

Appendix 1

LIST OF PARTICIPANTS TAKING PART IN THE LIP ACTIVITIES AT KON K TAU VILLAGE OF POE COMMUNE
DANH SÁCH CÁC HỘ ĐĂNG KÝ XIN THAM GIA HOẠT ĐỘNG DỰ AN CẢI THIỆN SINH KẾ

THÔN: KONKTÁU - XÃ: PỜÊ

STT No.	Họ và tên Name		Nuôi heo Pig raising			Nuôi bò Cattle raising		Nuôi Trâu Buffalo	Ngan Duck	Nuôi cá Fish raising	Ủ phân Making compost	Lúa nước Wet rice	Đất độc SL/A	CAQ Fruit tree	Tre Bamboo	V. Rau Home Garden
			Heo nái Female	Heo đực Male pig	Heo F1 F1 Pig	bò Cattle	bò đực Bull									
1	A Thông (Y Thăng)				B	A		C	B	A			B	B	B X	
2	A Rom					A	C	C	B	A			C			
3	A Rem					A			B	A X						
4	A Bông (Y Hiến)				B	A X			B X	A						
5	A Thi							A		A			C	B	B X	
6	A Tru (Y Trũi)							A	B	B			C			
7	A Chen (Y Kim)							A X	B	B			B		B X	
8	A Tren (Y Hea)							A X		B						
9	Y Trao							A X		B						
10	Đ.X.Râm								B	A	A X				B X	
11	A Mon (Y Minh)								B X	B			A		C	
12	A Truyền (Y Cấn)		A						B X	B	A X		C	B		
13	A Bun		A						B							
14	A Say				C					B			C			
15	A Chon								B	B						
16	A Rea (Y Din)				B				B X	B			B		C	
17	A Đẻ									B					B X	
18	Y Trãi								B				C			
19	Y Son								B							
20	Y Đãng (A Rách)								B				C	B		
21	Y Thăng								B X		B X					
22	Y Đẻ (A Ríp)								B X	B			B	B		
23	Đ.Q. Đầu									B				C		
24	Y Riú (A Riều)								B		A X					
25	Y Thiét (A Đa)								B X	C	B					
26	A Thuật (Y Rút)								B		B		C			
27	A Thứ								B		B		B		B X	
28	Y Thái (A Rét)								B	C	B X		B			
29	A Tê								B X	C	B		C	C		

STT No.	Họ và tên Name	Nuôi heo Pig raising			Nuôi bò Cattle raising		Nuôi Trâu Buffalo	Ngan Duck	Nuôi cá Fish raising	Ủ phân Making compost	Lúa nước Wet rice	Đất dốc SLA	CAQ Fruit tree	Tre Bamboo	V. Rau Home Garden	
		Heo nái Female	Heo đực Male pig	Heo F1 F1 Pig	bò Cattle	bò đực Bull										
30	A Sân (Y Mái)		B				B		A X			C	B	C	C	
31	A Rũa								B					C		
32	Y Tréa (A Kl.ê)						B X		B				C			
33	A Len (Y Đố)						B						C			
34	A Rũ (Y Dừng)							C	A							
35	A Rộn (Y Nanh)								B				C			
36	A Tháo							C	B							
37	A Róa								B					C		
38	A Rúi (Y Doan)								B							
39	A Rã (Y Rí)								B							
40	Y Chanh						B X		A X							
41	A Ria												C			
42	A Thiem							C								
																Total
	Number of participants in 2006	2	0	0	4	0	5	0	10	2	2	1	0	0	0	24
	Number of participants in 2007	0	1	3	0	0	0	27	4	24	0	1	8	4	6	78
	Sub-Total (2006 and 2007)	2	1	3	4	0	5	27	4	34	2	2	8	4	6	102
	Number of participants in 2008	0	0	1	0	1	2	0	7	0	0	3	12	5	3	34
	Ground Total (2006, 2007 & 2008)	2	1	4	4	1	7	27	11	34	2	5	20	9	9	136
	Number of participants withdrawn	0	0	0	1	0	3	10	0	6	2	0	0	0	6	28
	Balance (Present participants)	2	1	4	3	1	4	17	11	28	0	5	20	9	3	108

