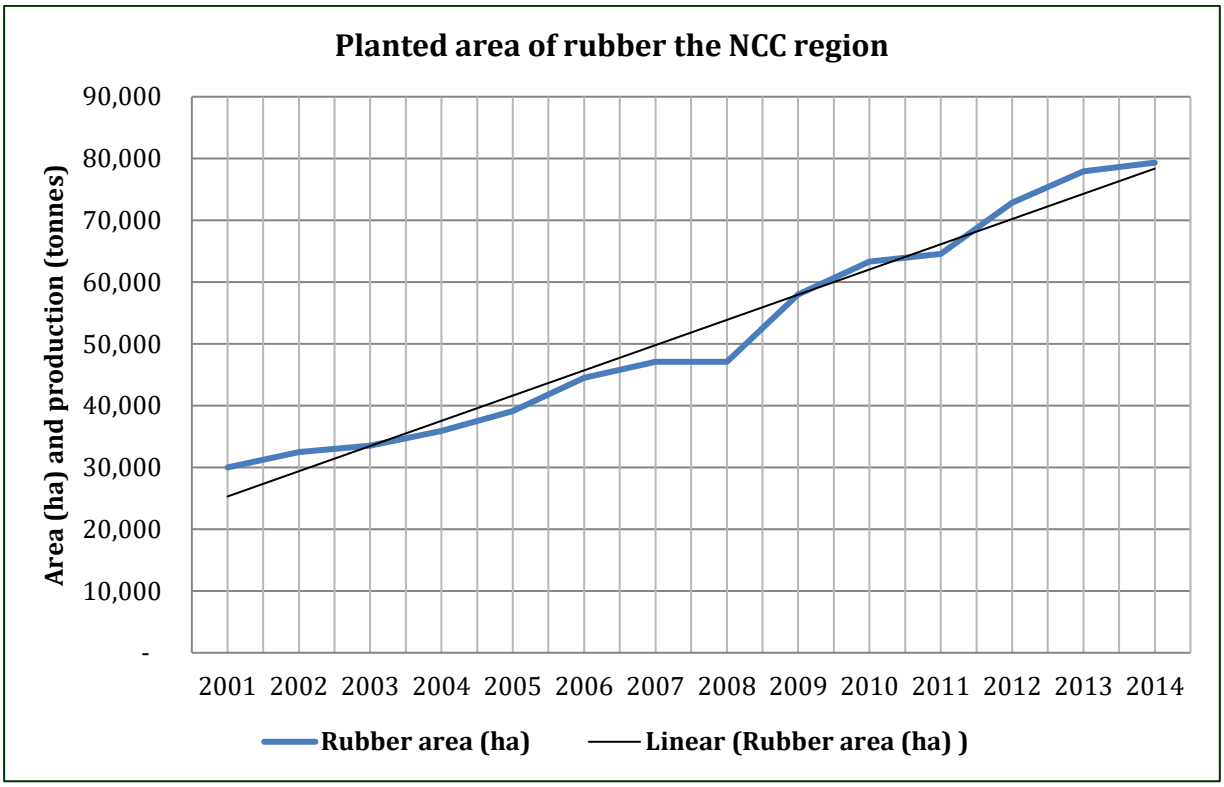


Figure 6.10 Planted area of rubber, area of production and production output

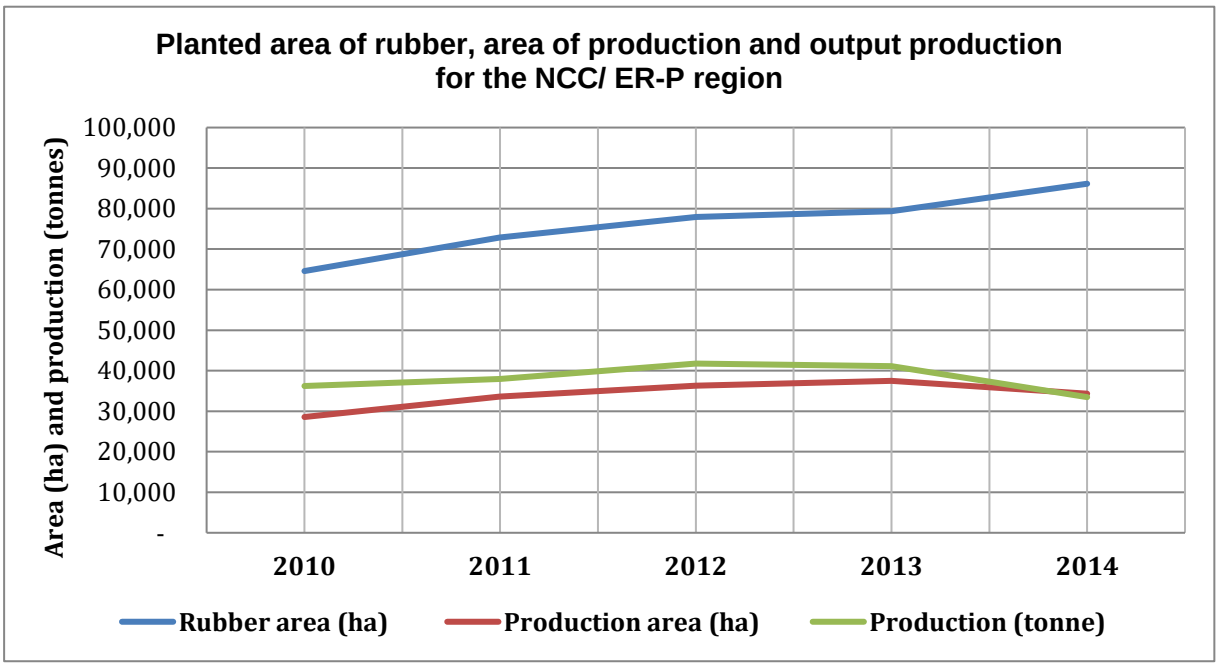
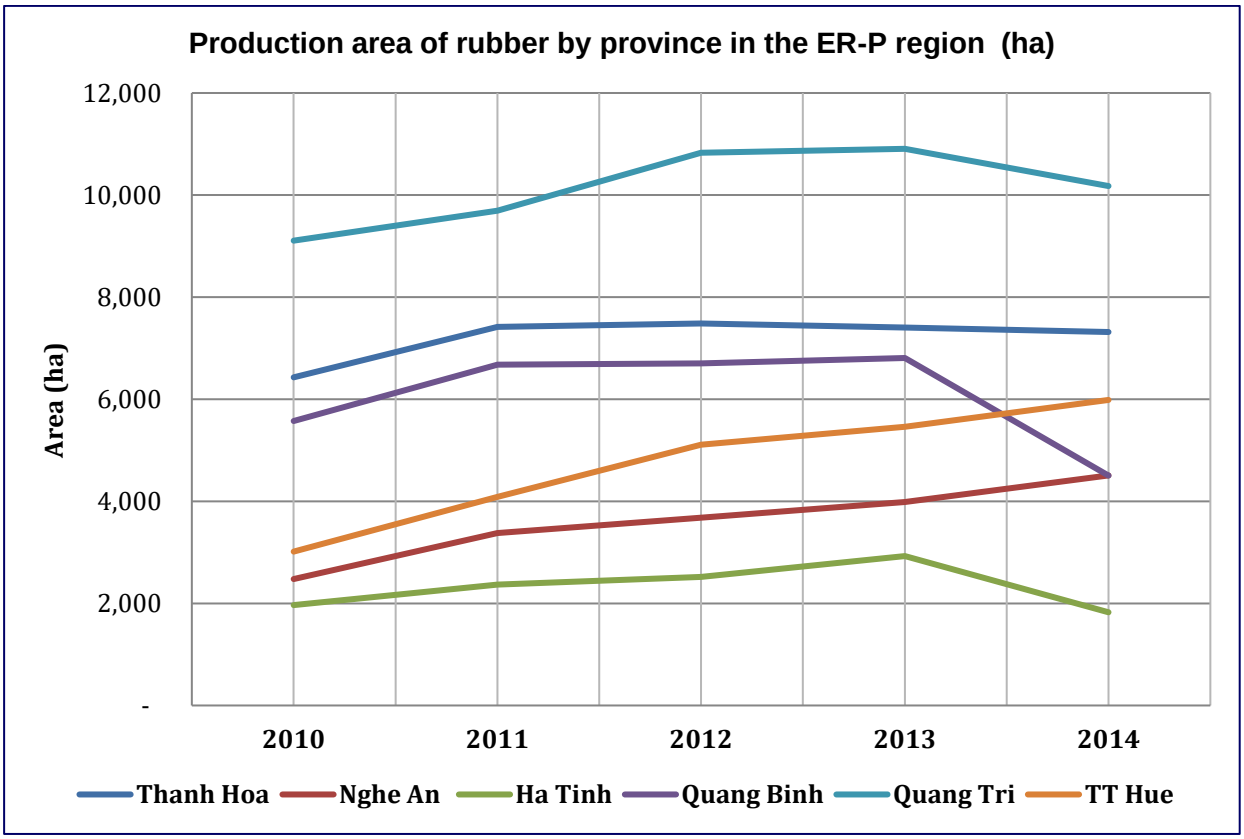


Figure 6.11 Production area of rubber by province in the ER-P region (ha)



6.4 Cassava

The case for cassava acting as a major driver of conversion of forest after rubber is somewhat less clear, however, it is clearly an important localised driver (see Table 2.3), the table shows the forecast area of cassava based on historical trend based on the analysis of the period 2001 to 21014, during that period there were demand and price fluctuations which contribute to a rapid increase or decrease in the area of cassava planted year on year. The analysis of the overall growth of cassava in the NCC region is estimated to be 4%, however, in Quang Tri the growth in cassava area over the same period was 10%. The rate of forest conversion for agriculture in the region is for cassava (for starch production and more recently biofuel, but demand for starch biofuel has already fallen). It is widely grown in communes, and smaller amounts in shifting cultivation areas, this places commodity price based risk for natural forests if the demand and price of cassava is high, in 2014/15 in Quang Tri there was localised conversion from Acacia plantation to cassava to meet the market and production requirements from a new cassava processing factory and due to opportunity of a greater return from cassava.

Table 6.3 Three year actual and forecast area of cassava in the NCC region

Year	Actual area of cassava (ha)	Forecast growth in area of cassava (ha)
2012	64,019	
2013	61,869	
2014	63,146	
2015		70,870
2016		72,954
2017		75,059

The graphs for cassava and maize most probably reflect the impact of the market demand from China and prices. The average price of raw cassava at the farm gate slightly increased of the period due to China's cassava large demand for starch and ethanol production. The market demand and price for corn starch products in China also increased in 2014 after a drop in demand in previous years.

Table 6.4 Price of cassava ER-P region

Year	Price VND/kg
2008-2009	800-900
2010	1,000
2011	1,000 - 1,100
2012-2013	1,200
2014	1,200-1,300

Figure 6.12 Total area of cassava for the NCC region

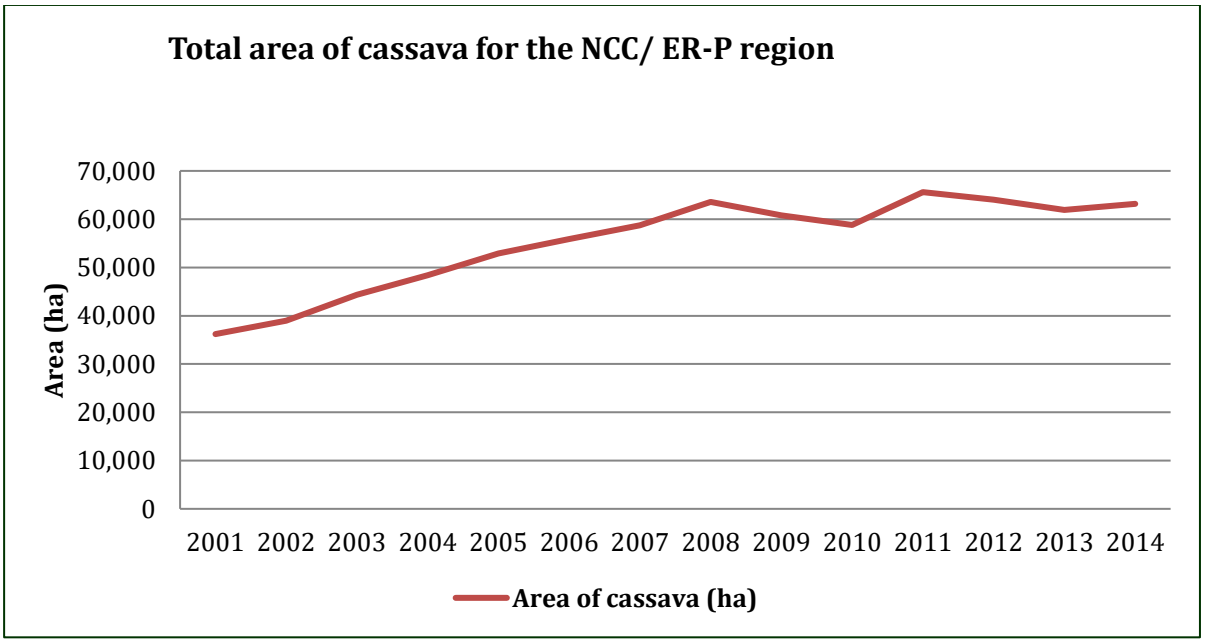
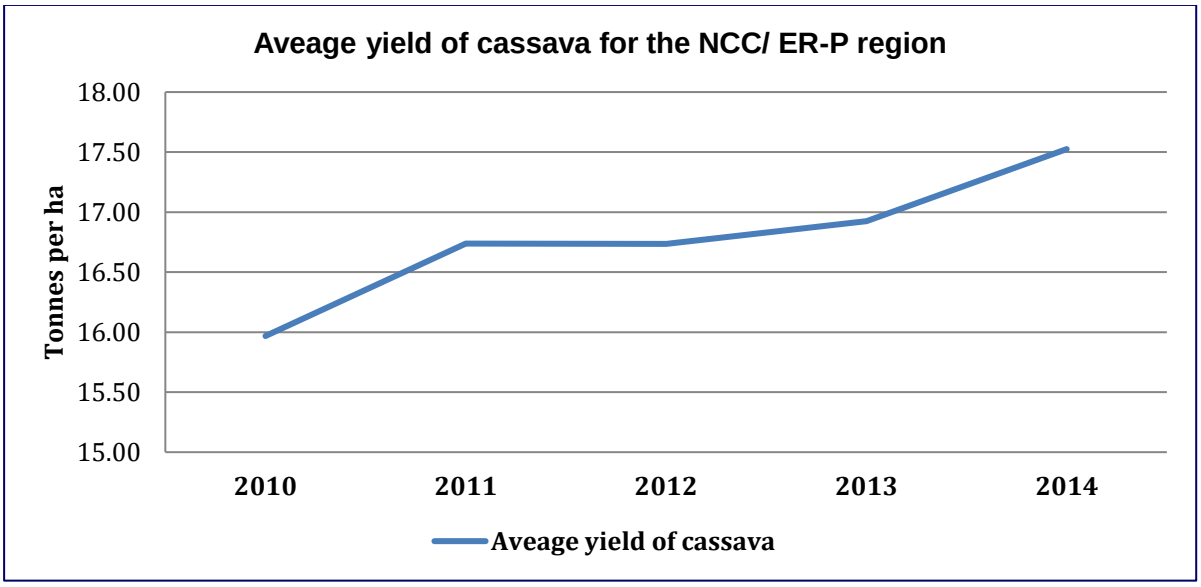
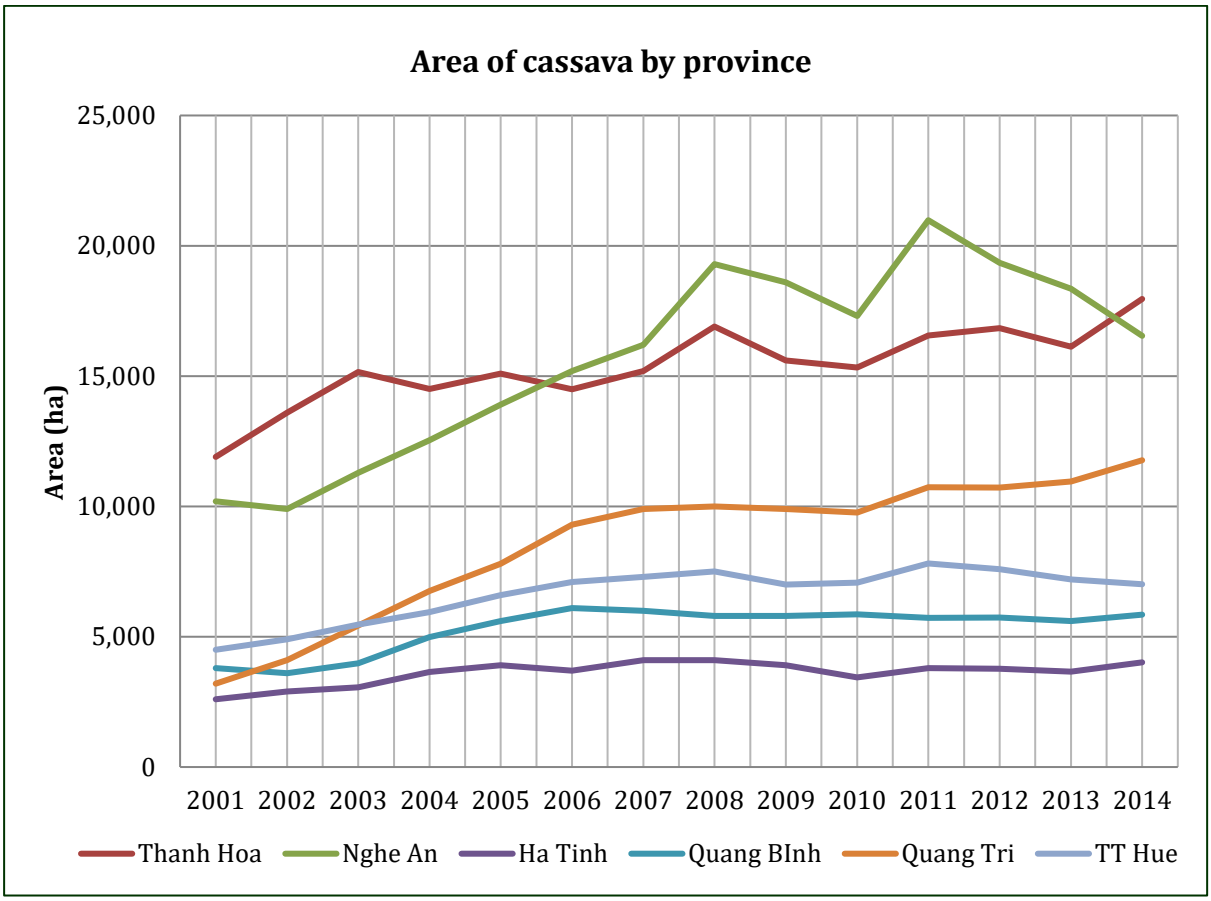


Figure 6.13 Average yield of cassava for the NCC/ ER-P region



Cassava[3] remains an important source of income for poor farmers due to easy cultivation, undemanding soil requirement and low investment costs. According to the MARD, China remained the top importer of Vietnamese cassava in 2015, accounting for 89% of market share, the market for Viet Nam's cassava in Japan and Taiwan also saw high growth and in 2015 cassava exports increased, Viet Nam shipped 3.42 million tonnes of cassava (with a value estimated to be US$1.09 billion) in the first 10 months of 2015 up 22.6% in volume and 19.1% in value against the corresponding period for 2014. The provincial graphs of the area of cassava planted show the importance attached to the crop in Thanh Hoa and Nghe An provinces although for the latter province production area has been showing rapid decline from a peak in 2011. Production in Quang Tri shows an increase in production, related to the expansion of cassava processing in the province – easier access to a market. The remaining three provinces show a more or less steady state of the area under cassava production.

Figure 6.14 Area of cassava by province for the ER-P region



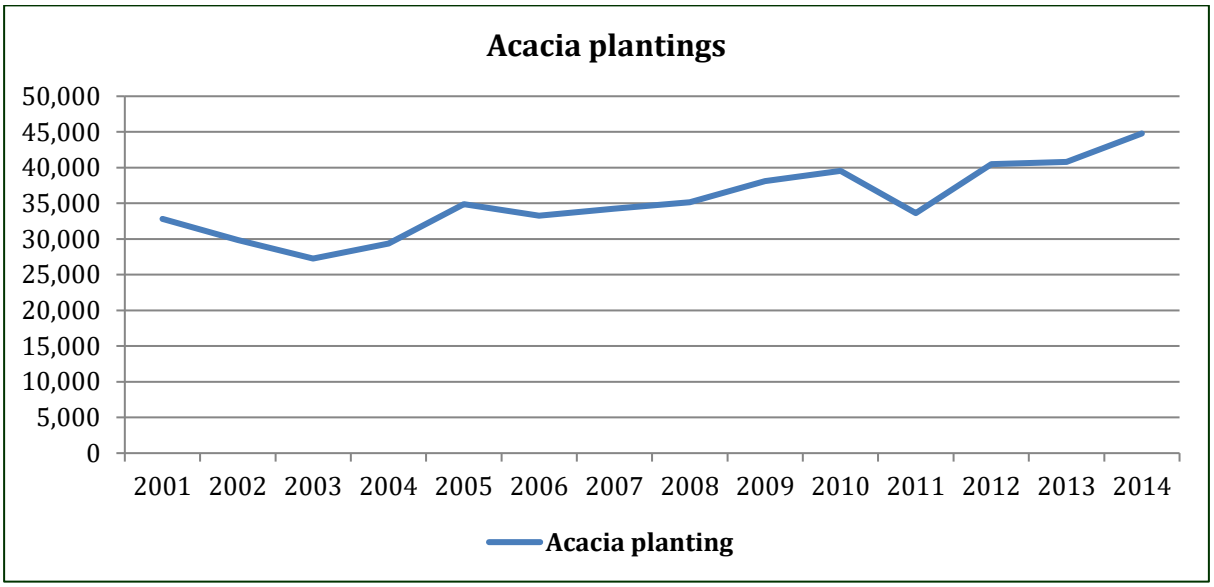
6.5 Forest plantations

The figures for expansion of Acacia show a relatively flat rate of growth of 2% over the period of 2001-2014. Plantation agriculture, mainly Acacia, has covered much of midland areas of the ER-P region and continues to penetrate into the upland areas, but in some areas it has not replaced native species, for example, *Melia sp.* in upland areas of Nghe An due to strong local prices, bamboo system still largely dominates in Thanh Hoa (but increasing areas of

[3] The period from 1975 to 2015 has seen cassava become the third most important food crop in Vietnam, after rice and maize. In 2013 the cassava area in Vietnam reached 544,300 ha, with a production of 9.74 million tonnes, and an average yield of 17.9 t/ha. Within Asia, Vietnam is now the third largest cassava producer, after Thailand and Indonesia.

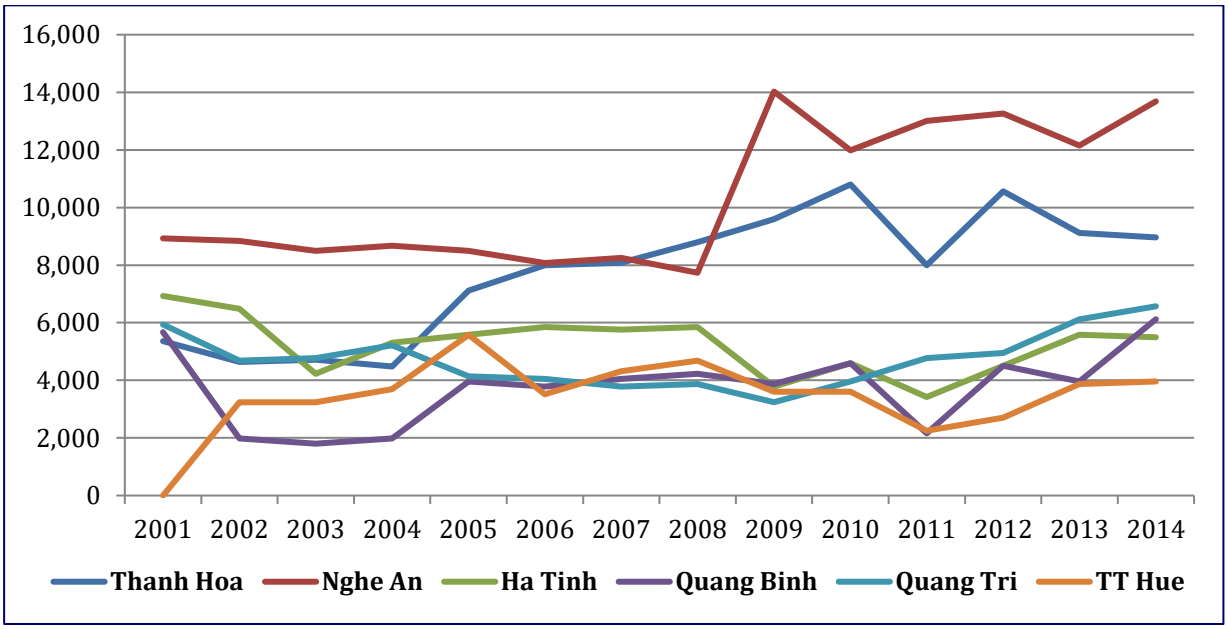
Acacia are apparent), but as noted in Quang Tri, market forces have seen a change from Acacia to cassava.

Figure 6.15 Growth in Acacia plantations in the NCC region 2001-2014 (ha)



Note the negative rate of growth (-2%) for Ha Tinh for the period 2001-14 in the Figure 2.16 below, the rate of growth in the plantations of mainly Acacia is highest in Thanh Hoa and Nghe An at 4% and 3% respectively, Quang Binh Quang Tri and TT Hue have rates of growth of 1%, 1% and 2% respectively.

Figure 6.16 Growth in Acacia plantations by province in the NCC region 2001-2014 (ha)



The following charts (Figures 2.17, 2.18) show the relative short term plantation growth in the NCC and show a decline in the rate of expansion of the acacia area (-1% for the overall NCC), however, as in other crops the expansion or reduction in area is localised i.e. in Nghe An the rate of growth is 2% in Quang Binh it is 6%, but in Thanh Hoa the area of plantation is recorded as declining (- 6% over the period) and in Thua Thien Hue the rate of growth is 1%.

Figure 6.17 Area of plantation forest mainly Acacia from 2010 to 2014

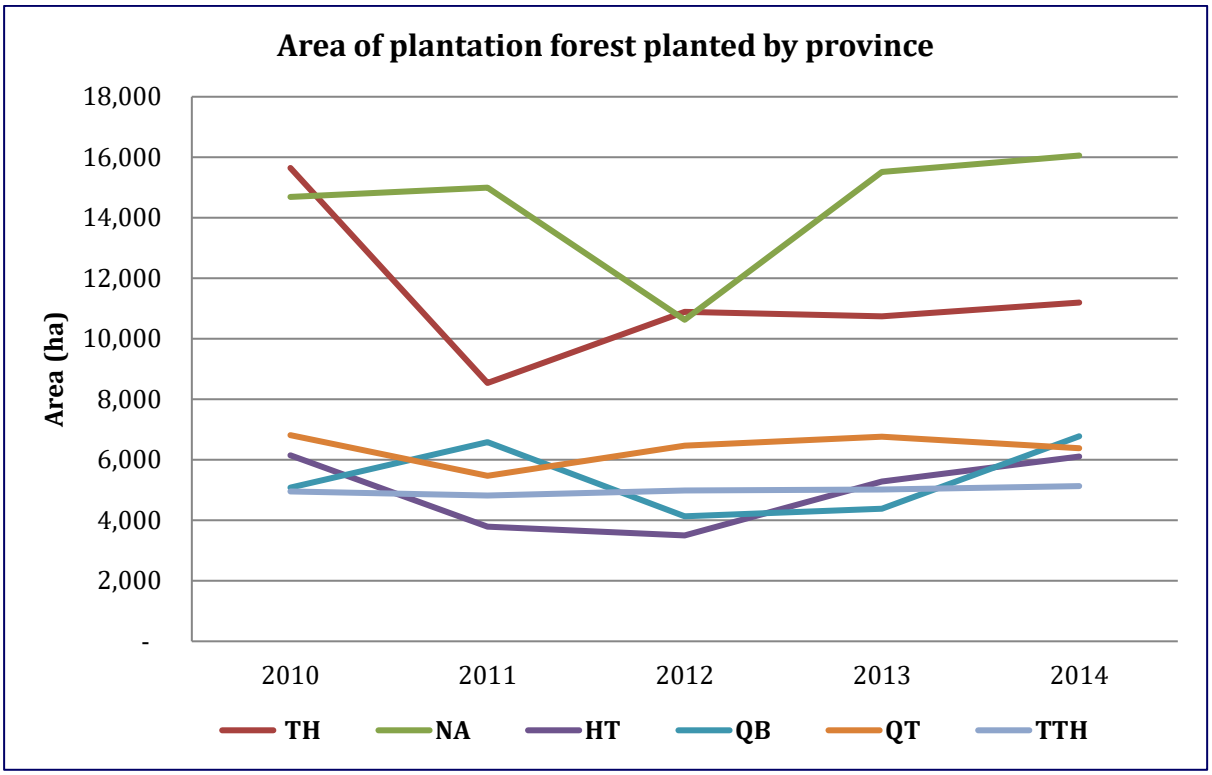
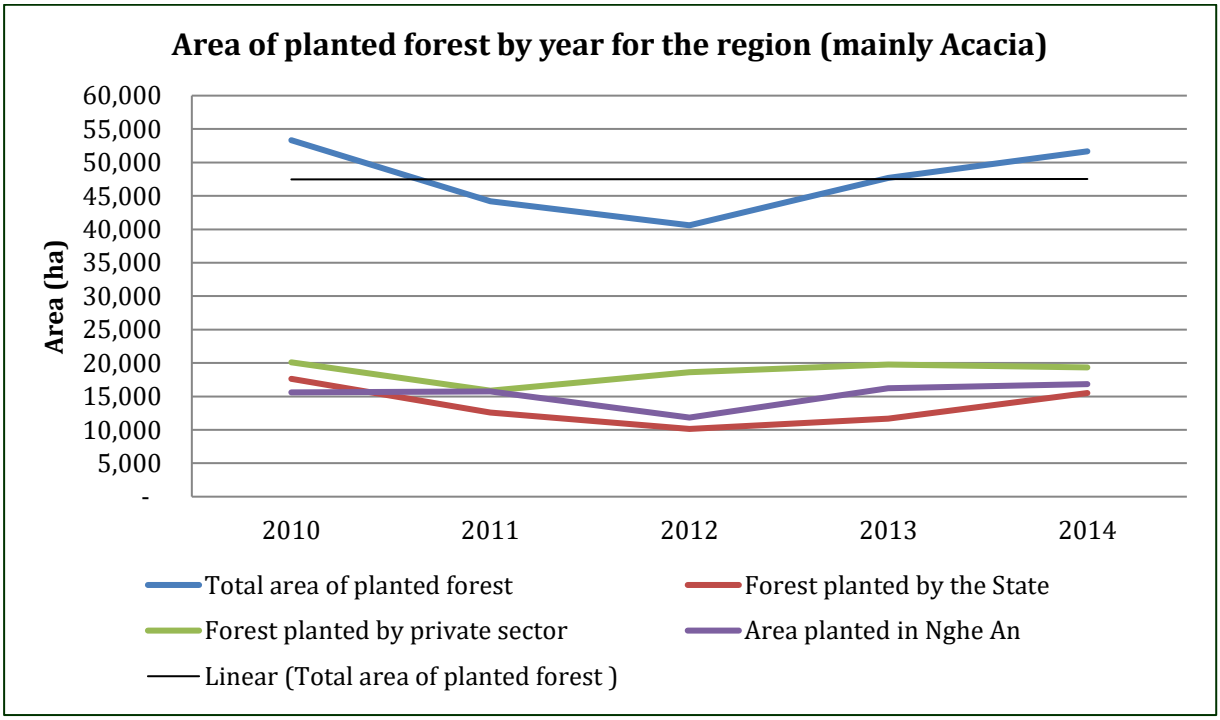


Figure 6.18 Area of plantation forest in the NCC region



In Quang Tri the State has been a steady investor, (Figure 2.19) but is now decreasing investments in plantation agriculture (1% growth over 2005 to 2014) where as the private sector has seen relatively rapidly growth (5% growth rate over the same period). Over the same period the investment in production forest has increased (Figure 2.20) at 7% but the investment in protection forest has a rapid decline (-3%).

Figure 6.19 Area of newly planted forest (mainly Acacia) by ownership Quang Tri

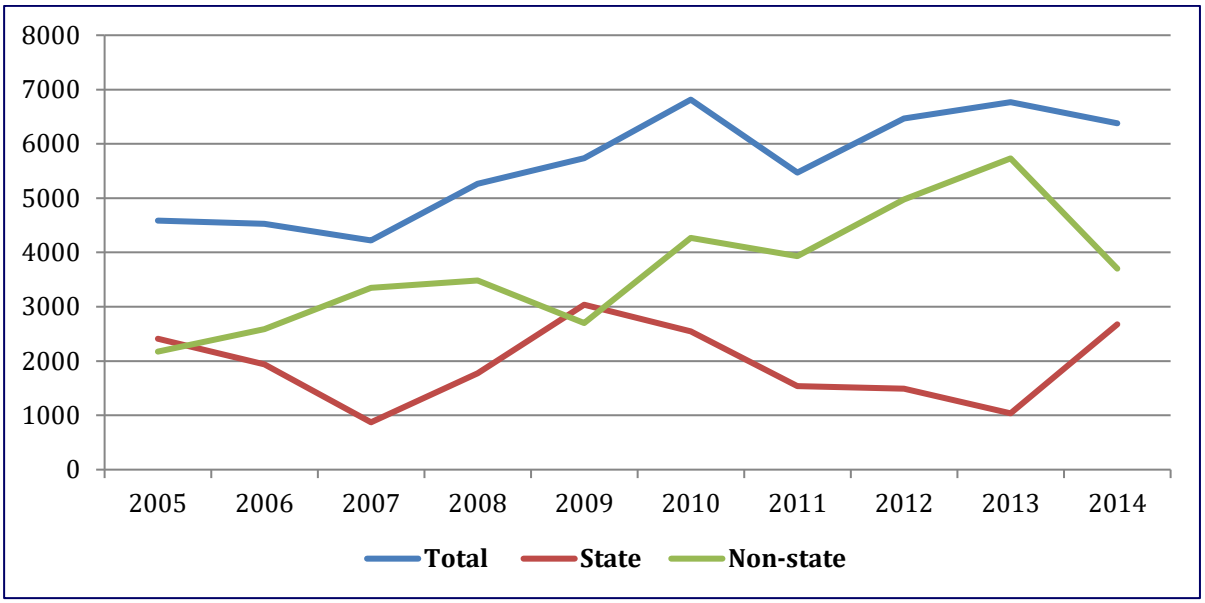
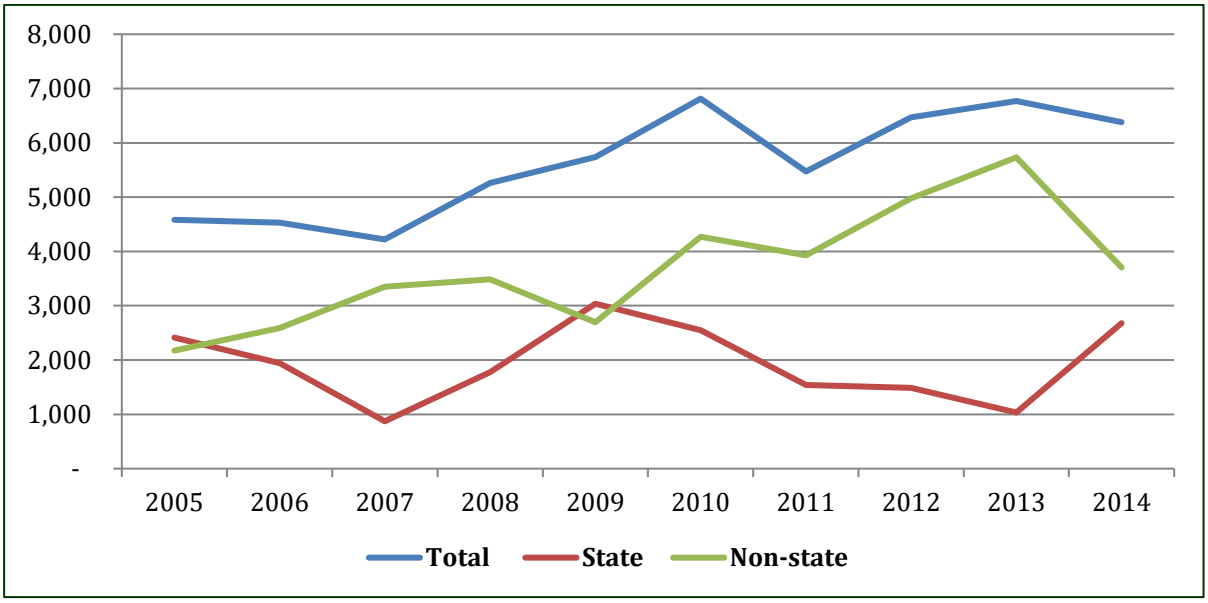


Figure 6.20 Area of newly planted forest (mainly Acacia) by forest type in Quang Tri



6.6 Forest loss

The following figures are from the university of Maryland and show the rate of forest loss

6.7 Impact of hydropower

The following Figure 1.1 of the Ma river HPP cascade shows the deforestation hotspot impact following the construction of the hydropower schemes along the river, the map shows clusters of deforestation hotspots around and near to the construction sites and on the edges of and even inside the nature reserves which will probably lead to future degradation of the local forest cover and nature reserve forest. The map and graph 9Figures 1.1 and 1.2) below also shows the relatively limited area of deforestation, however the clusters of hotspots

suggest that degradation of the forest in those areas will continue and lead to further forest loss particularly from increased forest exploitation and or conversion of the forest to land for Acacia plantations which are beginning to feature as a land use, or cassava already an important local cash crop.