A means participation since year 2006

B means participation since year 2007

C means participation since year 2008

X means participants who withdrew from the activity

LIST OF PARTICIPANTS TAKING PART IN THE LIP ACTIVITIES AT VICHIRING VILLAGE OF HIEU COMMUNE
 DANH SÁCH CÁC HỘ ĐĂNG KÝ XIN THAM GIA HOẠT ĐỘNG DỰ ẢN CẢI THIỆN SINH KẾ

THÔN: VICHIRING - XÃ: HIẾU

STT No.	Họ và tên Name	Nuôi heo Pig raising			Nuôi bò Cattle raising		Nuôi Trâu Buffalo	Ngan Duck	Nuôi cá Fish raising	Ủ phân Making compost	Đất độc SLA	CAQ Fruit tree	Tre Bamboo	CÀ PHÊ Coffee	V. Rau Home Garden	NUÔI ONG TỰ NHIÊN bee Keeping
		Heo nái Female	Heo đực Male pig	Heo F1 F1 Pig	bò Cattle	Stable only										
1	A Bao							B				C	C		C	
2	Y Bước (A Yo)							B	C	C		B	C		C	
3	A Ché							B				C	C		C	
4	A Chuynh							B				C	C			
5	Đình Văn Dích							B	C		A	B	C	C	B	C
6	Y Đéac											B	C			
7	Y Giáp							B		C		B	C		C	
8	A Goan [A Voan's father]							B X	B			B	C			
9	A Lôi					A		B X	B	A			B		C	
10	Đình Văn Long							B X					C			
11	Y Núi	A					B		C				C	C	C	
12	A Pho				B				B	C		C	C	C	C	C
13	Y Tron	A	B						C	C			C		C	
14	A Tim [A Loi's son]						B		C	C		B	C		C	C
15	A Tem							B					B		C	
16	A Triệu								A	C		B	C		C	
17	Y Thị											B	C			
18	A Vang	A X											C			
19	Y Vít							B				B	C			
20	A Voan								A	C		B	C			
21	A Hải						C			C		C	C	C	C	

STT No.	Họ và tên Name	Nuôi heo Pig raising			Nuôi bò Cattle raising		Nuôi Trâu Buffalo	Ngan Duck	Nuôi cá Fish raising	Ủ phân Making compost	Đất dộc SLA	CAQ Fruit tree	Tre Bamboo	CÀ PHÊ Coffee	V. Rau Home Garden	NUÔI ONG TỰ NHIÊN bee Keeping	
		Heo nái Female	Heo đực Male pig	Heo F1 F1 Pig	bò Cattle	Stable only											
22	A Chiêng								C			C			C		
23	A Chông						B X		C								
24	A Dâm [A Trieu's father]							B				C				C	
25	A Hồng						C			C					C		
26	A Trai											C			C		
27	Y Cuông							C				C					
28	A Bong							C									
29	Y Nga							C									
30	A Vo							C									
31	Tran Van Thanh																
32	Tran Quang Hai																
Total																	
Number of participants in 2006		3	0	0	0	1	0	0	2	1	1	0	0	0	0	0	8
Number of participants in 2007		0	1	0	1	0	3	12	4	0	0	10	2	0	1	0	34
Sub-Total (2006 and 2007)		3	1	0	1	1	3	12	6	1	1	10	2	0	1	0	42
Number of participants in 2008		0	0	0	0	0	3	0	9	11	0	9	30	4	15	4	85
Ground Total (2006, 2007 & 2008)		3	1	0	1	1	6	12	15	12	1	19	32	4	16	4	127
Number of participants withdrawn		1	0	0	0	0	0	4	0	0	0	0	0	0	0	0	5
Balance (Present participants)		2	1	0	1	1	6	8	15	12	1	19	32	4	16	4	122

A means participation since year 2006

B means participation since year 2007

C means participation since year 2008

X means participants who withdrew from the activity

LIST OF PARTICIPANTS TAKING PART IN THE LIP ACTIVITIES AT NUOC NOT VILLAGE OF NGOC TEM COMMUNE
 DANH SÁCH CÁC HỘ ĐĂNG KÝ XIN THAM GIA HOẠT ĐỘNG DỰ ÁN CẢI THIỆN SINH KẾ