Figure 6.21 Map showing possible impacts from a cascade of four HPPs on the Ma River currently under construction in Thanh Hoa Province

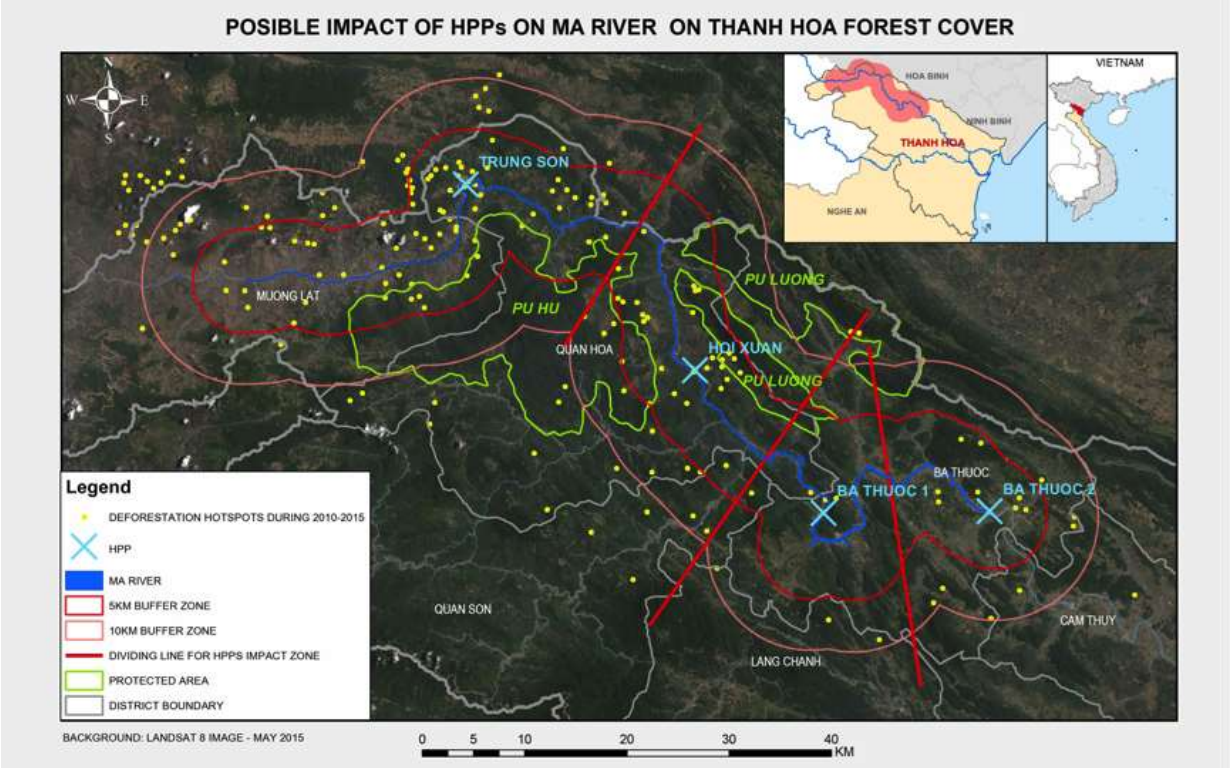
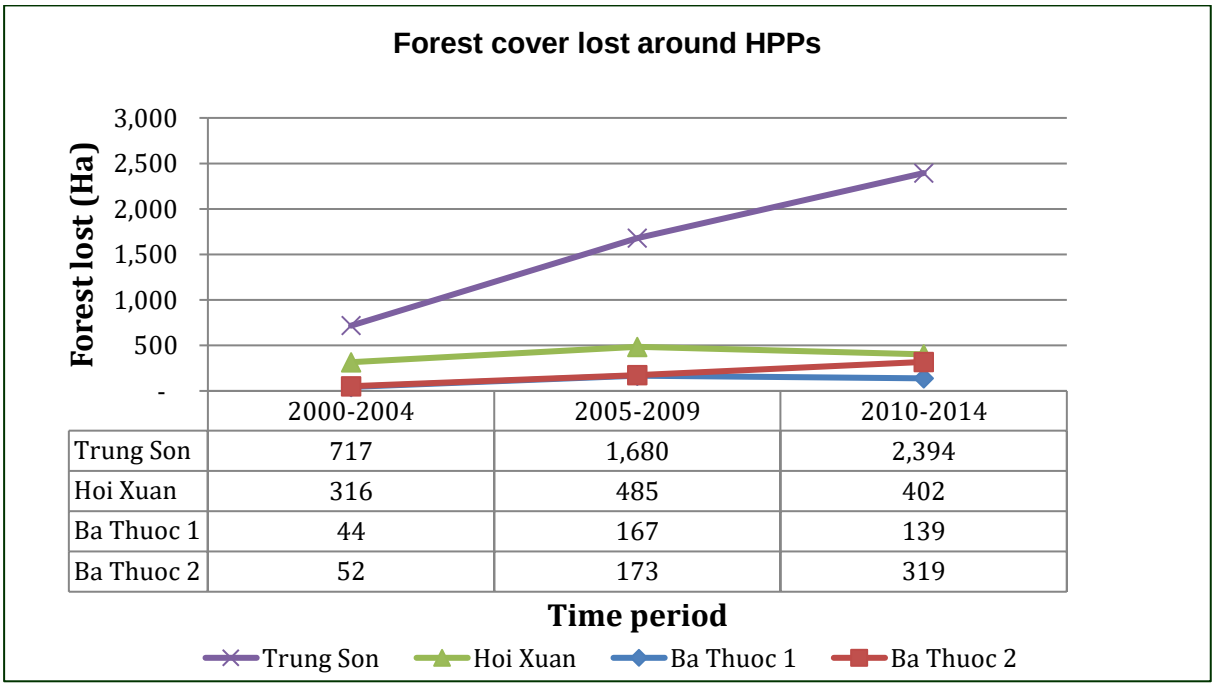


Figure 6.22 Forest loss from the 10km buffer zone Ma river cascade (from map above)



	2000-2004	2005-2009	2010-2014
Trung Son	717	1,680	2,394
Hoi Xuan	316	485	402
Ba Thuoc 1	44	167	139
Ba Thuoc 2	52	173	319

Table 6.5 Potential HPPs in the ER-P

Province	Forest cover Area	Current and proposed potential HPP
TH	forest cover (45% and 46% respectively (2010)	A cascade of four HPPs is A number of hydropower plants have been approved for constructing[4], and some of them have been completed such as Cua Dat (97 MW), Song Muc (2 MW), Ban Thach (0.96 MW), Ten Tan (0.25 MW), Pom Buoi (0.2 MW), Ba Thuoc I and Ba Thuoc II (13 MW), Doc Cay (15 MW), and those under construction such as Hoi Xuan, Cam Thuy and Trung Son
NA		Seven new hydropower plants will be built in this area, such as Nhan Hac and Dong Van in Que Phong district, Nam Can 2 and Nam Non in Ky Son district, Nam Pong and Chau Thang in Quy Chau district, and Chi Khe in Con Cuong district, expectedly to increase electricity production capacity from 700MW in 2015 to 1,360 MW by 2020. With this plan, considering that one MW of electricity production capacity increase will lead to a forest loss of 8-9 ha, the construction of the new seven hydro power plants could potentially lead to a loss of an additional area of 5,000-6,000 ha of forests in Que Phong, Ky Son, Quy Chau and Con Cuong district by 2020.[5]
HT		Two small HPPs but with 8 more planned
QB	Quang Binh has significant forest cover (71%) most extensive forest cover in VN	
QT	forest cover is somewhat less[6]	
TT H	forest gain of 60% (2010)	An number of HPP assets

[4] Assessment of Drivers of Deforestation and Forest Degradation in Thanh Hoa Province, Vietnam Forests and Deltas Program Technical Report No. 35

[5] Assessment of Drivers of Deforestation and Forest Degradation in Nghe An Province, Viet Nam Forests and Deltas Program Technical Report No. 36

[6] Historically both Thua Thien Hue and in particular Quang Tri were subject to heavy defoliation during the 1960's and '70s.

Figure 6.23 Map of bare land potentially available for afforestation in the ER-P region

This map show the distribution of bare land that has some potential for afforestation, 2010.

7 Annex 7: Stakeholder consultations

Table 7.1. List of people participated in the BSM consultation in Thau Thien Hue and Quang Binh Province during November 02 to 11, 2015

No	Name	Sex		Ethnicity	Position and address
		Male	Female		
I. Thừa Thiên Huế province					
1. Provincial Department of Agriculture and Rural Development (November 02, 2015)					
1	Võ Văn Dự	X		Kinh	Deputy Director of DARD
2	Nguyễn Hữu Huy	X		Kinh	Head of Technical Division, Forestry Development Sub-department
3	Trần Vũ Ngọc Hùng	X		Kinh	Officer, Forestry Development Sub-department
2. Provincial Farmer's Association (November 03, 2015)					
1	Phạm Thị Minh Huệ		X	Kinh	Vice Chairperson of district's Farmer Association
2	Hoàng Như Phát	X		Kinh	Staff of district's Farmer Association
3. Forestry Faculty, Hue Agriculture and Forestry University (November 03, 2015)					
1	Nguyễn Thị Phương Anh		X	Kinh	Teacher
2	Lê Quang Vĩnh	X		Kinh	Teacher
3	Hoàng Huy Tuấn	X		Kinh	Teacher
4. A Lưới DPC (November 04, 2015)					
1	Lê Minh Sơn	X		Cơ Tu	Deputy head of district's Natural Resources and Environment division
2	Trần Ngọc Chinh	X		Kinh	Deputy head of district's Agriculture and Rural development division
3	Nguyễn Hương Huy Cường	X		Kinh	District Forest Protection division
4	Lê Hoàng Vũ Quang	X		Kinh	Officer of DPC office
5	Hồ Văn Sao	X		Pacô	Deputy head of District Forest Protection division
5. Hồng Bắc CPC, A Lưới district (November 05, 2015)					
1	Lê Văn Thuận	X		Pa cô	Chairman
2	Lê Văn Buông	X		Pa cô	Commune cadastral-environment officer
3	Hồ Văn Vây	X		Pa cô	Acting Chairman of commune Fatherland Front
4	Hồ Văn Thiều	X		Pa cô	Chairman of commune Farmer Association
5	Nguyễn Văn Châu	X		Pa cô	Commune cadastral officer
6	Nguyễn Huy Cường	X		Kinh	Commune ranger
7	Lê Thị Phương		X	Pa cô	Chairwoman of commune Women's Union
8	Lê Viết Xuân	X		Pa cô	Chief of commune Army
9	Lê Văn Qua	X		Pa cô	Chairman of commune Veteran Union
10	Lê Văn Thú	X		Pa cô	Head of commune Youth Union
6. Tân Hối village, Hồng Bắc commune, A Lưới district (November 05, 2015)					
1	Lê Văn Bức	X		Pa cô	Villager
2	Nguyễn Văn Anh Tuấn	X		Pa cô	Villager
3	Lê Văn Buông	X		Pa cô	Villager

No	Name	Sex		Ethnicity	Position and address
		Male	Female		
4	Nguyễn Huy Cường	X		Pa cô	Villager
5	Lê Thị Hoàn	X		Pa cô	Villager
7. A Đên village, Hồng Thượng commune, A Lưới district (November 06, 2015)					
1	Lê Quang Vinh	X		Pa cô	Village deputy head
2	Lê Đinh Minh Chiến	X		Kinh	A Lưới district's Forest Protection division officer
3	A Viết Huy	X		Pa cô	A Sáp village head
4	Nguyễn Thị Viết Lâm		X	Pa cô	A Đên village head
5	Hồ Văn Khươi	X		Pa cô	Villager
6	Hồ Văn Thắng	X		Pa cô	Cadastral officer - ranger
7	Hồ Văn Lia	X		Pa cô	Villager
8	Hồ Văn Dương	X		Pa cô	Villager
9	Hồ Đắc Bàng	X		Pa cô	Villager
8. Village 4, Hồng Minh commune, A Lưới district (November 06, 2015)					
1	Hồ Thị Nga		X	Pa cô	Vice chairwoman of Hồng Minh CPC
2	Trường Đức Nguyên	X		Kinh	Officer of A Lưới district's Forest Protection division
3	Hồ Văn Rô Han	X		Pa cô	Villager
4	Hồ Văn Chiến	X		Pa cô	Villager
5	Trần Văn Hon	X		Pa cô	Villager
6	Hồ Văn Cốc	X		Pa cô	Cadastral-Forestry officer
II. Quảng Bình province					
1. Provincial Department of Agriculture and Rural Development (November 09, 2015)					
1	Nguyễn Văn Long	X		Kinh	Head of Forestry Development division
2	Nguyễn Văn Huệ	X		Kinh	Staff of Forestry Development division
3	Phạm Văn Bút	X		Kinh	Staff of Forest Protection division
4	Lê Vũ Khánh Hòa	X		Kinh	FCPF-REDD+ PPMU staff
5	Phạm Thanh Trang	X		Kinh	Officer of Planning and Finance division, DARD
6	Phan Xuân Ngọc	X		Kinh	FCPF-REDD+ PPMU staff
7	Nguyễn Tuấn Anh	X		Kinh	Staff of Forest Protection division
8	Phạm Hồng Thái	X		Kinh	Deputy director of DARD, Head of Forest Protection division
2. Quảng Ninh DPC (November 09, 2015)					
1	Phạm Công Khanh	x		Kinh	Vice chairman of DPC
2	Nguyễn Văn Trọng	x		Kinh	Officer of district's Natural Resources and Environment division
3	Nguyễn Thị Hương	x		Kinh	Officer of DPC's office
4	Trần Đức Thuận	x		Kinh	Deputy director of Phong Nha Kẻ Bàng project
5	Châu Văn Minh	x		Kinh	Officer of district's Agriculture and Rural Development division
6	Đỗ Minh Quỹ	x		Kinh	Vice chairman of district's Farmer Association
7	Ngô Thị Tâm	x		Kinh	Staff of district Women's Union
8	Nguyễn Thị Hằng	x		Kinh	Officer of DPC's office
9	Dương Thất Tuấn	x		Kinh	Officer of district's CEM
3. Trường Sơn CPC, Quảng Ninh district (November 10, 2015)					
1	Nguyễn Tiến Dũng	X		Kinh	Officer
2	Trương Thị Hiển	X		Kinh	Officer

No	Name	Sex		Ethnicity	Position and address
		Male	Female		
3	Vũ Ngọc Cảnh	X		Kinh	Officer
4	Hoàng Trọng Đức	X		Kinh	Officer
5	Đào Xuân Hùng	X		Kinh	Officer
6	Trần Thị Thúy Hà		X	Kinh	Officer
7	Lệ Thị Huyền		X	Kinh	Officer
8	Nguyễn Thế HIệu	X		Kinh	Head of forest protection station
9	Nguyễn Văn Cảnh	X		Vân Kiều	Officer
10	Nguyễn Văn Nam	X		Kinh	Officer
4. Khe Cát village, Trường Sơn commune, Quảng Ninh district (November 10, 2015)					
1	Hồ Thị Phương		X	Vân Kiều	Villager
2	Trần Thị Hiền		X	Vân Kiều	Villager
3	Nguyễn Thị Số		X	Vân Kiều	Villager
4	Hồ Thị La		X	Vân Kiều	Villager
5	Trần Thị Côi		X	Vân Kiều	Villager
6	Hồ Thị Hòa		X	Vân Kiều	Villager
7	Hồ Thị Phúc		X	Vân Kiều	Villager
8	Trần Thị Mai		X	Vân Kiều	Villager
9	Hồ Thị Ca		X	Vân Kiều	Villager
10	Hồ Thị Na		X	Vân Kiều	Villager
11	Hồ Thị Vân		X	Vân Kiều	Villager
12	Hồ Thị Sen		X	Vân Kiều	Villager
13	Hồ Thị Vui		X	Vân Kiều	Villager
14	Hồ Thị Hồng		X	Vân Kiều	Villager
15	Hồ Văn Dũng	X		Vân Kiều	Villager
16	Hoàng Sỹ Ngọt	X		Vân Kiều	Villager
17	Nguyễn Văn Thuần	X		Vân Kiều	Villager
18	Hồ Văn Long	X		Vân Kiều	Villager
19	Hồ Văn Chu	X		Vân Kiều	Villager
20	Hỗ Văn Tịch	X		Vân Kiều	Villager
21	Hỗ Thị Mo		X	Vân Kiều	Villager
22	Hà Thị Họ		X	Vân Kiều	Villager
23	Nguyễn Thị Tuyết		X	Vân Kiều	Villager
24	Hồ Thị Hương		X	Vân Kiều	Villager
25	Nguyễn Thị Tuyết		X	Vân Kiều	Villager
26	Hồ Thị Yên		X	Vân Kiều	Villager
27	Hồ Thị Loan		X	Vân Kiều	Villager
28	Trần Thị Sung		X	Vân Kiều	Villager
29	Nguyễn Thị Hinh		X	Vân Kiều	Villager
30	Trần Phúc	X		Vân Kiều	Villager
31	Hồ Văn Tiêu	X		Vân Kiều	Villager
32	Trần Văn Sỹ	X		Vân Kiều	Villager
33	Nguyễn Văn Tào	X		Vân Kiều	Villager
34	Trần Văn Sang	X		Vân Kiều	Villager
35	Hồ Văn Thiên	X		Vân Kiều	Villager
36	Hồ Văn Thao	X		Vân Kiều	Villager
37	Nguyễn Thị Óc		X	Vân Kiều	Villager
38	Hồ Văn Dai	X		Vân Kiều	Villager
39	Trần Thị Son		X	Vân Kiều	Villager
40	Hồ Thị Tuân		X	Vân Kiều	Villager
5. Cổ Tràng village, Trường Sơn commune, Quảng Ninh district (November 11, 2015)					
1	Nguyễn Văn Cách	X		Vân Kiều	Villager
2	Nguyễn Văn Sơn	X		Vân Kiều	Villager

No	Name	Sex		Ethnicity	Position and address
		Male	Female		
3	Hồ Đôi	X		Vân Kiều	Villager
4	Hồ Thai	X		Vân Kiều	Villager
5	Hồ Sương	X		Vân Kiều	Villager
6	Hồ Thông May	X		Vân Kiều	Villager
7	Hồ Quý	X		Vân Kiều	Villager
8	Nguyễn Văn Tuấn	X		Vân Kiều	Villager
9	Hồ Đinh	X		Vân Kiều	Villager
10	Hồ Muôn	X		Vân Kiều	Villager
11	Hồ Mỹ	X		Vân Kiều	Villager
12	Hồ Côn	X		Vân Kiều	Villager
13	Hồ Say	X		Vân Kiều	Villager
14	Hồ Đi	X		Vân Kiều	Villager
15	Hồ Thị Vân		X	Vân Kiều	Villager
16	Hồ Thị Thảo		X	Vân Kiều	Villager
17	Hồ Thị Lo		X	Vân Kiều	Villager
18	Hồ Thị Phú		X	Vân Kiều	Villager
19	Hồ Thị Gió		X	Vân Kiều	Villager
20	Hồ Thị Phông		X	Vân Kiều	Villager
21	Hồ Thị Chúc		X	Vân Kiều	Villager
22	Hồ Thị Mai		X	Vân Kiều	Villager
23	Hồ Sỹ	X	X	Vân Kiều	Villager
24	Nguyễn văn Quá	X	X	Vân Kiều	Villager
25	Nguyễn Văn Bền	X	X	Vân Kiều	Villager
6. Lạng Sơn village, Trường Sơn commune, Quảng Ninh district (November 11, 2015))					
1	Nguyễn Văn Cảnh	X		Kinh	Villager
2	Trần Thị Thật		X	Kinh	Villager
3	Vũ Ngọc Đức	X		Kinh	Villager
4	Lê Thị Thông		X	Kinh	Villager
5	Phạm Văn Hoài	X		Kinh	Villager
6	Trần Văn An	X		Kinh	Villager
7	Trần Văn Phú	X		Kinh	Villager
8	Trần Thị Vui		X	Kinh	Villager
9	Nguyễn Thị Thuấn		X	Kinh	Villager
10	Nguyễn Thị Vẽ		X	Kinh	Villager
11	Bùi Văn Dũng	X		Kinh	Villager
12	Trần Văn Hùng	X		Kinh	Villager
13	Nguyễn Đức Quý	X		Kinh	Villager
14	Võ Ngọc Tuyến	X		Kinh	Villager
15	Diệu Thị Thúy		X	Kinh	Villager
16	Phan Thị Cánh		X	Kinh	Villager
17	Trần Văn Tuấn	X		Kinh	Villager
18	Nguyễn Văn Nhân	X		Kinh	Villager
19	Trần Thanh Đạt	X		Kinh	Villager
20	Nguyễn Thị Ở		X	Kinh	Villager
21	Nguyễn Văn Bằng	X		Kinh	Villager
22	Nguyễn Đức Tuân	X		Kinh	Villager
23	Nguyễn Văn Hà	X		Kinh	Villager
24	Phạm Văn Tú	X		Kinh	Villager
25	Nguyễn Tiến Biên	X		Kinh	Villager
26	Lê Thế Viễn	X		Kinh	Villager
27	Trần Văn Bút	X		Kinh	Villager
28	Ngô Thị Hoạch		X	Kinh	Villager

No	Name	Sex		Ethnicity	Position and address
		Male	Female		
29	Nguyễn Thị Minh		X	Kinh	Villager
30	Nguyễn Văn Lộc	X		Kinh	Villager
31	Ngô Quốc Trị	X		Kinh	Villager
32	Nguyễn Thị Luyến		X	Kinh	Villager
33	Ngô Thanh Sơn	X		Kinh	Villager

Table 7.2 List of people participated in the BSM consultation in in Nghe An province during December 18 to 23, 2015

No	Name	Sex		Ethnicity	Position and address
		Male	Female		
1. Tam Quang CPC, Tương Dương district (December 18, 1015)					
1	Kha Thị Hiền		X	Thái	Vice chairwoman
2	Hồ Viết Minh	X		Kinh	Chairman of commune Farmer Association
3	Lương Thị Hoa		X	Thái	Chairwoman of commune Women's Union
4	Lê Đình Quang	X		Thái	Vice chairman of commune Veteran Union
5	Nguyễn Thị Yến		X	Kinh	Commune agriculture officer
6	Vi Thị Ngọc		x	Thái	Vice chairwoman of commune Fatherland Front
7	Nguyễn Quốc Bảo	X		Kinh	Commune ranger
2. Tùng Hương village, Tam Quang commune, Tương Dương district (December 19, 1015)					
1	La Quang Đảo	X		Đan Lai	Secretary of village Party Cell
2	Lô Văn Thâm	X		Thái	Villager
3	Lô Văn Cao	X		Thái	Village police officer
4	La văn Măn	X		Đan Lai	Head of village youth union
5	Vi Văn Phần	X		Thái	Village elder
6	Vi Văn Hoàng	X		Thái	Chairman of village Veteran Union
7	Viêng Thị Vui		X	Thái	Production team staff
8	Vi Thị Thúy		X	Thái	Villager
9	Lô Thị Hồng	X		Thái	Production team staff
10	Lô THị Thu	X		Thái	Villager
11	Vi Văn Hữu	X		Thái	Villager
12	La văn Hoàng	X		Đan Lai	Villager
13	Vi Văn Tuấn	X		Thái	Villager
14	La văn Cáng	X		Đan Lai	Villager
15	Lô Văn Ba	X		Thái	Villager
16	Vi Xuân Thủy	X		Thái	Villager
17	Lô Văn Khang	X		Thái	Villager
18	Lô Quốc Tuấn	X		Thái	Villager
19	Vi Thanh Tùng	X		Thái	Villager
20	Lô Hữu Doanh	X		Thái	Villager
21	Lê Thị Hương		X	Thái	Villager
22	Quang Văn Mão	X		Thái	Village police officer
23	Quang Thị Hom		X	Thái	Commune cadastral officer
24	Lô Quốc Tế	X		Thái	Villager

No	Name	Sex		Ethnicity	Position and address
		Male	Female		
25	Lô Thị Luông		X	Thái	Villager
26	Vi Thị Tim		X	Thái	Villager
27	Lô Thị Sơn		X	Thái	Villager
28	Nguyễn Thị Yến		X	Thái	Head of commune agriculture board
3. Bãi Xa village, Tam Quang commune, Tương Dương district (December 20-21, 1015)					
1	Quang Thị Hom		X	Thái	Commune cadastral officer
2	Vi Thị Dần		X	Thái	Head of village women's union
3	Nguyễn Thị Yến		X	Thái	Head of commune agriculture board
4	Lương Thị Thêm		X	Thái	Villager
5	Quang Thị Tuyết		X	Thái	Villager
6	Vi Thị Thuận		X	Thái	Villager
7	Vi Thị Bình		X	Thái	Villager
8	Vi Thị Hồng		X	Thái	Villager
9	Lô Thị Lầm		X	Thái	Villager
10	Vi Văn Thìn	X		Thái	Villager
11	Lô Văn Hùng	X		Thái	Villager
12	Lô Văn Tới	X		Thái	Village Party secretary
13	Lô Quang Vinh	X		Thái	Village head
14	Quang Đình Huân	X		Thái	Chairman of Farmer's Association
4. Provincial Department of Agriculture and Rural Development (December 22, 2015)					
1	Nguyễn Tiến Lâm	X		Kinh	Deputy director of DARD
2	Nguyễn Văn Minh	X		Kinh	Head of Forestry Development sub-department
3	Phạm Văn Toàn	X		Kinh	Officer of department's office
5. Quảng and Khiết villages, Nam Sơn commune, Quỳ Hợp district (December 22 - 23, 2015)					
1	Lô Văn Thành	X		Thái	Villager
2	Lô Văn Tham	X		Thái	Villager
3	Lô Thị Hồng		X	Thái	Villager
4	Lô Thị Hà		X	Thái	Villager
5	Lô Văn Ba	X		Thái	Villager
8	Lô Văn Kha	X		Thái	Villager
9	Lô Thị Luông		X	Thái	Villager
1	Lô Thị Ba		X	Thái	Villager
2	Lô Văn Thanh	X		Thái	Villager
6. Lâm nghiệp hamlet, Nghi Lộc PFMB, Nghi Lộc district (December 23, 2015)					
1	Lê Thị Hiệp		X	Kinh	Villager
2	Phạm Thị Đào		X	Kinh	Villager
3	Nguyễn Văn Phú	X		Kinh	Villager
4	Nguyễn Thị Na		X	Kinh	Villager
5	Nguyễn Thị Thư		X	Kinh	Villager
6	Lê Hồng Phong	X		Kinh	Villager

Table 7.3. List of people participated in the land assessment consultations in in Thua Thien Hue, Quang Tri and Ha Tinh provinces during October 06 to 17, 2015

No	Name	Sex		Ethnicity	Position and address
		Male	Female		
I. Thừa Thiên Huế province					
1. Provincial Department of Agriculture and Rural Development and Forestry Development Sub-department					
1	Võ Văn Dự	X		Kinh	Deputy director of DARD
2	Phạm Ngọc Dũng	X		Kinh	Head of Forestry Development Sub-department
3	Nguyễn Hữu Huy	X		Kinh	Head of Technical Division, Forestry Development Sub-department
4	Trần Vũ Ngọc Hùng	X		Kinh	Officer, Forestry Development Sub-department
2. Provincial Department of Natural Resources and Environment					
1	Hồ Đắc Trường	X		Kinh	Deputy director of DONRE
2	Nguyễn Thanh Vinh	X		Kinh	Deputy head of Measurement and Mapping division
3	Nguyễn Quang Nhật Châu	X		Kinh	Officer of Land registration office
4	Trương Thị Thu Trang		X	Kinh	Inspector of DONRE
5	Nguyễn Thế Lân	X		Kinh	Officer of Land administration division
6	Nguyễn Lê Quốc Bửu			Kinh	Officer of Land administration division
3. Nam Đông district and Nhật Thượng commune					
1	Phạm Tấn Son	X		Kinh	Head of Agriculture and Rural Development division
2	Nguyễn Hà Nhân	X		Kinh	Officer of Agriculture and Rural Development division
3	Nguyễn Đình Cường	X		Kinh	Deputy head of district's Forest Protection division
4	Nguyễn Văn Nhạc	X		Kinh	Officer of Natural Resources and Environment division
5	Trần Vũ Ngọc Hùng	X		Kinh	Officer, Forestry Development Sub-department
6	Nguyễn Văn Ất	X		Cơ Tu	No. 4 Village head of Nhật Thượng commune
7	Hồ Văn Biết	X		Cơ Tu	No. 5 Village head of Nhật Thượng commune
II. Quảng Trị province					
1. Provincial Department of Agriculture and Rural Development and Forest Protection Sub-department					
1	Khổng Trung	X		Kinh	Deputy director of DARD, Head of Forest Protection Sub-department
2	Lê Thị Thanh Hương		X	Kinh	Officer of Agriculture and Rural Development department
3	Nguyễn Văn Vĩnh	X		Kinh	Head of Forest Protection and Management Division, Forest Protection Sub-department
4	Lê Thanh Tuyền		X	Kinh	Head of Forest Protection and Management station, Forest Protection Sub-department
5	Trần Hiệp	X		Kinh	Head of General division, Forest Protection Sub-department
6	Đặng Nam	X		Kinh	Head of Planning division, Forest Protection Sub-department

No	Name	Sex		Ethnicity	Position and address
		Male	Female		
2. Provincial Department of Natural Resources and Environment					
1	Đặng Trọng Vân	X		Kinh	Deputy director of DONRE
2	Phạm Quang Đạt	X		Kinh	Head of Land Administration and Mapping division
3	Lê Văn Điều	X		Kinh	Deputy head of Land Administration and Mapping division
4	Đoàn Xuân Tính	X		Kinh	Deputy head of Land Administration and Mapping division
5	Võ Nguyên	X		Kinh	Officer of Land Administration and Mapping division
6	Trần Văn Nam	X		Kinh	Officer of Land Administration and Mapping division
3. Đắk Rông district and villages					
1	Tống Phước Châu	X		Kinh	Head of district's Forest Protection division
2	Lê Tiến Phú	X		Kinh	Officer of district's Forest Protection division
3	Đinh Thiên Hoàng	X		Kinh	Head of Forest Protection station
4	Lê Thị An		X	Kinh	Officer of Natural Resources and Environment division
5	Trần Đức Tâm	X		Kinh	Officer, Forestry Development Sub-department
6	Hồ Ai Bút	X		Vân Kiều	Tà Lêng village head of Đắk Rông commune
7	Hồ Văn Đeng	X		Vân Kiều	Forest Management Board of Tà Lêng village, Đắk Rông commune
III. Hà Tĩnh province					
1. Provincial Department of Agriculture and Rural Development and Forest Protection Sub-department					
1	Nguyễn Huy Lợi	X		Kinh	Deputy director of DARD, Head of Forest Protection Sub-department
2	Phan Thanh Tùng	X		Kinh	Head of Forest Protection and Management Division, Forest Protection Sub-department
3	Nguyễn Thị Thu Hằng		X	Kinh	Ranger of Forest Protection and Management Division, Forest Protection Sub-department
4	Nguyễn Xuân Linh	X		Kinh	Ranger of Forest Protection and Management Division, Forest Protection Sub-department
5	Lê Anh Tuấn	X		Kinh	Head of Legislative division, Forest Protection Sub-department
2. Provincial Department of Natural Resources and Environment					
1	Nguyễn Hùng Mạnh	X		Kinh	Deputy director of DONRE
2	Hồ Nhật Lệ		X	Kinh	Head of Planning division
3	Võ Văn Tùng	X		Kinh	Deputy head of Land Registration division
4	Lê Văn Hòa	X		Kinh	Deputy head of Land Administration and Mapping division
5	Nguyễn Thị Mỹ Hạnh		X	Kinh	Deputy chief of Land Inspection, MONRE

Table 7.4. List of people participated in the SESA consultations in Thua Thien Hue and Quang Tri provinces during November 4 to 12, 2015

No	Name	Sex		Ethnicity	Position and address
		Male	Female		
I. Thua Thien Hue province					
1. Forestry Development Sub-department (November 4, 2015)					
1	Đinh Đại Bính	X		Kinh	Deputy head
2	Trần Vũ Ngọc Hùng	X		Kinh	Officer, Member of province's PRAP taskforce
3	Trần Cảnh Quốc	X		Kinh	Officer, Deputy head of province's VFF, Member of province's PRAP taskforce
2. Province's CEM (November 4, 2015)					
1	Lê Văn Minh	X		Kinh	Head of Ethnicity Policy
II. Quang Tri province					
1. Provincial FCPF PPMU (November 13, 2015)					
1	Trần Hiệp	X		Kinh	Coordinator, PPMU
2	Hồ Sỹ Huy	X		Kinh	Head of Technical Division, Forestry Development Sub-department
3	Khổng Hữu Hùng	X		Kinh	Officer, PPMU
2. Province's CEM (November 13, 2015)					
1	Trần Văn Quảng	X		Kinh	Vice-chairman
2	Lê Hữu Tiến	X		Kinh	Head of Ethnicity Policy division
3	Nguyễn Thị Thương		X	Kinh	Deputy head of Planning division
3. Huong Hoa district, at District's Forest Protection Division (November 9, 2015)					
1	Võ Văn Sử	X		Kinh	Head of District's Forest Protection Division
2	Lê Hữu Tuấn	X		Kinh	Deputy head of district's CEM
3	Lê Thoại Tuấn	X		Kinh	Officer, Forest Resources Management division
4. Huong Hoa - Dak Rong Protection Forest Management Board (November 9, 2015)					
1	Nguyễn Công Tuấn	X		Kinh	Deputy director of the PFMB
2	Bùi Văn Thình	X		Kinh	Head of Planning and Technique division
3	Võ Đình Tuấn	X		Kinh	Deputy head of Forest Protection and Management division
5. Dak Rong District's Forest Protection Division (November 10, 2015)					
1	Tống Phước Châu	X		Kinh	Head of District's Forest Protection Division
2	Lê Thị An		X	Kinh	Officer, District's Division of Natural Resources and Environment
3	Hồ Văn Đang	X		Kinh	Deputy head of District's Division of Agriculture and Rural Development
4	Nguyễn Ái Lợi	X		Kinh	Head of district's CEM
5	Trần Quang Phục	S		Kinh	Deputy director of Dak Rong Natural Reserve
6. Bac Huong Hoa Natural Reserve (November 10, 2015)					
1	Hà Văn Hoan	X		Kinh	Deputy director of Bac Huong Hoa Natural Reserve
2	Trần Thị Việt Như		X	Kinh	Deputy head of Scientific and Technical division

No	Name	Sex		Ethnicity	Position and address
		Male	Female		
3	Nguyễn Mạnh Hà	X		Kinh	Technician
4	Trần Văn Hùng	X		Kinh	Technician
7. Huong Linh Commune People's Committee, Huong Hoa district (November 6, 2015)					
1	Hồ Văn Khéo	X		Vân Kiều	CPC chairman
2	Hồ Văn Giang	X		Vân Kiều	CPC vice-chairman
3	Hồ Quốc Việt	X		Kinh	Ranger
4	Ôn Quốc Sơn	X		Kinh	Commune's cadastral officer
5	Nguyễn Văn Hiếu	X		Kinh	Commune's socio-cultural officer
6	Hồ Văn Tường	X		Vân Kiều	Commune's cadastral officer
7	Hồ Thị Nguyệt		X	Vân Kiều	Chairwoman of Commune Women's Union
8	Hồ Văn Thết	X		Vân Kiều	Deputy head of Commune Youth Union
8. Ta Rut Commune People's Committee, Dak Rong district (November 11, 2015)					
1	Hồ Văn Quằm	X		Pa Cô	Vice-chairman of CPC
2	Hồ Thị Ngan		X	Pa Cô	Commune's cadastral officer
3	Khổng Hữu Nhi	X		Kinh	Ranger
4	Hồ Thị Lan		X	Pa Cô	Chairwoman of Commune Women's Union
9. Dak Rong Commune People's Committee, Dak Rong district (November 11, 2015)					
1	Hồ Nha	X		Vân Kiều	Vice-chairman of CPC
2	Trần Thị An		X	Kinh	Officer in charge of Poverty reduction
3	Nguyễn Thị Thạnh		X	Kinh	Officer in charge of Plan 600
4	Hồ Văn Thuần	X		Vân Kiều	Officer in charge of Agriculture
5	Đỗ Văn Năm	X		Kinh	Commune's cadastral officer
10. Hoong village, Huong Linh commune, Huong Hoa district (November 6, 2015)					
1	Hồ Văn Vân	X		Vân Kiều	Village head
2	Hồ Pỉ Hưng		X	Vân Kiều	Villager
11. A Dang village, Ta Rut commune, Dak Rong district (November 7, 2015)					
1	Hồ Văn Quằm	X		Pa Cô	Vice-chairman of CPC
2	Hồ Văn Lương	X		Pa Cô	Village head
3	Khổng Hữu Nhi	X		Kinh	Ranger
4	Hồ Văn Lương	X		Pa Cô	Villager
5	Hồ Văn Phong	X		Pa Cô	Villager
6	Hồ Văn Cân	X		Pa Cô	Villager
7	Hồ Văn Tưi	X		Pa Cô	Villager
8	Hồ Thị Lêm		X	Pa Cô	Villager
9	Hồ Thị Hiết		X	Pa Cô	Villager
10	Căn Cân		X	Pa Cô	Villager
11	Hồ Thị Phiêng		X	Pa Cô	Villager
12	Hồ Văn Hếp	X		Pa Cô	Villager
13	La Lay A Rơu	X		Pa Cô	Villager
14	Hồ Văn Cai	X		Pa Cô	Villager
15	Hồ Văn Hàm	X		Pa Cô	Villager
16	Hồ Văn Hới	X		Pa Cô	Villager
17	Hồ Văn Hưu	X		Pa Cô	Villager
18	Hồ Cu Dắc	X		Pa Cô	Villager
12. A Vuong village, Ta Rut commune, Dak Rong district (November 7, 2015)					

No	Name	Sex		Ethnicity	Position and address
		Male	Female		
1	Hồ Văn Bênh	X		Pa Cô	Village head
2	Hồ Văn Thên	X		Pa Cô	Villager
3	Hồ Văn Ngói	X		Pa Cô	Villager
4	Hồ Văn Hắt	X		Pa Cô	Villager
5	Hồ Văn Hoạt	X		Pa Cô	Villager
6	Hồ Văn Hở	X		Pa Cô	Villager
7	Hồ Văn Hợp	X		Pa Cô	Villager
8	Hồ Văn Điều	X		Pa Cô	Villager
9	Hồ Văn Bán	X		Pa Cô	Villager
10	Hồ Xuân Niên	X		Pa Cô	Villager
11	Hồ Thị Lý		X	Pa Cô	Villager
12	Hồ Thị Lao		X	Pa Cô	Villager
13	Hồ Thị Doan		X	Pa Cô	Villager
14	Hồ Thị Xưm		X	Pa Cô	Villager
15	Y Ngọc		X	Pa Cô	Villager
16	Hồ Văn Tuấn	X		Pa Cô	Villager
17	Hồ Văn Thái	X		Pa Cô	Villager
13. Ta Lenh village, Dak Rong commune, Dak Rong district (November 12, 2015)					
1	Hồ Văn Bút	X		Vân Kiều	Village head
2	Hồ Văn Hiền	X		Vân Kiều	Village police officer
3	Hồ Văn Hương	X		Vân Kiều	Village Farmer's Union
4	Hồ A Dia	X		Vân Kiều	Villager
5	Hồ Ta Rang	X		Vân Kiều	Villager
6	Hồ Lượt	X		Vân Kiều	Già làng
7	Hồ Văn Buân	X		Vân Kiều	Villager
8	Hồ Buôn Tha	X		Vân Kiều	Villager
9	Hồ Thị Hươi		X	Vân Kiều	Villager
10	Hồ Thị Ta Ơn		X	Vân Kiều	Villager
11	Dương Thị Nga		X	Vân Kiều	Villager
12	Hồ Thị Khảm		X	Vân Kiều	Villager
13	Hồ Vinh Quang	X		Vân Kiều	Villager
14	Hồ Thị Dơn		X	Vân Kiều	Villager
15	Hồ Thị Xa		X	Vân Kiều	Villager
16	Hồ Thị Rơi		X	Vân Kiều	Villager
17	Hồ Thị Biên		X	Vân Kiều	Villager
18	Hồ Thị Phing		X	Vân Kiều	Villager
19	Hồ Văn Hải	X		Vân Kiều	Village livelihood staff
14. Cat village, Dak Rong commune, Dak Rong district (November 12, 2015)					
1	Hồ Văn Long	X		Vân Kiều	Village head
2	Hồ Văn Hiếu	X		Vân Kiều	Villager
3	Hồ Văn Lôi	X		Vân Kiều	Villager
4	Hồ Văn Yên	X		Vân Kiều	Villager
5	Hồ Văn Cha	X		Vân Kiều	Villager
6	Hồ Văn Hường	X		Vân Kiều	Village elder
7	Hồ Văn Ing	X		Vân Kiều	Villager
8	Hồ Văn Kiềm	X		Vân Kiều	Villager
9	Hồ Văn Phăn	X		Vân Kiều	Villager
10	Hồ Văn A Riêm	X		Vân Kiều	Villager

No	Name	Sex		Ethnicity	Position and address
		Male	Female		
11	Hồ Thị Cam		X	Vân Kiều	Villager
12	Hồ Thị Trường		X	Vân Kiều	Villager
13	Hồ Thị Ven		X	Vân Kiều	Villager
14	Hồ Thị Đục		X	Vân Kiều	Villager
15	Hồ Thị Măn		X	Vân Kiều	Villager
16	Hồ Thị Đình		X	Vân Kiều	Villager
17	Hồ Thị Mia		X	Vân Kiều	Villager
18	Hồ Thị Cúc		X	Vân Kiều	Villager
19	Hồ Thị Mai		X	Vân Kiều	Villager
20	Hồ Thị Xa Âm		X	Vân Kiều	Villager
21	Hồ Thị Của	X		Vân Kiều	Villager
22	Hồ Văn Lu	X		Vân Kiều	Villager
III. Non-governmental Organizations					
1. Centre for Social Research and Development (CSRD) (November 4, 2015)					
1	Lâm Thị Thu Sửu		X	Kinh	Director
2	Ms My		X	Kinh	Vice-Director
2. Centre for Rural Development in Central Vietnam (CRD) (November 5, 2015)					
1	Phạm Nguyễn Thành	X		Kinh	
3. Consultative and Research Center on Natural Resources Management (CORENAM) (November 5, 2015)					
1	Ngô Trí Dũng	X		Kinh	Chairman of Executive Board

Table 7.5 List of people participated in the SESA consultations in Nghe An province during January 13 to 20, 2016

No	Name	Sex		Ethnicity	Position and address
		Male	Female		
1. Forest Protection Sub-department (January 13, 2016)					
1	Nguyễn Thanh Hoàng	X		Kinh	Deputy head
2	Nguyễn Hải Âu	X		Kinh	Deputy head of Forest Protection and Management Division
2. Con Cuông DPC (January 14, 2016)					
1	Hoàng Ngọc Thịnh	X		Kinh	Head of District's Forest Protection Division
2	Phan Thanh Hùng	X		Kinh	Acting head of district's Division of Natural Resources and Environment
3	Vi Thị Nguyệt		X	Thái	Head of district's CEM
4	Lang Văn Hưng	X		Thái	Deputy head of district's Division of Agriculture and Rural Development
5	Nguyễn Xuân Kiên	X		Kinh	Officer, district's CEM
3. Pù Mát National Park Management Board (January 14, 2016)					
1	Nguyễn Văn Sinh	X		Kinh	Deputy director
2	Lưu Trung Kiên	X		Kinh	Head of Science and International Cooperation division
3	Nguyễn Tiến Quang	X		Kinh	Deputy head of National Park protection division
4	Nguyễn Công Anh Tuấn	X		Kinh	Deputy head of Science and International Cooperation division
4. Con Cuông Protection Forest Management Board (January 14, 2016)					
1	Hồ Văn Hải	X		Kinh	Director of the PFMB