STT No.	Họ và tên Name	Nuôi heo Pig raising			Nuôi bò Cattle raising		Nuôi dê Goat raising	Nuôi thỏ Rabbit raising	Ngan Duck	Nuôi cá Fish raising	Ủ phân Making compost	Đất dốc SLA	T.Keo Acacia	Tcau Betel nut	CAQ Fruit tree	Tre Bamboo	V. Rau Home Garden	Nuôi Ong Bee Keeping
		Heo nái Female	Heo đực Male pig	Heo F1 F1 Pig	bò Cattle	Stable only												
1	A Bto+Y Brai							C	B				B	B		B X	C	C
2	Y Bàng+A Đông								B	B			B	B	B	B X	C	C
3	A Biên									B			A	B			C	
4	A Thiên + Y Bái								B X			B	B	B	B		C	
5	Y Bình								B				B	B				
6	Đình Xuân Ba									B								
7	A Trun			B					B	B			B	B	B		C	C
8	Đình Ngọc Chiến								B				B	B				
9	A Dư								B	B			B					
10	A Doa +Y Điện	B X		C	B			C	B X	B		B	B	B	B	B	B	C
11	A Rur + Y Duân			C					B	B			B	B	B X	C	C	
12	A Đường									B			B	B				
13	A Đoi								B	B			B	B			B	
14	A Đa	A							B	B	B		A	B	C		B	C
15	A Đào				A				B	B	C		B	B			C	
16	A DT								B	B X			B	B	B		C	
17	A Đông								B	B X			A	B				
18	A Đin												A	B				
19	A Đấy												A	B				
20	A Em + Y Bia								B	B X			B	B			C	
21	Y Gương								B	C			B	B			C	
22	A Hương +Y Thiên	A X				A				B			B	B			C	
23	Y Hà								B X	B				B			B	
24	A Hoi												B	B				
25	A Kla									B								
26	A Lực+Y Ring								B				B	B				
27	A Lê	A							B	B X			B	B			C	C
28	Đình Xuân Lạc	B							B X	B X			B	B			C	C
29	Y Hloi			B					B									

Appendix 1 Participants List for Sustainable Farming Activity by Each Model Village, Each Year and Each Activity Nuoc Not Village, Ngoc Tem Commune

STT No.	Họ và tên Name	Nuôi heo Pig raising			Nuôi bò Cattle raising		Nuôi dê Goat raising	Nuôi thỏ Rabbit raising	Ngan Duck	Nuôi cá Fish raising	Ủ phân Making compost	Đất độc SLA	T.Keo Acacia	Tàu Betel nut	CAQ Fruit tree	Tre Bamboo	V. Rau Home Garden	Nuôi Ong Bee Keeping
		Heo nái Female	Heo đực Male pig	Heo F1 F1 Pig	bò Cattle	Stable only												
30	Y Lén+A Xu	A											B				B	
31	A Niêng				B			B										
32	Y Nhật				B			BX					B		B		C	
33	A Nga			BX				C	B	B			B	B	C		B	
34	A Nhân						B		B				B	B			C	
35	A Ngô								B				A	B				
36	A Niéc							BX						B				
37	Y Pao							B	B	C			B		C			
38	Y Quyên + A Giốc			B	BX			B	B				B	B	B		B	C
39	A Quyên							B	B				B	B			CX	
40	Đình Hồng Quê	A	B					B		B			B	B	C		C	
41	A Quân								B				A	B	BX		C	
42	A Quyên + Y Brai								B						BX			
43	A Rừ									B				B			C	
44	A Rám							BX					B	B	BX		C	
45	Y Di			BX				B	B	C			B	B	C		C	
46	A Trám+Y Bong							BX					B	B			C	
47	Y Thị			B				BX					B	B	BX		C	
48	A Tua					A		B	B	B			B	B	B	BX	C	
49	Đình Ngọc Trọng							B	B	B			B	B			C	
50	A Viên			B					B	B					C		B	
51	Y Xơi							B	B				B	B	C		C	
52	Y Xoa							BX						B			C	
53	Y Xiêm			B				B	B	B			B	B			B	
54	A Đung+Y Đa							B	B				B	B			C	
55	Y Lin																C	
56	Y Đang																C	
57	Y Nhic																C	
58	Y Tan																C	