No	Name	Sex		Ethnicity	Position and address
		Male	Female		
2	Nguyễn Khắc Hùng	X		Kinh	Deputy director of the PFMB
3	Đặng Hồng Thanh	X		Kinh	Head of Forest Protection and Management division
5. Con Cuong SFC (January 14, 2016)					
1	Nguyễn Ngọc Lam	X		Kinh	Director
2	Trương Thế Ninh	X		Kinh	Head of Planning and Technique division
6. Tan Ky district (January 14, 2016)					
1	Đinh Văn Hải	X		Kinh	Deputy Director of Tan Ky PFMB
2	Nguyễn Hồng Hải	X		Kinh	Forestry officer of Dong Van commune, Tan Ky district
3	Bùi Bá Hợi	X		Kinh	Farmer, FSDP/WB3 project in Dong Van commune, Tan Ky district
7. Nghệ An Forestry Development Sub-department (January 20, 2016)					
1	Đặng Xuân Minh	X		Kinh	Head of NA FDS
8. Tương Dương DPC (January 18, 2016)					
1	Vi Vinh Sơn	X		Thái	Vice-chairman
2	Lương Văn Viện	X		Thái	Head of district's CEM
3	Võ Sĩ Lâm	X		Kinh	Head of district's Forest Protection division
4	Nguyễn Bùi Hùng	X		Kinh	Deputy head of district's Division of Natural Resources and Environment
5	Lô Văn Thanh	X		Thái	Deputy head of district's Division of Agriculture and Rural Development
9. Tương Dương Protection Forest Management Board (January 18, 2016)					
1	Ngũ Văn Trị	X		Kinh	Director
2	Nguyễn Công Mậu	X		Kinh	Deputy director
3	Phan Thạnh Thành	X		Kinh	Head of Planning and Technique division
4	Lê Đình Tuấn	X		Kinh	Head of Accounting division
10. Châu Khê CPC, Con Cuông district (January 14, 2016)					
1	Nguyễn Ngọc Luyến	X		Kinh	CPC chairman
2	Ngô Thanh Tài	X		Kinh	Commune's cadastral and environment officer
3	Lương Văn Ý	X		Kinh	Commune's agriculture officer
4	Nguyễn Xuân Kiên	X		Kinh	Officer, district's CEM
5	La Văn Nam	X		Thái	Officer, district's CEM
6	Nguyễn Thế Anh	X		Kinh	Commune's socio-cultural officer
7	Phan Thị Hiền		X	Kinh	Commune's cadastral officer
11. Tam Hợp CPC, Tương Dương district (January 15, 2016)					
1	Nguyễn Anh Minh	X		Kinh	CPC chairman
2	Vi Mạnh Cầm	X		Thái	CPC vice-chairman
3	Vi Thị Đăm Thúy		X	Thái	Commune's cadastral and construction officer
12. Lượng Minh CPC, Tương Dương district (January 19, 2016)					
1	Vi Đình Phúc	X		Thái	CPC chairman
2	Nguyễn Văn Là	X		Thái	Commune's cadastral officer
3	La Thị Thu		X	Thái	Commune's statistic officer
4	Lê Thanh Liêm	X		Kinh	Commune's agriculture officer

No	Name	Sex		Ethnicity	Position and address
		Male	Female		
5	Lô Văn Hùng	X		Thái	CPC vice-chairman
13. Châu Sơn village, Châu Khê commune, Con Cuông district (January 14, 2016)					
1	La Văn Thành	X		Đan Lai	Village head
2	La Văn Châu	X		Đan Lai	Villager
14. Thìn hamlet, Mọi village, Lục Giả commune, Con Cuông district (January 16, 2016)					
1	La Thị Hương		X	Đan Lai	Villager
2	Vi Văn Hưng	X		Thái	Villager
3	Viềng Văn Chiến	X		Đan Lai	Villager
4	Vi Văn Tiên	X		Đan Lai	Head of hamlet
5	Lương Thị Ba		X	Thái	Villager
6	La Thị Hồng		X	Đan Lai	Villager
7	La Thị Hằng		X	Đan Lai	Villager
8	Vi Thị Phượng		X	Đan Lai	Villager
9	Vi Văn Ngọ	X		Thái	Villager
10	La Văn Cương	X		Đan Lai	Villager
15. Huổi Sơn village, Tam Hợp commune, Tương Dương district (January 17, 2016)					
1	Vừ Tồng Lông	X		H'Mông	Trưởng bản
2	Vừ Chia Lông	X		H'Mông	Villager
3	Vừ Nhia Thông	X		H'Mông	Villager
4	Xồng Buôn Giờ	X		H'Mông	Villager
5	Xồng Bá Khư	X		H'Mông	Villager
6	Xồng Bá Chi	X		H'Mông	Villager
7	Xồng Bá Mùa	X		H'Mông	Villager
8	Vừ Y Hờ		X	H'Mông	Villager
9	Hờ Y Mái		X	H'Mông	Villager
10	Già Y Pà		X	H'Mông	Villager
11	Vừ Bá Rê	X		H'Mông	Villager
12	Xồng Bá Chư	X		H'Mông	Villager
III. Civil Society Organizations in Nghe An (CSO) (January *20, 2016*)					
1	Cao Tiến Trung	X		Kinh	Center for Environment and Rural Development (CERD) -University of Vinh
2	Cao Cự Thành	X		Kinh	Center for Environment and Rural Development (CERD) -University of Vinh
3	Cao Tiến Dũng	X		Kinh	Center for Environment and Rural Development (CERD) -University of Vinh
4	Trần Quang Trung	X		Kinh	Centre for Sustainable Environment Development (RESED)
5	Lê Đại Thắng	X		Kinh	Nghe An Forest Sub-department
6	Phan Quang Tiến	X		Kinh	Nghệ An Center for Consultation on Forestry Development (NACFCFD)
7	Trần Minh Doãn	X		Kinh	Nghe An Association of Agricultural Sciences and Techniques
8	Nguyễn Khắc Lâm	X		Kinh	Nghe An Forest Fund
9	Nguyễn Tiến Lâm	X		Kinh	Deputy director of DARD
10	Nguyễn Quốc Toàn	X		Kinh	Deputy head of Planning and Financial division, DARD
11	Nguyễn Văn Hội	X		Kinh	Forest Protection Centre
12	Nguyễn Viết Nghị	X		Kinh	VFD project

Table 7.6. List of people participated in the SESA consultations in in Quang Binh province during October 05 to 08, 2014

Time: 06/10/2014
Location: Quang Binh Sub-division of Forest Protection meeting hall

No	Full name	Title	Organization	Contact number/Email
1	Dương Viết Tuấn	Officer	Quang Ninh Ethnicity division	0985 479 707 Viettuan77@gmail.com
2	Hoàng Văn Trung	Officer	Quang Ninh NRE division	0169 707 7524 hoangtrungqld@gmail.com
3	Phạm Mậu Tài	Giám đốc	RDPR	phammautai@yahoo.com
4	Phan Đức Hạnh	Officer	RDPR	01688 707 889 Duchanh701@gmail.com
5	Nguyễn Trường Hải	Officer	Long Đại SEC	haigtzqbinh@yahoo.com.vn
6	Maximilian Roth	Expert	GIZ	0122 865 9801 Maximilian.roth@giz.de
7	Nguyễn Thị Quỳnh Phương	Teacher	Quang Binh University	0935 226 626
8	Trần Quang Bưu	Ranger	Quang Ninh SDFP	0917 481 568
9	Nguyễn Văn Hợp	Project officer	GIZ	nguyenvanhop@gmail.com
10	Nguyễn Hông Thảo	Translator	GIZ	Hongthao1987@gmail.com
11	Phùng văn Kiên	Field officer	FCPF, Dak Nong	
12	Đỗ Văn Đạt	Communication staff	FCPF, Dak Nong	
18	Lê Huy	Reporter	Quang Binh TV	
19	Quang Ngọc	Reporter	Quang Binh TV	
20	Trương Văn Minh	Reporter	Quang Binh Newspaper	

Time: 07/10/2014
Location: Lam Thuy CPC meeting hall

No	Full name	Title	Organization	Contact number/Email
1	Phan Văn Chức	Technician	Le Thuy SDFP	0905 885 535 phanvanchucln@gmail.com
2	Hoàng Văn Lộc	Ranger	Le Thuy SDFP	0917 252 467 Hoanglocqb255@gmail.com
3	Nguyễn Hông Thảo	Translator	GIZ	0985 087 178 Hongthao1987 @gmail.com
4	Maximilium Roth	Expert	GIZ	0122 865 9801 Mmaximilian.roth @giz.de
5	Nguyễn Văn Dần	Land officer	Lâm Thuỷ CPC	
6	Phạm Văn Thảo	Agricultural officer	Lâm Thuỷ CPC	0915 30 858
7	Hồ Văn Bày	Head of Youth Union	Lâm Thuỷ CPC	
8	Hồ Thị Lan	Head of Women Union	Lâm Thuỷ CPC	0127 202 1200
9	Hoàng Lý	CPC chairman	Lâm Thuỷ CPC	0125 740 1016
10	Hồ Thanh Mùi	Head of Fatherland front	Lâm Thuỷ CPC	
11	Hoàng Kim	CPC Party secretary	Lâm Thuỷ CPC	0912 631 297
12	Hồ Văn Thăng	Village head	Mới village	
13	Hoàng Cường	Village party secretary	Mới village	
14	Hồ Văn Lứa	Village head	Xà Khía village	

15	Hồ Văn Dự	Head of Farmer Union	Lâm Thuỷ CPC	0948 139 327
16	Nguyễn Thị Quỳnh Phương	Teacher	Quang Binh University	0935 226 626 Quynhphuong304@gmail.com
17	Phạm Mậu Tài	Director	RDPR	
18	Nguyễn Hữu Hán	Head of division	Le Thuy Ethnicity division	Hannguyenhuu75@gmail.com
19	Nguyễn Văn Hợp	Project officer	GIZ	Hop.nguyen@giz.de
20	Đỗ Văn Đạt	Communication staff	FCPF, Dak Nong	
26	Phạm Văn Bút	Head of division	Quang Binh SDFP	

Time: 07/10/2014
Location: Xa Khia village meeting hall

No	Full name	Gender	Age	Peoples	Address
1	Hoàng Thị Quyết	Female	30	Van Kieu	Head of Women union, Xa Khia village
2	Hoàng Biên	Male	70	Van Kieu	Party secretary, Xa Khia village
3	Hồ Y Bàn	Male	75	Van Kieu	Xa Khia villager
4	Hồ Văn Lứa	Male	36	Van Kieu	Xa Khia village head
5	Nguyễn Thị Toa	Female	63	Van Kieu	Xa Khia villager
6	Hoàng Bắc	Male	46	Van Kieu	Xa Khia villager
7	Hồ Văn Do	Male	30	Van Kieu	Commune forestry
8	Hoàng Ky	Male	26	Van Kieu	Xa Khia villager
9	Hồ Miệt	Male	58	Van Kieu	Xa Khia villager
10	Hồ Văn Biên	Male	20	Vân Kiều	Moi villager
11	Hồ Văn Thăng	Male	27	Van Kieu	Moi village head
12	Hoàng Bảo	Male	70	Vân Kiều	Head of Elder of Xa Khia village
13	Hoàng Thị Quế	Female	25	Van Kieu	Moi villager
14	Hoàng Thị Dung	Female	37	Van Kieu	Moi villager
15	Hồ Thị Thoa	Female	41	Van Kieu	Moi villager
16	Hoàng Thị Xay	Female	27	Van Kieu	Deputy head of Women union, Moi village
17	Hồ Thị Thanh	Female	35	Van Kieu	Moi villager
18	Hồ Văn Triển	Male	27	Van Kieu	Xa Khia villager
19	Hồ Văn Thuần	Male	35	Van Kieu	Moi villager
20	Hồ Thị Mới	Female	28	Van Kieu	Moi villager

Table 7.7. List of people participate din the SESA consultations in Quang Binh province during October 28 to November 01, 2014

No	Name	Sex		Ethnicity	Position and address
		Male	Female		
1. Cổ Tràng village, Trường Sơn commune, Quảng Ninh district (November 30, 2014)					
1	Hồ Thị Lôm		F	Vân Kiều	Co Trang villager
2	Nguyễn Thị Muôn		F	Vân Kiều	Co Trang villager
3	Hồ Thị Khe		F	Vân Kiều	Co Trang villager
4	Nguyễn Thị Hà		F	Vân Kiều	Co Trang villager
5	Hồ Thị Kết		F	Vân Kiều	Co Trang villager
6	Nguyễn Th ị Yến		F	Vân Kiều	Co Trang villager
7	Nguyễn Văn Lành	M		Vân Kiều	Village Party's member
8	Hồ Đội	M		Vân Kiều	Co Trang village
9	Nguyễn Văn Bươm	M		Vân Kiều	Co Trang village
10	Hồ Chon	M		Vân Kiều	Co Trang village elder
11	Hồ Sỹ	M		Vân Kiều	Co Trang villager
12	Hồ Nguyệt	M		Vân Kiều	Co Trang villager
13	Hồ Văn Linh	M		Vân Kiều	Co Trang villager
14	Hồ Thị Phòn		F	Vân Kiều	Co Trang villager
15	Nguyễn Thi Lan		F	Vân Kiều	Co Trang villager
16	Hồ Thị Thảo		F	Vân Kiều	Co Trang villager
17	Hồ Thị Phong		F	Vân Kiều	Co Trang villager
18	Hồ Thị Mến		F	Vân Kiều	Co Trang villager
19	Nguyễn Thị Muôn		F	Vân Kiều	Co Trang villager
20	Hồ Thị Phương		F	Vân Kiều	Co Trang villager
21	Hồ Thị Nhé		F	Vân Kiều	Co Trang villager
22	Hồ Thị Thế		F	Vân Kiều	Co Trang villager
23	Hồ Thị Phò		F	Vân Kiều	Village health worker
24	Hồ Thị Vành		F	Vân Kiều	Co Trang villager
25	Nguyễn Thị Tầm		F	Vân Kiều	Co Trang villager
26	Hồ Thị Vân (Đoàn)		F	Vân Kiều	Co Trang villager
27	Hồ Thị Vân (Thâng)		F	Vân Kiều	Co Trang villager
28	Nguyễn Thị Bé		F	Vân Kiều	Co Trang villager
29	Nguyễn Thị Bình		F	Vân Kiều	Co Trang villager
30	Nguyễn Văn Sơn	M		Vân Kiều	Co Trang villager
31	Hồ Cung	M		Vân Kiều	Co Trang villager
32	H ồ Khun	M		Vân Kiều	Co Trang villager
33	Hồ Thị Bé		F	Vân Kiều	Co Trang villager
34	Hồ Thung	M		Vân Kiều	Co Trang villager
35	Hồ Thị Côn		F	Vân Kiều	Co Trang villager
36	Hồ Thị Ven		F	Vân Kiều	Co Trang villager
37	Hồ Thị Giáo		F	Vân Kiều	Co Trang villager
38	Hồ Thị Thoả		F	Vân Kiều	Co Trang villager
39	Hồ Thị Chủ		F	Vân Kiều	Co Trang villager
40	Hồ Nhu (Ya pu)	M		Vân Kiều	Co Trang villager

No	Name	Sex		Ethnicity	Position and address
		Male	Female		
41	Hồ Kà	M		Vân Kiều	Co Trang villager
42	Hồ Khăm Mun	M		Vân Kiều	Co Trang villager
43	Hồ Thị Ngãi		F	Vân Kiều	Co Trang villager
44	Hồ Thị Tim		F	Vân Kiều	Co Trang villager
45	Hồ Thị Nở		F	Vân Kiều	Co Trang villager
46	Hồ Thị Diên		F	Vân Kiều	Co Trang villager
47	Nguyễn Văn Bền	M		Vân Kiều	Co Trang village head
48	Hồ Thị Bình		F	Vân Kiều	Co Trang villager
1. Khe Cat village, Trường Sơn commune, Quảng Ninh district (November 31, 2014)					
1	Hồ Thị Phương		F	Vân Kiều	Khe Cat villager
2	Nguyễn Thị Vơn		F	Vân Kiều	Khe Cat villager
3	Hồ Thị Phương Thao		F	Vân Kiều	Khe Cat villager
4	Nguyễn Thị Huế		F	Vân Kiều	Khe Cat villager
5	Hồ Thị Sung		F	Vân Kiều	Khe Cat villager
6	Nguyễn Thị Ốc		F	Vân Kiều	Khe Cat villager
7	Hồ Thị Liễu		F	Vân Kiều	Khe Cat villager
8	Hồ Thị Hồng		F	Vân Kiều	Head of village Women's Union
9	Hồ Thị Thạch		F	Vân Kiều	Village farther land front
10	Hồ Thị Phi		F	Vân Kiều	Vice-head of village Women's Union
11	Hồ Thị Ác		F	Vân Kiều	Khe Cat villager
12	Hồ Thi		F	Vân Kiều	Khe Cat villager
13	Nguyễn Thị Hề		F	Vân Kiều	Khe Cat villager
14	Hồ Thị Mun		F	Vân Kiều	Khe Cat villager
15	Hồ Đài	M		Vân Kiều	Khe Cat villager
16	Trần Văn Sỹ	M		Vân Kiều	Khe Cat villager
17	Trần Phúc	M		Vân Kiều	PLAN project officer
18	Hồ Văn Ai	M		Vân Kiều	Village elder
19	Trần Văn Vui	M		Vân Kiều	Head of village youth union
20	Nguyễn Văn Hùng	M		Vân Kiều	Deputy head of village youth union
21	Hồ Văn Thiết	M		Vân Kiều	Commune party member
22	Trần Văn Dự	M		Vân Kiều	Khe Cat villager
23	Hồ Văn Việt	M		Vân Kiều	Village youth union
24	Nguyễn Văn Phích	M		Vân Kiều	Khe Cat villager
25	Hồ Văn Nang	M		Vân Kiều	Khe Cat villager
26	Hồ Thị Tiêu		F	Vân Kiều	Khe Cat villager
27	Nguyễn Văn Tráng	M		Kinh	Head of Commune Fatherland Front
28	Nguyễn Văn Thái	M		Kinh	Commune justice
29	Trần Văn Vỹ	M		Vân Kiều	Khe Cat villager
30	Hồ Thị Ven		F	Vân Kiều	Khe Cat villager
31	Nguyễn Thị Đan		F	Vân Kiều	Khe Cat villager
32	Trương Thị May		F	Vân Kiều	Khe Cat villager

Table 7.8. List of people participated in the SESA consultations in Thanh Hoa province during November 3 to 18, 2015

No	Name	Sex		Ethnicity	Position and address
		Male	Female		
1. Thanh Xuân CPC, Quan Hóa district (November 18, 2015)					
1	Phạm Hồng Tia	X		Thái	Chairman
2	Phạm Thị Kim		X	Thái	Commune Women's Union Vice-chairwoman
3	Phạm Thị Thu Phương		X	Thái	Commune Ethnicity-Culture officer
4	Phạm Văn Thông	X		Thái	Commune agi-extension worker
5	Cao Văn Hoanh	X		Thái	Commune agriculture officer
6	Cao Văn Định	X		Thái	Commune cadastral officer
2. Lang Chánh DPC (November 19, 2015)					
1	Lương Đức Thuận	X		Thái	Head of district's CEM
2	Mai Văn Nguyên	X		Kinh	Officer of Forest Protection division
3	Lê Quang Tùng	X		Thái	Officer of Agriculture and Rural Development division
4	Nguyễn Viết Thắng	X		Kinh	Deputy head of Agriculture and Rural Development division
5	Nguyễn Văn Long	X		Kinh	Deputy head of Natural Resources and Environment division
3. Lang Chánh district's PFMB (November 19, 2015)					
1	Lê Quang Tùng	X		Thái	Officer of Agriculture and Rural Development division
2	Hoàng Thị Tuyết		X	Kinh	Head of Administrative division
3	Mai Bá Đính	X		Kinh	Deputy head of Planning division
4. Tân Phúc CPC, Lang Chánh district (November 20, 2015)					
1	Lê Trung Chớng	X		Thái	Chairman
2	Lê Văn Hoàng	X		Thái	Vice chairman
3	Lê Văn Thắng	X		Thái	Commune culture officer
4	Lê Văn Phúc	X		Thái	Commune cadastral officer
5	Mai Xuân Thao	X		Kinh	Commune cadastral and construction officer
5. Tân Sơn village, Tân Phúc commune, Lang Chánh district (November 20, 2015)					
1	Lê Văn Ứng	X		Mường	Village head
2	Lê Văn Ún	X		Mường	Village police officer
3	Lê Phi Quyết	X		Mường	Chairman of Farmer's Association
4	Lê Văn Nghĩa	X		Mường	Villager
5	Lê Thị Nga		X	Mường	Villager
6	Hà Thị Lý		X	Mường	Villager
7	Lê Xuân Vinh	X		Mường	Villager
8	Lê Văn Thí	X		Mường	Village elder
9	Hà Thị Diễn		X	Mường	Villager
10	Lê Thị Khâm		X	Mường	Villager
11	Lê Thị Lưu		X	Mường	Villager