Appendix 1 Participants List for Sustainable Farming Activity by Each Model Village, Each Year and Each Activity
Nuoc Not Village, Ngoc Tam Commune

STT No.	Họ và tên Name	Nuôi heo Pig raising			Nuôi bò Cattle raising		Nuôi dê Goat raising	Nuôi thỏ Rabbit raising	Ngan Duck	Nuôi cá Fish raising	Ủ phân Making compost	Đất độc SLA	T.Keo Acacia	Tean Betel nut	CAQ Fruit tree	Tre Bamboo	V. Rau Home Garden	Nuôi Ong Bee Keeping	Total
		Heo nái Female	Heo đực Male pig	Heo F1 F1 Pig	bò Cattle	Stable only													
59	Y Hiêu																C		
60	Y Quân																C		
61	Y He																C		
62	Y Thiêng																C		
63	Y Pỉnh																C		
64	Y VT+AT+Như																C		
65	A Răn																C		
Number of participants in 2006		5	0	0	0	3	0	0	0	0	0	0	7	0	0	0	0	0	15
Number of participants in 2007		2	1	8	4	0	6	3	42	23	1	2	35	45	16	9	9	0	206
Sub-Total (2006 and 2007)		7	1	8	4	3	6	3	42	23	1	2	42	45	16	9	9	0	221
Number of participants in 2008		0	0	2	0	0	0	3	0	4	1	0	0	0	14	0	38	8	70
Ground Total (2006, 2007 & 2008)		7	1	10	4	3	6	6	42	27	2	2	42	45	30	9	47	8	291
Number of participants withdrawn		2	0	2	1	0	2	2	10	3	0	0	0	0	4	4	1	0	31
Balance (Present participants)		5	1	8	3	3	4	4	32	24	2	2	42	45	26	5	46	8	260

A means participation since year 2006

B means participation since year 2007

C means participation since year 2008

X means participants who withdrew from the activity

LIST OF PARTICIPANTS TAKING PART IN THE LIP ACTIVITIES AT KON TUC VILLAGE OF DAK PNE COMMUNE
DANH SÁCH CÁC HỘ ĐĂNG KÝ XIN THAM GIA HOẠT ĐỘNG DỰ ÁN CẢI THIỆN SINH KẾ

STT No.	Họ và tên Name	Nuôi heo Pig raising			Nuôi bò Cattle raising		Nuôi dê Goat raising	Nuôi thỏ Rabbit raising	Ngan Duck	Nuôi cá Fish raising	Ủ phân Making compost	Đất dộc SL/A	CAQ Fruit tree	Bồi lợi	V. Rau Home Garden
		Heo nái Female	Heo đực Male pig	Heo F1 F1 Pig	bò Cattle	Stable only									
1	A Đok	A X							B X	A			B	B	A
2	A Blech													B	
3	A Onh								B	A		A	B	B	A
4	A Dico			C		B X			B X		A	A	B	B	A
5	Y Brai	A	B			B		B	B		A	A	B	B	A
6	A Hbo						A X		B				B	B	
7	A Đáo					B		B X				A X	B	B	A X
8	A Kóih				C			B			C			B	
9	Y Bđung + A Kyat	A				B					B		B	C	
10	A Tro							B X						B	
11	A Dién							B X	C				C	B	
12	A Toan							B		C			B	C	A
13	A Chep+Y Meh	A				B		B X		C			B	B	A X
14	A Jor + Y Bu [Pu]					B	A X	B		C		B X	C	B	A
15	TN thôn (Youth Union)								B X						
16	A Hla					B		B X		C			B	B	
17	A Nghiệp				C			B X		C			C	C	A
18	A Báo					B		B					B	B	A
19	A Nem							B						B	
20	A Blon [Plon]							B X						C	C X
21	A Blih							B X					B		
22	A Bep				C			B		C			C	C	
23	A Ieo					B		B			C		B	B	A
24	Y Gyaih							B						B	
25	A Byáo			C		B		B X		B			B	B	
26	A Dín							B					B	B	
27	A Na					B			A	C			C	B	A
28	Đinh Đèo + Y Lyap	A				B		B X		C			B	B	
29	A Nhák					B		B X					B	B	
30	A Koh (Y Khoa)			C					B X						
31	A Xanh					B		B X	A				B	B	B
32	A Hải						B X			A					

Appendix 1 Participants List for Sustainable Farming Activity by Each Model Village, Each Year and Each Activity
Kon Tuc Village, Dak Pne Commune

STT No.	Họ và tên Name	Nuôi heo Pig raising			Nuôi bò Cattle raising		Nuôi dê Goat raising	Nuôi thỏ Rabbit raising	Ngan Duck	Nuôi cá Fish raising	Ủ phân Making compost	Đất độc SLA	CAQ Fruit tree	Bồi lồi	V. Rau Home Garden
		Heo nái Female	Heo đực Male pig	Heo F1 F1 Pig	bò Cattle	Stable only									
33	A Hroh					B		B X	C	C					
34	A Chon						A								
35	A Hyáo						B X	B X					C		
36	A Dieh									B					
37	A Nghieu									B					
38	Y Thar							B X					C		
39	A Xu [Su]									C					
40	A Quãng														
41	A Suói			C										C	
42	A Cup												C		
43	A Kuông														
44	A Đép														
45	A Kha														C
46	A Tranh														
47	A At														
48	A Doanh [Don]														
49	A Det														
50	A Jup												C		
Total															
		5		0	0	0	0	0	0	3	4	4	0	0	12
		0		1	0	0	15	2	28	4	2	1	18	24	1
		5	1	0	0	15	5	3	28	8	5	5	18	24	13
		0		0	4	3	0	0	0	5	10	0	10	17	3
		5	1	4	3	15	5	3	28	13	15	5	28	41	16
		1		0	0	0	1	4	16	2	0	2	0	0	3
		4	1	4	3	14	1	1	12	11	15	3	28	41	13

A means participation since year 2006
B means participation since year 2007
C means participation since year 2008
X means participants who withdrew from the activity

LIST OF PARTICIPANTS TAKING PART IN THE LIP ACTIVITIES AT TU RO BANG VILLAGE OF DAK KOI COMMUNE
DANH SÁCH CÁC HỘ ĐĂNG KÝ XIN THAM GIA HOẠT ĐỘNG DỰ ÁN CẢI THIỆN SINH KẾ

STT No.	Họ và tên Name	Nuôi heo Pig raising			Nuôi bò Cattle raising			Ngan Duck	Nuôi cá Fish raising	Nuôi dê Goat raising	Nuôi Thỏ Rabbit raising	Ủ phân Making compost	Lúa nước Wet rice	Đất dốc SL/A	V. Rau Home Garden	CAQ Fruit tree	Bối lới	Tre Bamboo	Quế Cinnamon
		Heo nái Female	Heo đực Male pig	Heo F1 F1 Pig	bò Cattle	Stable only	bò đực Bull												
1	A Bàng				A			B				B	B						
2	A Brường					B						B	BX						
3	A Bình			B		B		B	A			C	BX		B	C	B		
4	A Dương			B		A		B	BX		C	A	B		C		B		C
5	A Du			BX		B			B					BX	C				
6	A Eak																		
7	Y Hương	A X	B			B					C		BX		B	C	B		
8	Y Hlá	B					B	BX									C		
9	A Hoan			B		B		BX	B					B	B	B	B		B
10	A Lura					B		B			C				C				
11	N.T.Loan							B	B							B	B	B	C
12	Y Lương							BX											
13	A Ngheo															B	B		
14	A Nông														C	C	B		
15	A Pea							BX	C						C	C			
16	Y Róc	A				B		BX	B		C		BX		B	B	C	BX	C
17	A Rúi	B						BX							B	C			
18	A Reo												BX				B		
19	A Rô					B		BX				C			C	B	B		
20	A Sương					B		BX											
21	A Sam			BX		B		BX	A							C			
22	A Thay	B				B		B			C		BX		BX	B	C	BX	
23	A Thanh							B			C		B		B	B	B	BX	C
24	A Toàn					B		BX								C	B		
25	A Ủi								B										
26	N.T.Vân	A				B				C					BX	B		BX	
27	A Vùng	B				B				C			BX		BX	B	B		

Appendix 1 Participants List for Sustainable Farming Activity by Each Model Village, Each Year and Each Activity
Tu Ro Bang Village, Dak Koi Commune