No	Name	Sex		Ethnicity	Position and address
		Male	Female		
12	Lê Phi Sơ		X	Mường	Villager
13	Lê Thị Quỳnh		X	Mường	Villager
14	Lê Thị Mùi		X	Mường	Villager
15	Lê Ngọc Hình	X		Mường	Villager
16	Lê Phi Nguyên	X		Mường	Villager
17	Lê Văn Hoành	X		Mường	Villager
18	Lê Văn Quỳnh	X		Mường	Villager

Table 7.9. List of people participate din Benefit sharing consultation in the ER-P in the North Central Costal region in Quang Tri province from 17 – 27 May 2016

TT	First and last name	Sex		Nation	Address
		Male	Female		
1. Huc Nghi Village, Huc Nghi commune, Dakrong District (Afternoon 18/5/2016)					
1	Hồ Thị Dế		x	Vân Kiều	
2	Hồ Thị xã Lý		x	x	
3	Hồ Thị Thái		x	x	
4	Hồ THị Lựu		x	x	
5	Hồ Thị Bảy		x	x	
6	Hồ Thị Trầm		x	x	
7	Hồ Thị Heo		x	x	
8	Hoàng Đình Toàn	x			Officer in charge of agricultural commune
9	Họ Văn Phin	x		x	Secretary of the Party
10	Hồ Y Ta	x		x	Head Village
11	Hồ A Ròng	x		x	Poor
12	Hồ Văn Điều	x		x	Poor
13	Hồ Văn Thông			x	Poor
13	Hồ Thị Sắc		x	x	Famer
2. Dakrong nature reserve (Morning 19/5/2016)					
1	Ngô Văn Thái	x		Kinh	Director
2	Hoàng Văn Chiến	x		x	Manager
3. Cop, La To Village, Huc Nghi commune, Dakrong Dístrict (Afternoon19/5/2016)					
1	A Roi	x		Vân Kiều	Head Village (La To)
2	Hồ Văn Rông	x		x	Secretary of the Party(La To)
3	Hồ Văn Oi	x		x	Farmer
4	Hồ Văn Kiều	x		x	x
5	Hồ Văn Thao	x		x	x
6	Hồ Thị Phỉ		x	x	x
7	Hồ Thi Dun		x	x	x
8	Hồ Thị Phay		x	x	x
9	Hồ Thị Liên		x	x	x
10	Hoàng Chiến Duy	x		Kinh	Deputy Chief Ranger Station
11	Hồ Văn Tới			Kinh	Ranger
12	Hồ Vân Vu	x		Vân Kiều	Farmer
13	Hồ Văn An	x		x	Deputy head village(cop Village)
14	Hồ Thị La		x	x	Preschool teachers
15	Hồ Thị Vang		x	x	Farmer
16	Hồ Thị Dấp		x	x	Health village

TT	First and last name	Sex		Nation	Address
		Male	Female		
4. Phương Lang Village, Hai Ba commune, Hai Lang Dítrict (Morning 20/5/2016)					
1	Võ Văn Dũng	x		Kinh	Farmer
2	Võ Viết Bút	x		x	x
3	Nguyễn Vọng	x		x	x
4	Đoàn Thị Lan		x	x	x
5	Lê Đức Thừa			x	x
6	Nguyễn Quang Đạt	x		x	s
7	Nguyễn Minh	x		x	x
8	Lê Đức Trị	x		x	x
9	Nguyễn Thị Thiệp		x	x	x
10	Nguyễn Kỹ	x		x	x
11	Nguyễn Bí	x		x	x
12	Nguyễn Thành	x		x	x
13	Võ Viết Phương	x		x	x
14	Nguyễn Thị Hằng		x	x	x
5 Kim Giao Village, Hai Duong commune, Hai lang District (Afternoon 20/5/2016)					
1	Trần Thị Nguyệt		x	Kinh	Farmer
2	Phan Thị Thúy		x	x	x
3	Nguyễn Thị Hà		x	x	x
4	Trương Thị Mỹ Dung		x	x	The head of Women's Union
5	Lê Thị Phương		x	x	Farmer
6	Hồ Thị Mạnh		x	x	Chairman of the Veterans
7	Hoàng Công Thương	x		x	Youth secretary
8	Tạ Thanh Bình	x		x	Head of the National Front
9	Võ Minh Đức	x		x	Secretary of the Party
10	Trần Cao Bằng	x		x	Head village
11	Võ Ngọc Lân	x		x	Veterans
12	Võ Văn Lân	x		x	Poor
13	Võ Công	x		x	Near Poor
14	Võ Sương	x		x	Near Poor
15	Dương Văn Hảo	x		x	Near Poor
16	Hồ Thị Thới		x	x	Farmer
6. Ben Hai forestry Company (Afternoon 23/5/2016)					
1Nguyễn Viết Thống		x		x	Deputy Director
2Trần Hậu Ngọ		x		x	Head of business plan
3Nguyễn Văn Trung		x		x	Director Unit 3
7. Khe Ho Village, Vinh Ha commune, Vinh linh District (Morning 24/5/2016)					
1Hồ Thị Hân			x	Vân Kiều	The head of Women's Union
2Hồ Thị Xương			x	x	Farmer
3Hồ Văn Tĩnh		x		x	Head village
4Hồ Xuân Quỳ		x		x	Veterans
5Hồ Vắn Riêng		x		x	Farmer
6Mai Thị Hồng			x		x
7Hồ Văn Ga		x		x	x
8Hồ Vân Ngọc			x	x	x
9Hồ Văn Cả		x		x	x
10Hồ Văn Lành		x		x	Farmer associations
11 Hồ Thị Cường			x	x	Head of the National Front
12Vũ Văn Sanh		x		x	Framer
8. Khe Tru Village, Vinh Ha commune, Vinh Linh District (Afternoon24/5/2016)					
1Hồ Vân Hương		x		Vân Kiều	Farmer
2Hồ Vân Hồng		x		x	x

TT	First and last name	Sex		Nation	Address
		Male	Female		
3Hồ Thị Lụt			x	x	x
4Hồ Thị Cơm			x	x	x
5Hồ Thị Hương			x	x	x
6Hồ Thị Chương			x		x
7Hồ Thị Liên			x	x	x
8Hồ Thị Gái			x	x	x
9Hồ KRai		x		x	x
10 Hồ Vân Chương		x		x	x
11Hồ Vân Thư		x		x	Head of the National Front
12Hồ Vân San		x		x	Secretary of the Party
13Hồ Thị Lài			x	x	The eldly associations
14 Hồ Văn Lương		x		x	Farmer
9. Raly Village, Huong Son commune, Huong Hoa District					
1Hồ Văn Thứ		x		Vân Kiều	Head Village
2Hồ Văn Sữa		x		x	Village Police
3Hồ Văn Phán		x		x	Farmer
4Hồ Văn Thương		x		x	x
5Hồ Văn Ngân		x		x	x
6Hồ Văn Phong		x		x	x
7Hồ Văn Khiên		x		x	x
8Hồ Văn Cường		x		x	x
10. Moi Village, Huong Son commune, Huong Hoa District					
1Hồ Văn Vương		x		Vân Kiều	Head Village
2Hồ Văn Núi		x		x	Deputy Head Village
3Hồ Văn Toàn		x		x	Farmer
4Hồ Văn Thành		x		x	x
5Hồ Văn Tạo		x		x	Village police
6Hồ Thị Nhương			x	x	Farmer
7Hồ Vắn Thái		x		x	x
8Hồ Văn Nan		x		x	x
9Hồ Văn Long		x		x	x
10 Hồ Thị Niệm			x	x	Women Associations
11Hồ Thị Thiết			x	x	Farmer
12Hồ Văn Lực		x			Farmer
13Hồ Văn Anh		x			Farmer
14Hồ Ta Đooc		x			Veterans
15Hồ Thị Tư			x		Farmer
11. Huong Hoa Nature reserve (26/5)					
1Hà Văn Hoan		x		Kinh	Deputy Director
2Nguyễn Mạnh Hà		x		x	Ranger
3Trần Thị Kim Liên		x		x	Staff
4Trần Thị Việt Thư		x		x	Staff
12. Quang Tri DARD (Morning 27/5)					
1Khổng Trung		x		Kinh	Deputy Director, Head of the department of rangers
2Trần Hiệp		x		x	FPD

8 Annex 8: Analysis of deforestation and forest degradation patterns in the REL and linkage to the proposed REDD+ intervention models

To link the REDD+ intervention with the drivers and ensure that GHG emission reduction estimates are fully consistent with section 4, 13 and section 8 initially an area wise assessment was carried out to assess the key sources of deforestation and deforest degradation. For this an analysis of the historical land use change matrices was carried out.

- For the quantification of the avoided deforestation and forest degradation, initially the RL land use change matrices in the natural forest land use classes - "evergreen broadleaves forest – high", "evergreen broadleaves forest – medium" and "evergreen broadleaves forest – poor" as well as the deforestation of evergreen broadleaves forest - poor to non-forest land was analysed. In these land use classes, the majority of deforestation and forest degradation has occurred historically (see Table 1.1 below).
- Between 2000-2010, the total evergreen broadleaves forest degradation amounted to 272,826 ha. The degradation area equals to 15% of the total natural forest area in 2000 in the ER-P Accounting Area. The major driver of this forest degradation is attributable to illegal logging and illegal overexploitation of natural forest. Once the natural forest achieves a relative poor forest status (poor), there is a strong trend towards deforestation for agricultural land use (see below).
- Deforestation was 301,950 ha between the period 2000 - 2010. Deforestation in natural forest forests amounts to 184,996 ha while the remaining deforestation occurred on plantation or other forest land. Out of this natural forest deforestation area 163,029 ha 88% occurred in "evergreen broadleaves forest – poor" (or 54% of total deforestation occurred in this land use class).
- The major driver behind this change is at the first step natural forest degradation, followed by a conversion to agricultural land.

8.1 Historical forest degradation dynamics in natural forest

- The conversion of "evergreen broadleaves forest – rich" to "evergreen broadleaves forest – medium" area change between 2000 and 2005 was 48,684 ha and between 2005 – 2010, 17,593 ha were degraded (in total 66,277 ha or 24% of total forest degradation in the ER-P Accounting Area) (see also Table below 8.1 *"ER-Program areas compared to total areas and historical deforestation"*).
- The forest degradation dynamics form evergreen broadleaves forest - rich towards evergreen broadleaves forest - poor were significantly lower: Between 2000 and 2005, the area change amounted to only 8,267 ha and between 2005 – 2010 to only 12,454 ha. In total, this adds up to 20,721 ha or 8% of total forest degradation.
- The analysis of the evergreen broadleaves forest - medium land use class and transition towards evergreen broadleaves forest - poor land use class shows a forest degradation rate of 69,415 ha and 69,766 ha in 2000-2005 and 2005-2010, respectively. In total, this adds up to 139,181 ha or 51% of total forest degradation in the RL period.
- As a conclusion, the conversion of evergreen natural forest towards the next lower forest quality class over the RL period is responsible for about 75% of total forest degradation which the REDD+ intervention models (1 and 2) will address.

8.2 Historical deforestation dynamics in natural forests

- The analysis of deforestation of the evergreen broadleaves forest - poor land use class towards non-forest land shows that 95,649 ha were deforested between 2000 – 2005, while 67,380 ha were deforested between 2005 - 2010. In total this add up to 163,029 ha over 10 years which is equivalent to 54% of total deforestation in the ER-P area or 88% of the total deforestation in the natural forest land use class (Table 8.1 below).

Table 8.1 ER-Program areas compared to total areas and historical deforestation and forest degradation areas

Total area in 2010 according to activity data report (Dien, 2016) (ha)		Key land use changes leading to deforestation / forest degradation (2000-2010) (ha) (according to activity data report, Dien et al 2016		ER-P intervention to address drivers and enhance carbon stocks (ha)[7]		% intervention of the remaining forest area in the specific land use
Land use	**Area (ha)**	**Initial land use (2000) --> Current land use (2010)**	**Area (ha)**	**ER-P intervention model**	**Area over 8 years (ha)**	**% of remaining land use (2010)**
Evergreen broadleaves forest – rich	226,626 ha	Evergreen broadleaves forest – rich to medium (degradation)	-66,277 ha (24%[8] of total degradation)	Model 1: Forest protection of existing natural forest through contracts	61,260 ha	27%[9]
Evergreen broadleaves forest - medium	452,900 ha	Evergreen broadleaves forest - medium conversion to poor	-139,181 ha (51%[10] of total forest degradation)	Model 2. Natural assisted regeneration of medium quality forest / avoiding degradation (no planting	70,260 ha	16%
Evergreen broadleaves forest - poor	1,315,598 ha	Natural forest - poor to bare land / agricultural land	-163,950 ha (54% of total deforestation)	Model 3. Natural regeneration and enrichment planting of poor natural forest	64,200 ha	4.9%
Plantation area	637,561 ha	Increase of plantation area from non-forest land	+376,659 ha (60% of total area, partly includes replanting of harvested areas)	Model 6,7: Transformation of Acacia plantation	77,820 ha	12.2%
Non-forest land	2,372,977 ha	Bare land / non-forest land	-97,125 ha	Models 4,5,8: Afforestation Reforestation with pure Acacia and mixed species and offsetting of infrastructure and development	46,220 ha	1.9%
Total	**5,144,508 ha**				**319,760 ha[11]**	

[7] The REDD+ intervention models as well as the key underlying assumptions are presented and explained in detailed in the following sections.
[8] In terms of area, 24% of total area that is classified as degradation in the RL, occurred in this land use class.
[9] The 61,260 ha intervention area in this land use class represent 27% of the remaining 226,626 ha
[10] In terms of area, 51% of total area that is classified as degradation in the RL, occurred in this land use class. With the models 1 and 2, 75% of total degradation will be addressed.
[11] Additional 40,182 ha will be supported by the WB coastal forest development and rehabilitation and UNDP Green Climate Fund coastal climate resilience project

9 Annex 9: Design, scale and underlying assumptions of the ER-P intervention models

9.1 Identification of intervention models

Based on the abovementioned analysis, representative 1 ha models for the reference level scenario and the REDD+ scenario were designed and compared. These models are presented in Table 9.1 below. The reference scenario is the baseline land use that would occur in the absence of the ER-Program; hence, the related models have been used for opportunity cost assessment only. For the financial and economic analyses, only the REDD+ scenario models were used.

Table 9.1. One ha models of the ER-Program

Reference land use scenario	REDD+ activity	1-ha REDD+ scenario model	1-ha reference scenario model
Reducing deforestation and forest degradation activities (Component 2)			
Evergreen broadleaf rich natural forest to agricultural land use	Protection and sustainable management of evergreen broadleaf forest - rich quality	*NTFP - REDD+ scenario* (protecting the forest and NTFP production/harvest) **(Model 1)**	*Illegal cutting & Firewood - Reference scenario* (degrading and final conversion to agriculture by year 15)
Evergreen broadleaf medium natural forest to agricultural land use	Protection and natural regeneration, no planting of evergreen broadleaf forest – medium quality	*Natural regeneration - REDD+ scenario* (protecting the forest, no planting, and limited harvest of wood/firewood) **(Model 2)**	*Illegal cutting & Firewood - Reference scenario* (degrading and final conversion to agriculture by year 10)
Evergreen broadleaf poor natural forest to agricultural land use	Protection and natural regeneration with enrichment planting of evergreen broadleaf forest – poor quality	*Natural regeneration - REDD+ scenario* (protecting the forest, enrichment planting, and limited harvest of wood/firewood) **(Model 3)**	*Illegal cutting & Firewood - Reference scenario* (degrading and final conversion to agriculture by year 5)
Enhancement of forest carbon stocks activities (Component 3)			
Plantation forest - Acacia short rotation (6 years)	Transformation of short rotation Acacia to long rotation (12 years)	*Acacia plantation 12 year rotation - REDD+ scenario* (Acacia plantation, rotation increased from 6 to 12 years) **(Model 6)**	*Acacia short rotation - 6 years - Reference scenario* (Acacia plantation, harvested in year 6)
Plantation forest - Acacia short rotation (6 years)	Transformation of short rotation Acacia to mixed native species long rotation (20 years)	*Transition: Acacia hybrid in year 4 to native species - REDD+ scenario* (Acacia plantation converted to mixed Acacia and native species in year 4) **(Model 7)**	*Acacia short rotation - 6 years - Reference scenario* (Acacia plantation, harvested in year 6)

Reference land use scenario	REDD+ activity	1-ha REDD+ scenario model	1-ha reference scenario model
Barren land	Afforestation/Reforestation - Melia azedarach (8-year rotation)	*Melia azedarach - REDD+ scenario* (Melia plantation, harvested in year 8) **(Model 8)**	*Bare/Unforested land - Reference scenario* (land without vegetation cover, not under agriculture)
Barren land	Afforestation/Reforestation – Acacia long rotation (12 years)	*Acacia plantation 12 year rotation - REDD+ scenario* (Acacia plantation, harvested in year 12) **(Model 4)**	*Bare/Unforested land* - Reference scenario (land without vegetation cover, not under agriculture)
Barren land / Offsetting infrastructure	Afforestation/Reforestation - mixed Acacia and native species (50%:50%) (Also used as the basis for offsetting infrastructure and other development for roads and HPP)	*Restoration: planting 50% Acacia and 50 % native - REDD+ scenario* (mixed species plantation: 50-50 Acacia and native species, harvested in year 20) **(Model 5)**	*Bare/Unforested land* – (Does not assume the potential infrastructure, the cost and benefit of it)

- A financial analysis of the models is presented in the section 3.
- In addition to these 8 interventions models the World Bank is currently planning a large **Forest Sector Modernization and Coastal Resilience Enhancement Project (P157127)** in eight provinces including all the six ER-P accounting area provinces. The program is at the very inception and is expected to start implementation earliest in 2017. Preliminary estimates assume more than USD 130 million investments into coastal forest development and rehabilitation including investments in protection, enrichment planting and new coastal forest plantations and also infrastructure investments. The program protection and establishment of new plantation will buffer the impact of weather events in coastal areas and protect existing coastal forest carbon stocks and enhance forest carbon stocks by enrichment planting of existing sandy costal and mangrove forest.
- Since this project will significantly enhance forest carbon stocks in the accounting area, the planned interventions are also included in the overall financial/economics and ex-ante GHG emission reduction assessment. The following three models are proposed by the initial WB project preparation mission in June 2016.

Table 9.2. **One ha models of the ER-Program coastal resilience project**

Reference land use scenario	REDD+ activity
Component 4: Coastal forest development and rehabilitation	
Coastal sandy soil inland forest / mangroves forest	Protection and sustainable management of sandy soil inland forest or mangroves forest and sustainable use of fuelwood **(Model 9)**
Degraded coastal sandy soil inland forest or mangroves forest	Protection, enrichment planting of degraded of sandy soil inland forest or mangroves forest and sustainable use of fuelwood **(Model 10)**
Bare land / non forest land	Afforestation/Reforestation of sandy soil inland forest or mangroves forest and sustainable use of fuelwood **(Model 11)**

9.2 Scale and implementation of the ER-P REDD+ intervention models

- As deforestation and forest degradation is mainly concentrated in and around PFMBs, SUF MBs and SFCs, the ER-program intends to focus implementation of the ER-P on the level of these implementation units. The area assumptions are made per implementation entities, smallholder and households will participate in the program and an assumption is that about 20% of all assumed project area under PFMBs will be implemented by smallholders. For each province has an average number PFMBs[12], SUF MBs and SFCs and this was developed to scale land-based implementation activities for each province.
- The ER-P includes two main investment targets: i) smallholders and ii) large forest owners, government forest MBs and SFCs (SFCs include private the sector). The ER-P processes for working with the smallholders follow on from the FSDP approach with funding and links already in place with the VBSP. The work with the MBs and SFC follows a combination of the tried and tested approach of a simple investment grant based approach (as used in the FSDP) to help the management entities to meet investment criteria, combined with links to access to funding through the VBSP - to facilitate the investment work with the SUFs and PFMBs and on specific issues with SFCs and the approach has been adopted to:
    - Introduce a performance based approach which matches the overall CF approach to the ER-P;
    - Streamlines the packaging and processing of the provincial budgets and helps implementation over a large and diverse area different stakeholders with largely un-quantified individual socio-economic and environmental settings;
    - Facilitates the requirement to undertake detailed planning and capacity building exercise required in the PFMBs, SUF MBs and SFC for investments;
    - Facilitates specific solutions to specific management issues – a flexible approach to help address hotspots of degradation/ deforestation;
    - MBs are directly involved in detailed planning and have more ownership and are made more accountable;
    - Capacity building can be tailored to the MBs' wishes and needs and helps them take ownership;
    - Promotes an integrated approach between the MBs and local communities;
    - Helps leverage public finance for PFMBs and helps promote equitization/ and eventual private financing in the case of SFCs;
    - Helps leverage public finance for PFMB and SUF MBs; and
    - Facilitates and would be combined with the funding from the BSM and BSP for the SUFMBs; and The flexibility of funding in the process is a significant advantage as it can include front end funding and be supplemented by progressive top ups as funds are released from the CF[13].

[12] Note that a PFMB is allowed to manage 30% of the total forest cover as production forest – so a number have invested in short term acacia plantations and can therefore act in a similar way to the SFCs for that 30% of their estate.
[13] The GOV has signalled a strong commitment to the VCF as an effective financing mechanism under MARD and integrated under the umbrella of the Vietnam Fund for Forests (VNFF). The VNFF will also cover funding for payments for environmental services, REDD+.

- The following Table 2.3 summarizes the proposed different forest intervention models for the three main forest entities and is the result of discussion on estimates from the six provinces. The design of the various intervention models has taken account of sample consultations and on-going technical assistance work with the various entities as part of the PRAP, work plantation transformation models funded by BMUB[14] (see also section 5) and the SESA as required for the ER-PD by the FCPF CF.

Table 9.3. REDD+ activities implemented in respective implementing entities

REDD+ activity	Implementing entity			
	PFMB	SUF MB	SFC	Households/ cooperatives
Reducing deforestation / Reducing forest degradation (Component 2)				
1. Protection and sustainable management	☑	☑	☑	☑
2. Protection and natural regeneration, no planting	☑	☑	☑	☑
3. Protection and natural regeneration with enrichment planting	☑	☑	☑	
Carbon stock enhancement activities (Component 3)				
4. Transformation of short rotation Acacia to long rotation (12 years)	☑		☑	☑
5. Transformation of short rotation Acacia to mixed native species long rotation (20 years)	☑		☑	
6. Afforestation/Reforestation - *Melia azedarach* (8 year rotation)	☑		☑	☑
7. Afforestation/Reforestation – Acacia long rotation (12 years)	☑		☑	
8. Afforestation/Reforestation - mixed Acacia and native species (50%:50%)	☑		☑	
Coastal forest development and rehabilitation (Component 4)				
9. Protection and sustainable management of sandy soil inland forest or mangroves forest and sustainable use of fuelwood **(Model 9)**	☑	☑	☑	☑
10. Protection, enrichment planting of degraded of sandy soil inland forest or mangroves forest and sustainable use of fuelwood **(Model 10)**	☑	☑	☑	☑
11. Afforestation/Reforestation of sandy soil inland forest or mangroves forest and sustainable use of fuelwood **(Model 11)**	☑		☑	

- Key services available through the ER-P (and based on the FSDP) to facilitate smallholder plantations include inputs on nursery accreditation and improved seedling quality, improved silviculture and livelihoods training land survey, mapping, landscape and plantation design, Land use right certificate (LURC) processing, application and credit processes for VBSP loans, extension services, technical training, scientific research, nursery seedling production, ethnic minority development planning, internal PFSM, and pilots in FSC certification, collaborative management, three provinces with the ER-P region (Thanh Hoa, Nghe An and Thua Thien Hue) were part of the FSDP

[14] International Climate Initiative (IKI) of the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB)

therefore it is envisaged that these processes and activities would still be familiar to the DARDs (which implemented the FSDP and would also be responsible for the ER-P).

- The interventions model were scaled on each implementation unit for each province separately. In total, the six ER-P provinces include 47 PFMBs, 16 SFC and 14 SUF MBs. It is assumed that the majority of these entities will be part of the ER-P. The following tables present the key assumptions for the scaling of the ER-P interventions according to the implementation entities and province. The scaling and adoption of the model is envisioned to take place over a period of 5 years, while in year one no intervention are assumed to the required planning for the implementation.

Table 9.4 PFMB area under management per implementation entity after 8 years (ha)

PFMB models[15]	Thua Thien Hue	Quang Tri	Quang Binh	Ha Tinh	Nghe An	Thanh Hoa
1. Forest protection of existing natural forest through contracts	1,050	2,240	980	630	1,190	910
2. Natural assisted regeneration of medium quality forest / avoiding degradation (no planting)	1,120	2,100	1,050	1,400	1,400	1,050
3. Natural regeneration and enrichment planting of poor natural forest	1,260	1,260	1,260	1,260	1,260	1,260
4. Afforestation/Reforestation - Acacia long rotation model (12 years)	700	840	350	490	280	280
5. Afforestation/Reforestation - Acacia with mixed species (20 years) (50% native; 50% Acacia)	630	840	350	560	280	210
6. Transformation of Acacia short rotation to long-rotation (12 years)	770	1,680	560	1,330	560	700
7. Transformation of Acacia short rotation to long rotation mixed native species (20 years)	700	1,540	490	1,190	490	560
8. Afforestation/Reforestation - Melia azedarach (8-year rotation)	0	0	0	0	350	0

Table 9.5 SUF MB area under management per implementation entity after 8 years (ha)

SUF MB models	Thua Thien Hue	Quang Tri	Quang Binh	Ha Tinh	Nghe An	Thanh Hoa
1. Forest protection of existing natural forest through contracts	700	1,540	1,050	210	350	840
2. Natural assisted regeneration of medium quality forest / avoiding degradation (no planting)	580	650	1,780	650	510	840
3. Natural regeneration and enrichment planting of poor natural forest	980	770	770	840	840	840

[15] Assume that 20% of the area is implemented by smallholders

Table 9.6 SFC area under management per implementation entity after 8 years (ha)

SFC models	Thua Thien Hue	Quang Tri	Quang Binh	Ha Tinh	Nghe An	Thanh Hoa
1. Forest protection of existing natural forest through contracts	1,050	2,100	2,450	560	350	1,050
2. Natural assisted regeneration of medium quality forest / avoiding degradation (no planting)	840	910	4,200	2,100	350	1,050
3. Natural regeneration and enrichment planting of poor natural forest	420	420	560	700	560	700
4. Afforestation/Reforestation - Acacia long rotation model (12 years)	560	490	840	840	350	350
5. Afforestation/Reforestation - Acacia with mixed species (20 years) (50% native; 50% Acacia)	630	560	840	840	350	350
6. Transformation of Acacia short rotation to long-rotation (12 years)	700	1,820	700	490	840	770
7. Transformation of Acacia short rotation to long rotation mixed native species (20 years)	700	1,820	700	490	840	770
8. Afforestation/Reforestation - Melia azedarach (8-year rotation)	0	0	0	0	350	0

- The specific coastal implementation entities and respective estimates for the coastal protection development and rehabilitation component still remain to be identified and quantified. Area estimates are only based on preliminary estimates based on the initial mission by the WB team. Thus implementation area specific estimates for coastal development and protection are provided only in Figure 2.1.
- The following assumption are made for the start of implementation. It is assumed that some implementation entities can be mobilized relatively quickly, while the other start may start at a later stage. The table indicate the start of activities per province and per implementation entity which is then multiplied by the scale of the model as presented in Tables 2.3-2.6.

Table 9.7 Assumed rollout and participating implementation entities in the ER-Program

Timing	Year 1	Year 2	Year 3	Total 8 years
Protection Forest Management Board (PFMB)	**15**	**17**	**10**	**42**
Thua Thien Hue	2	2	1	**5**
Quang Tri	1	1		**2**
Quang Binh	3	3	2	**8**
Ha Tinh	3	3	1	**7**
Nghe An	3	4	3	**10**
Thanh Hoa	3	4	3	**10**
Special Forest Use Management Board (SUF MB)	**8**	**6**		**14**
Thua Thien Hue	1	1		**2**
Quang Tri	1	1		**2**
Quang Binh	1			**1**
Ha Tinh	1	1		**2**
Nghe An	2	1		**3**
Thanh Hoa	2	2		**4**
State Forest Company (SFC)	**9**	**4**		**13**
Thua Thien Hue	2	1		**3**
Quang Tri	1	1		**2**
Quang Binh	1			**1**
Ha Tinh	1			**1**
Nghe An	2	1		**3**
Thanh Hoa	2	1		**3**

- With respect to the coastal forest development and rehabilitation component (4), the initial estimate assumes an area of 39,182 ha of which 26,864 ha are planned for protection (model 9); 6,474 ha for coastal forest and mangrove forest enrichment planting and protection (model 10) and 5,844 ha for reforestation (model 11).
- Furthermore, UNDP is currently implementing a Green Climate Fund supported project on "**Improving the resilience of vulnerable coastal communities to climate change related impacts in Viet Nam**"[16] which is planning to reforest 4,000 of new mangrove and coastal forest. Partly the project will implement its activities in the ER-P accounting area. From this program additional 1,000 of new mangrove and coastal forest planting is assume in the overall program economics and ex-ante GHG emission reduction assessment, which increase the total additional coastal forest and mangrove area to 40,182 ha.

[16] http://www.vn.undp.org/content/vietnam/en/home/library/environment_climate/vietnam-funding-proposal.html

Table 9.8: **Assumed geographic scope of the WB coastal forest development and rehabilitation project**[17]

Province/ City	Mangrove Forest				Coastal Sandy Soil Forest/Coastal Inland Forest			
	Protection	Enrichment Planting	New Plantation	Total	Protection	Enrichment Planting	New Plantation	Total
Quang Ninh	7,384	5,670	1,740	**14,794**				
Hai Phong	4,497	750	2,535	**7,782**				
TT.Hue	120	22	100	**242**	12,101	500	500	**13,101**
Quang Tri		70	28	**98**	4,489	3,552	1,600	**9,641**
Quang Binh	70	40	150	**260**	190	1,600	950	**2,740**
Ha Tinh	205	90	304	**599**	824			**824**
Nghe An	341		423	**764**	7,174		1,114	**8,288**
Thanh Hoa	740	600	600	**1,940**	610	0	75	
Total for NCC (ER-P accounting area)	1,476	822	1,605	**3,903**	25,388	5,652	4,239	**34,594**
Total	**13,357**	**7,242**	**5,880**	**26,479**	**25,388**	**5,652**	**4,239**	**35,279**

Note: Additional 1,000 ha of Afforestation and Reforestation considered in the assessment from the UNDP Green Climate Fund project "**Improving the resilience of vulnerable coastal communities to climate change related impacts in Viet Nam".**

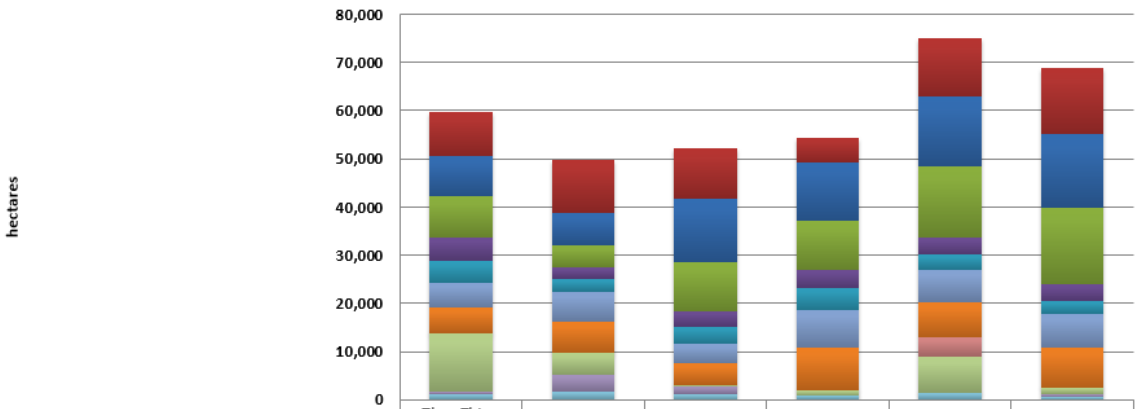
- Based on the assumed rollout of the implementation entities (Table 2.7 and table 2.8[18]) and individual area estimates (Tables 2.4 – 2.6), the ER-P activities will cover a total area of 359,942 ha[19]. The area estimates are indicative and estimates and based on the data provided during the consultation processes with the provinces for the development to the PRAPs.
- The intervention area represents 8.1 % of the total forest area in the ER-P accounting area and 4.4 % of the ER-P accounting area.

[17] Based on estimates provided in the Aide Memoire World Bank FRMC mission, July 25 – August 2, 2016, preparation mission "Forest Sector Modernization and Coastal Resilience Enhancement Project (P157127)

[18] It is assume that implementation of the coastal development and protection interventions occurs in 2018 – 2022 the time frame of the WB project.

[19] The target ER-P area of 359,942 ha represents approximately 7% of the total land area of the six target provinces and 13 % of total forest area in the NCC.

Figure 9.1 ER-P scale according to REDD+ intervention models (8 years)



	Thua Thien Hue	QuangTri	Quang Binh	Ha Tinh	Nghe An	Thanh Hoa
Model 1: Forest protection of existing natural forest through contracts	8,950	10,920	10,360	4,910	12,200	13,920
Model 2: Natural assisted regeneration of medium quality forest / avoiding degradation (no planting	8,440	6,800	13,330	12,110	14,460	15,120
Model 3: Natural regeneration and enrichment planting of poor natural forest	8,600	4,550	10,150	10,180	14,800	15,920
Model 4: Afforestation/Reforestation - Acacia long rotation model (12 years)	4,700	2,470	3,290	3,920	3,400	3,400
Model 5: Afforestation/Reforestation - Acacia with mixed species (20 years) (50% native; 50% Acacia)	4,590	2,600	3,290	4,360	3,400	2,800
Model 7: Transformation of Acacia short rotation to long rotation mixed native species (20 years	5,100	6,240	4,130	7,970	6,600	7,000
Model 6: Transformation of Acacia short rotation to long-rotation (12 years)	5,410	6,500	4,620	8,850	7,200	8,200
Model 8: Afforestation/Reforestation - Melia azedarach (8-year rotation)	0	0	0	0	4,000	0
Model 9: Coastal /mangrove forest protection	12,221	4,489	260	1,029	7,515	1,350
Model 10: Enrichment planting of degdraded coastal forest / mangroves forest	522	3,622	1,640	90	0	600
Model 11: Afforestation/Reforestation of coastal / mangrove forest	1,100	1,628	1,100	804	1,537	675

10 Annex 10 Financial and economic performance of the intervention models

10.1 Key underlying assumptions

- For each of the identified reference and REDD+ intervention model a cost and benefit analysis was carried out which serves as the basis for the assessment of the cost and benefits and the quantification of the operational budget and financing needs. The following section present the key assumption and results of this analysis.
- The assessment is based on the design of 11 separate land use models. Each 1-ha land use model estimates the costs incurred and benefits in terms of revenues from sale of product as well as the investment needs. In addition for each 1-ha model GHG mitigation and employment generated in the reference and REDD+ scenarios is estimated. The following steps have been applied in constructing every 1-ha model:
  a) The costs of the activities and materials required to undertake the baseline land use activity (e.g., illegal cutting), and the REDD+ scenario land use activity (e.g., protection and harvest of wood products) were estimated based on local data/statistics, national cost norms, interviews, and published literature.
  b) Benefits from products, e.g., wood/firewood, timber, etc. were estimated from expected yields, and prices obtained from the same data sources mentioned above. Benefits were annualized as per the estimated annual yields.
  c) Annual cash flows were then calculated as the difference between total annual costs and total annual benefits, i.e., b) minus a).
  d) All costs and benefit analyses were done for 25-year period due to the long time period forest-related benefits (products) would take to be realized.
  e) NPVs (at discount rate of 10%) and IRRs were estimated over a 25 years period.
  f) Mitigation benefits were linked to the RL. Emission factor data is based on the RL emission factor data. Biomass accumulation rates were either based on reported RL work. this was complemented by biomass growth/yield data of the project *"Business models for the restoration of short-rotation Acacia plantations in Vietnam"*[20], implemented by *UNIQUE forestry and land use, Climate Focus* and *IREN of Hue University*. All data sources are reported under in chapter 4.
  g) Employment was estimated first in terms of annual labor days – by dividing the annual labor expenditure in a) above with daily labor cost – taken as 200,000 VND/day (USD 9.1/day) and a VND to USD exchange rate of VND 22,000 per 1 USD; then converted to annual full-time job equivalent assuming 230 labor days in a year.
- The above steps were used to build all 1-ha models. The key results of the 1 ha models in the reference scenario and in the REDD+ scenario were calculated and used for the subsequent project cost and benefit analysis.

- The result in Table 3.1 below shows that all calculated REDD+ models are profitable. The natural forest REDD+ models range between USD 439 and 2,060 /ha over 25 years and an IRR between 14 and 27%.

[20] This project is part of the International Climate Initiative (IKI). The German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) supports this initiative on the basis of a decision adopted by the German Bundestag.

- The newly established plantation models range between USD 3,009 and 3,297 /ha and IRR range of 17-27%. The plantation transformation models range between an NPV of 3,127 and 3,297, and IRRs between 17% and 21%.
- The mangrove / coastal forest models are profitable, though are the least profitable. The IRR ranges between 2 - 16% and NPVs between USD -2,165 and USD 1,097. The profitability is relative low because assumed revenues are assumed only form fish and medicinal plants based on a national study by Van Tan Phuong, (2014), equivalent to USD 280/ha/year while other provisioning services (timber, firewood, aquaculture); regulating services and cultural services are not considered in the model. According to Van Tan Phuong, (2014), the economic value of mangroves is estimate at USD 4,213 /ha/year (ranging between USD 1,349 – 13,133 /ha/year).

Table 10.1 Key results for Reference scenario and REDD+ scenario and opportunity costs

Reference level	Average long-term carbon stock (tCO2/ha)	NPV 25 years (10% discount rate) USD	IRR 25 years	REDD+ scenario	Average long-term carbon stock (tCO2/ha)	NPV 25 years (10% discount rate) USD	IRR 25 years	Opportunity cost (USD/ha)[21]	Opportunity costs (USD/ tCO_2)
Evergreen broadleaf rich natural forest to agricultural land use	20	$4,795	N/A[22]	Sustainable management of evergreen broadleaf forest - rich	543.5[23]	$546	14%	-4,250	**-8**
Evergreen broadleaf medium natural forest to agricultural land use	20	$4,795	N/A	Natural regeneration of evergreen broadleaf forest – medium	543.5	$439	17%	-4,357	**-8**
Evergreen broadleaf poor natural forest to agricultural land use	20	$6,942	N/A	Natural regeneration of evergreen broadleaf forest – poor	543.5	$2,060	27%	-4,882	**-9**
Plantation forest - Acacia short rotation (6 years)	88	$358	12%	Convert short rotation to long rotation Acacia (12 years)	112	$3,127	21%	2,769	**115**
Plantation forest - Acacia short rotation (6 years)	88	$358	12%	Convert Acacia to mixed native species long rotation (20 years)	117	$4,914	18%	4,556	**158**
Barren land	0	$0		Plantation of Melia azedarach (8 year rotation)	112	$3,009	27%	3,009	**27**
Barren land	0	$0		Plantation of Acacia	117	$3,127	21%	3,127	**28**
Barren land (partly conversion to infrastructure and other development)	0	$0		Plantation of Acacia with mixed species	128	$3,297	17%	3,297	**28**
Coastal /mangrove forest				Coastal / mangrove forest protection[24]	128	$1,097	-		
Degrade coastal /mangrove forest				Enrichment planting of degraded coastal forest / mangrove forest	128	$673	16%		
Bare land				Afforestation / Reforestation of coastal /mangrove forest	128	$-2,165	2.0%	-	

[21] Negative values indicates opportunity costs (foregone economic benefits), while positive values indicate net economic benefits from converting the reference land use towards REDD+ scenario land use.
[22] Cannot be calculated as the annual cashflows never turn negative.
[23] Based on Emission and removal factor data for North Central Costal Vietnam Report (Vu Tan Phuong, Vu Tien Dien), Version 20th April 2016
[24] For all coastal forest and mangrove forest only revenues related to fuelwood collection and harvesting are accounted for. Other ecosystem related benefits are not quantified explaining the low profitability. According to Salem, M.E.; Mercer, D.E. The Economic Value of Mangroves: A Meta-Analysis. Sustainability 2012, 4, 359-383, an economic value of ecosystem services provided by mangroves amounts to USD 3,827 /ha/year.

10.2 Project economic analysis

- The overall economic **expected rate of return (ERR)** over a period of 8 years amounts to **10.2% and a NPV of USD 14.1 million. On a longer term (10 years) the project becomes significantly more profitable and achieves an ERR of 26.9% and a NPV of 126.9 million.**
- On the cost side, this is based on the aggregation of the 1-ha based models on the implementation entities (PFMB, SUF MB, SFC levels), the PRAPs scale and cross-cutting budgets for non-land-based activities related to policy and governance interventions; the ER-P administration costs, the cost related to the collaborative management approach and the coastal forest development and rehabilitation costs. On the revenue side forest product sales, from natural forest, plantations and coastal / mangrove forests, and incremental benefits from livelihood improvement activities (collaborative management approach (see chapter 6)), and a carbon valued at USD 5 /tCO_2 was assumed.
- For the carbon benefit calculation we assume an advance payment for generated emission reduction in year 1. **The advance payment is assumed at USD 5 million in year 1 and USD 6 million in year 2, equivalent to 10% of the value of the estimated 8 years emission reductions (ERs)** (Total USD 110 million). The 1st result based payment in year 3 for ERs is assumed for the ERs generated in year 1-3. The 2nd payment in year 5 is assumed for the verified ERs in year 4-5, **minus the USD 11 million advance payment of the first 2 year**. The 3th payment occurs in year 8 (Year 2024 - end of the program) is assumed for ERs generated in year 6-8.

10.3 Sensitivity analysis

- The sensitivity analysis is concentrated on the impacts on ERR from changes in forest product prices and overall project costs. The ERR is sensitive to revenues and costs in the range of 10% – 20%. The sensitivity analysis is presented in Table 3.2 below.

Table 10.2 Sensitivity analysis for ER-Program

Cases	NPV (USD) - 8 years	ERR - 8 years	NPV (USD) - 10 years	ERR - 10 years
Base case	**14,078,319**	**10.2%**	**126,931,764**	**26.9%**
Project cost (10% higher)	-18,436,568	0.8%	86,416,293	19.3%
Project cost (20% higher)	46,593,206	21.5%	167,447,235	36.2%
Project cost (10% lower)	-50,951,455	-7.4%	45,900,823	12.6%
Project costs (20% lower)	79,108,093	35.7%	207,962,706	48.4%
Revenues (10% higher)	48,001,038	20.3%	180,140,411	35%
Revenues (20% higher)	-19,844,400	-0.1%	73,723,117	18%
Revenues (10% lower)	81,923,757	30.5%	233,349,059	44%
Revenues (20% lower)	-53,767,119	-11.3%	20,514,470	10%

11 Annex 11: Business models and feasibility for Acacia plantation restoration / transformation[25]

11.1 Background

Since the 1990's Viet Nam's forest cover has increased impressively, then only 27.2% of the land was covered with forest, many of which were severely degraded. In 2015 the forested area once more covered 42% of the country (about 14 million ha) as a result of massive reforestation activities (e.g. the 5 million ha 661 program which ended in 2010). However, for the most part this increase was achieved mainly with short-rotation plantations. In the target region of the ER-Program, the plantation area in the production forest amounts to more than 650,000 ha. A large share of this is covered with Acacia and this area is still growing. Acacia hybrid and *Acacia mangium and a. auriculiformis*, are the dominant tree species in these plantations, and has enabled this success story of reforesting barren lands and rehabilitating severely degraded soils, i.e. helped through its nitrogen-fixing property. In addition it provided a quick, though low-return, business model based on a reliable supply chain for woodchip production by state forest companies, communities and small holders. Acacia is, compared to other species, a relatively short-term investment as it can be harvested for pulpwood and wood chips after 3 to 7 years, and for timber after 9 to 15 years. Currently, over 10 million m^3 is harvested annually from Acacia plantations[26]. A large share of the production is processed as woodchips, although Acacia for sawn timber enjoying high demand from the export-oriented (garden) furniture industry, which has to currently import approximately 80% of the logs required for production (Phuc & Canby 2011 [27]).

Despite higher revenues for timber compared to wood chips, many forest owners are reluctant to increase the rotation length, for three key reasons:

- Many forest owners still depend on the income to cover their living costs and salaries; shifting to longer rotations (and other species) results in significant liquidity gaps. This holds true for private landholders but also for State Forest Companies and Forest protection Management Boards which must cover the expenses for labour of forest workers and replanting.
- The risk for storm damage (monsoon and typhoons), root diseases (due to the common and cheap practice of using shoots), pests and increases significantly, especially for the predominantly used Acacia hybrid in its current form. With this and increasing labour costs the low profitability and economic performance of this land use further decreases.

[25] Eduard Merger and Dr. Till Pistorius (UNIQUE forestry and land use) UNIQUE forestry and land use.
[26] Exact harvesting values are unknown due to great variation in small-holder reporting (Nambiar et al. 2014)
[27] Phuc and Canby (2011): Phuc, X. and K. Canby. 2011. Baseline Study 3, Vietnam: Overview of Forest Governance and Trade. Forest Trends FLEGT Asia Regional Programme. Washington DC, USA: Forest Trends.

- A significant lack of technical capacities needed to manage the transition from the very simple Acacia model to more sophisticated silvicultural management approaches – starting from nurseries for appropriate high-quality seedlings of Acacia and high-value native tree species, to planting, infrastructure for large-dimension timber, timely treatments (thinning, weeding and pruning) to proper harvesting.

Without questioning the merits of Acacia for Viet Nam´s successful forest transition, the above-described challenges and concerns associated with the abundance and expansion of

Acacia monocultures in Viet Nam provide good arguments for initiating the next major step – restoring the short-rotation plantations and enhancing the low economic and environmental quality of Viet Nam's production and protection forests.

The proposed transition (described in the next section) addresses three key aspects. Firstly, their low economic performance does little to support the overarching policy objective for the forestry sector in Viet Nam: to contribute to rural development and poverty alleviation (in the context of the widening income gap between urban and rural areas). Secondly, the resilience of Acacia plantations is low and needs to be improved through suitable management measures to address climatic risks. Last but not least, current Acacia plantation management leaves much room to enhance the delivery of ecosystem services, provided they are enriched with native tree species and managed sustainably – this concerns in particular the potential of carbon sequestration in the context of REDD+ (Pistorius, 2015)[28].

Today, the economic and environmental performance of short-rotation Acacia plantations in Viet Nam is low, and with significantly increasing prices for labour, it is prone to further decrease in the future. Thus, it is a declared policy objective of Viet Nam to shift towards sustainable and economically more attractive business models in production forests. Improved forest production schemes and corresponding value chains will increase the profitability of the sector in the long term, and also generate options for improving the livelihood of communities and smallholders through respective out-grower schemes

11.2 Business models and feasibility for Acacia plantation restoration

Pilot example business models[29], that if adopted by the private sector SFCs, smallholders of the ER-P region, were developed to promote sustainable forest management and focus on two main activities – with the simultaneous objectives of contributing significantly to mitigation in the context of REDD+, enhancing the economic performance and taping potentials for up-scaling:

- Increasing the rotation length to make it suitable for sawn log production; and

[28] Pistorius, T. (2015): The Impacts of International REDD+ Finance – Vietnam Case Study, http://www.climateandlandusealliance.org/en/Impacts_of_International_REDD_Finance/

[29] The business models were developed in the frame of the program "business models for the restoration of short-rotation Acacia plantations in Viet Nam" (financed by the International Climate Initiative (IKI). The German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) supports this initiative on the basis of a decision adopted by the German Bundestag) implemented by UNIQUE forestry and land use, Climate Focus and IREN of Hue University.

- The stepwise introduction of marketable high-value native species in existing Acacia plantations.

Through these activities, the existing short-rotation Acacia business model can be successively replaced by new silvicultural and forest management approaches focused on producing high-value timber for sawn logs. These activities are expected to help to significantly increase the profitability of SFCs and PFMBs with production forests and provide a future resource base of legally produced timber for the export-oriented furniture industry.

Following a site-species-market approach that matches the technical and market feasibility of the model, the program identified three native species, namely *Tarrietia javanica, Dipterocarpus alatus*, and *Hopea odorata* that are particularly promising for an economically profitable forest restoration in a relative short amount of time (20 yr. rotation). The selected species all have a very good growth potential, are adapted to the biophysical conditions in North-Central Viet Nam, and produce good quality, marketable timber. Furthermore, there have been preliminary activities focusing on planting and managing these species, and thus there are experiences that can provide key lessons learned and important insight for planting (e.g. conditions) and plantation management.

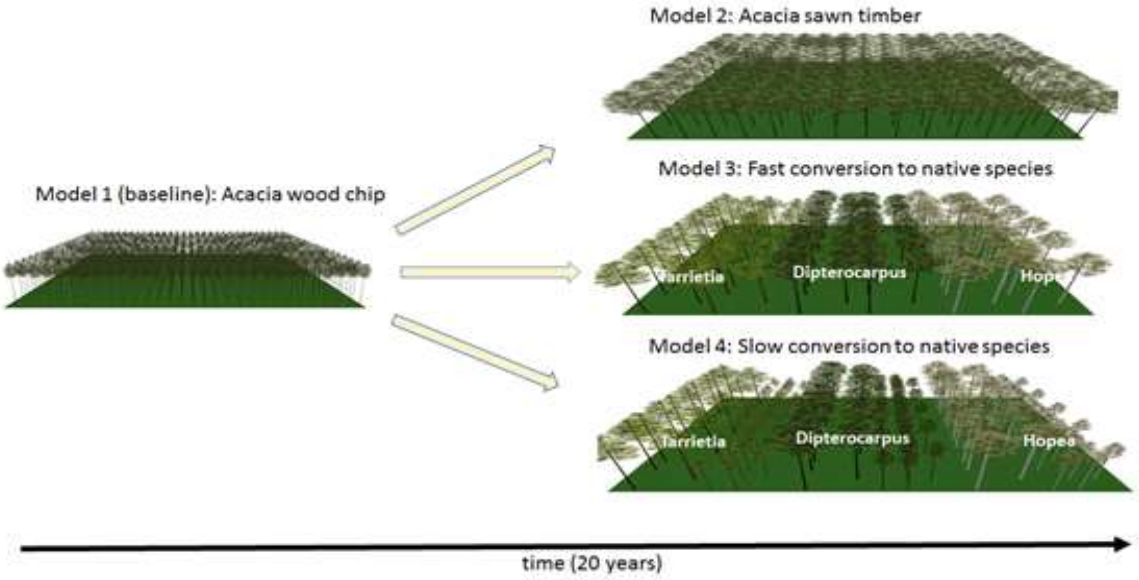
The program initially developed and calculated the reference model – the most common plantation model in North-Central Viet Nam: Acacia hybrid for chipwood production in 6-year-rotation periods without any silvicultural management (Model, "Acacia 6 years wood chip") and an approximate average carbon stock of 60 tCO2/h[30]a over one rotation period. Taking into account the specific requirements of different native species, the program developed different transition models (all on a 1-ha-scale, for comparison), with a special focus on the silvicultural aspects. Below three illustrative transition models are presented, noting that there is a range of other possibilities and that the location of implementation determines which species and which silvicultural approach is appropriate:

- Model 6: Acacia sawlog production in 12 year rotations; and

- Model 7 (fast conversion of Acacia): Transition of model 1 Acacia to mixed native species in year 4 and 6.

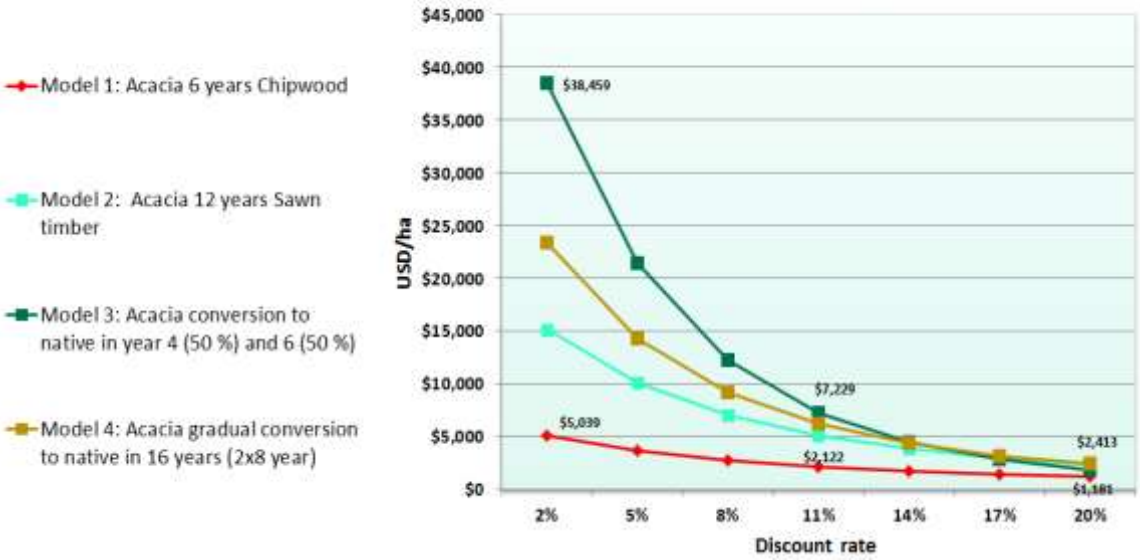
[30] For GHG emissions reduction calculations we apply a carbon stock value of 89 tCO2/ha, in order to maintain overall consistency with the RL accounting approach. Thus ER estimates are conservative.

Figure 11.1 Short-rotation Acacia transition models



Comparing the models for a consistent period of 25 years and calculating the internal rate of return (IRR) and net present value (NPV) for each model at different discount rate, the models shows that the transition models are significantly more profitable compared to the current six year rotation period of Acacia, even if the applied discount rate is below 20%.

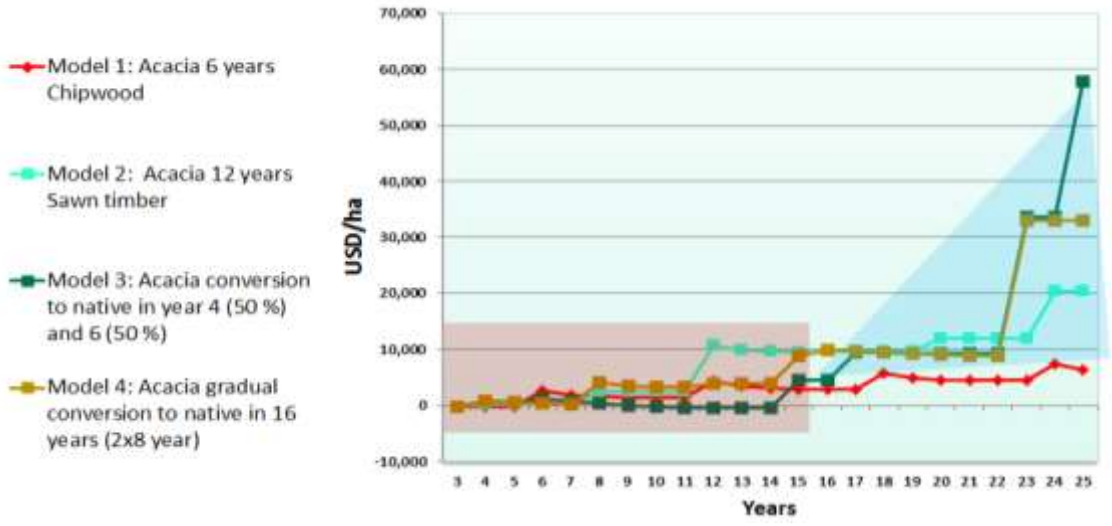
Figure 11.2 NPV and financial performance of the models at different discount rates



However, the key challenges of implementing these models are investments into these new species planting and adopting new management technologies as well as foregoing short-term profits overcoming the liquidity gap (Figure 4). In order to manage this transition PFMBs and SFC will either require either external investments or balance sheet investments, e.g.

from Acacia income – depending on the financial situation of the PFMB and SFC, provincial budget lines and other sources of finance. Another key challenge is the existing incentive system of SFC and PFMB leaders which are appointed for 5 or 10 yrs. Since it the transition period is marked by high investments and the profits start materializing after 10 years there are few incentives for them to promote the transition

Figure 11.3 Modelled cumulative cashflow/ ha Yr 3-25



12 Annex 12: Cost and benefits of the Collaborative Management Approach

- In order to support ethnic minorities, vulnerable and forest dependent communities the collaborative management approach will be adopted. The Collaborative Management approach is expected to be implemented on each implementation entity (PFMB, SFC and SUF MB) and target the most vulnerable and forest dependent community members.

- In the frame of the REDD+ needs and Social Screening assessment (USD 30,000 per implementing entity in year 1) at the inception of the ER-P implementation, the most vulnerable groups and potential participant will be identified.

- Based on that the Collaborative Management component will be developed, budgeted with USD 10,000 per year for each PFMB, SUF and SFC over ER-P implementation period. This covers cost of local meetings, one salary for a coordinator and travel costs. This will funding is assumed to finance the operation of the Collaborative Management.

- In addition to this, a grant mechanisms to support agricultural improvement activities of vulnerable and forest dependent communities will be adopted. The grant mechanisms is budgeted with USD 15,000 per implementing entities per year and will be available to the target groups. This grant mechanisms follows the successful experiences of the FSDP/ VCF WB project. The grant can be used for activities such as development of farmer field school to improve agricultural activities among others, depending on the local needs, and local drivers of deforestation and forest degradation.

- While this approach will be flexible which is important to meet the different environments and socio-economic situations of the communities, for the economic analysis, it is assumed that four major agricultural improvement models will be supported, each represent 25% of the targeted area/households:
    - Income diversification through vegetable production
    - Fodder production investment to support livestock development and reduce free grazing of livestock
    - Sustainable maize intensification production
    - Sustainable cassava intensification production

- For the economic assessment the incremental benefits from adopting these four models are quantified compared to the business as usual. The business as usual scenario assumes maize farming with an annual net revenue of USD 368 /ha/year assuming average annual yields of 3 t/ha/year and cost for labour and inputs amounting to USD 586 /ha/year.

- The four income diversification model will result in incremental benefits of USD 29/ha/year for fodder[31]; USD 291 /ha/year for improved maize; USD 260 /ha/year for improved cassava production; and USD 713 /ha/year for vegetable production. All inputs

[31] While the incremental benefit is relative small, the major benefit will occur (not accounted for) from improved livestock production for which the fodder will be produced which also will reduce the free grazing management and increase livestock productivity.

and outputs are valued at local market condition. The value of labour is valued at VND 200,000 /day (USD 9.1 /day[32]).

- By scaling up these model, the economic assessment assumes that on average each PFMB, SFC and SUF MB has about 10 villages in the proximity that put pressure on natural forest leading to deforestation and forest degradation (deforestation/ forest degradation hotspots to be identified and mapped out in the REDD+ Needs and Social Screening Assessment)

- Each village has about 80 households or 320 members. According to the statistics of the socio-economic Report for the ER-P region[33], about 30% are most vulnerable / forest dependent / very poor and are planned to be targeted by the program (24 households per village). The statistics also show that each household has about 0.5 ha of agricultural land.

- This equals to about 12 ha of agricultural land per village or about 120 ha per SUF MB, PFMB, and SFC that will be directly supported and increase agricultural productivity and provide alternatives to the population. In total, over the ER-P area this adds up to 16,560 households (or 66,240 direct beneficiaries) and 8,280 ha of agricultural land that will directly benefit from the collaborative management approach.

- In total, the **Collaborative Management Approach will cost about USD 14.15 million** over the ER-P implementation period, assuming the cost for 69[34] REDD+ needs assessment and social screening, the operation of the collaborative management and the livelihood investments to the most vulnerable and forest dependent people.

- Assuming that ha based incremental benefits of the livelihood improvement investments and the scale of 8,280 ha, the **incremental benefits of the Collaborative Management will amount to USD 19 million over 8 years**.

[32] Currency conversion rate USD to VND: USD 1 = VND 22,000

[33] MDRI (2016). Quantitative socio-economic survey for Emission Reduction Program (ER-P) provinces area Project "Support for the REDD+ Readiness Preparation in Vietnam". Final Report. Mekong Development Research Institute. Hanoi, July 2016

[34] Assume that 42 PFMB, 4 SUF MB and 13 SFC participate in the ER-Program.