STT No.	Họ và tên Name	Nuôi heo Pig raising			Nuôi bò Cattle raising			Ngan Duck	Nuôi cá Fish raising	Nuôi dê Goat raising	Nuôi Thỏ Rabbit raising	Ủ phân Making compost	Lúa nước Wet rice	Đất dốc S/LA	V. Rau Home Garden	CAO Fruit tree	Bời lởi	Tre Bamboo	Quế Cinnamon	Total
		Heo nái Female	Heo đực Male pig	Heo F1 F1 Pig	bò Cattle	Stable only	bò đực Bull													
28	A Vinh						B X													
29	A Tây														C	C				
	Number of participants in 2006	3	0	0	0	2	0	0	2	0	1	0	0	0	0	0	0	0	0	8
	Number of participants in 2007	4	1	5	3	12	1	18	6	0	2	10	1	10	10	11	7	1	102	
	Sub-Total (2006 and 2007)	7	1	5	3	14	1	18	8	0	3	10	1	10	10	11	7	1	110	
	Number of participants in 2008	0	0	0	0	0	0	0	1	2	1	7	0	0	6	7	0	4	36	
	Ground Total (2006, 2007 & 2008)	7	1	5	3	14	1	18	9	2	1	10	1	16	18	18	7	5	146	
	Number of participants withdrawn	1	0	2	0	0	0	11	1	0	0	7	0	4	0	0	4	0	30	
	Balance (Present participants)	6	1	3	3	14	1	7	8	2	1	10	3	1	18	18	3	5	116	

A means participation since year 2006

B means participation since year 2007

C means participation since year 2008

X means participants who withdrew from the activity

Appendix 2

Minute of VDB's discussion on "The Animal Bank regulations"

KonKtau Village – Po E commune

Venue: Project office at Po E commune

Time: 7.30 am

Date: March 2nd, 2008

Participants: VDB members

1. A Thông
2. A Sân
3. A Thi
4. A Rơm
5. A Ru
6. Y Min
7. The commune facilitator: Nguyễn Thị Hồng Hà

Content of the discussion: Animal Bank Regulations

I. Regulations on Animal Sharing (Activities: buffalo, cattle, fish, pig and duck raising)

1. Buffalo raising:

- The collective households who are provided with mother buffaloes and materials for making public stables are allowed to keep 2 litters of calves per household for raising. When the second calf becomes 6 months of age, the raiser has to return the stable to the VDB.
- In case of rearing mother buffaloes for following turns, the raisers are allowed to keep one litter of calf and have to return the mother buffaloes to the VDB when their calves get the age of 6 months. (The provision of mother buffaloes to other households is considered and decided by the VDB)

2. Cattle raising:

- The collective households who are provided with mother cattle and materials for making public stables are allowed to keep 2 litters of

calves per household for raising. When the second calf becomes 6 months of age, the raiser has to return the stable to the VDB.

- In case of rearing mother cattle for following turns, the raisers are allowed to keep one litter of baby calf and have to return the mother cattle to the VDB when their calves get the age of 6 months.(The provision of mother buffaloes to other households is considered and decided by the VDB)
- The breeding bull : The bull raiser is responsible for taking care of the bull in a proper way to make sure it is healthy. Mating between the bull and the cows provided by the project or the local cows should be carried out on time. The bull raiser is entitled to receive 50.000 VND for a successful mating time.

3. Duck raising :

- When the ducks provided by the project have baby ducklings, the duck raising households will keep them. If other households within the village want to raise ducks, the duck raising households will give ducks for free..

4. Pig raising:

- When the sow provided by the project delivers piglets, the raiser keeps $\frac{1}{2}$ of the piglets and $\frac{1}{2}$ of the piglets is handed over to the VDB so that the VDB can sell the piglets at a cheap price to other households in the village, who want to raise pig. (the raiser is allowed to keep the piglet odd).

* Boar raising:

- The raiser is responsible for taking care of the boar in a proper way to make sure the boar is healthy and mate with the sow pigs on time. The boar raiser has the right to receive 1 piglet which is 1 month of age from the sow pig raiser if the pig mating is successful.

5. Fish raising:

- The households provided with materials (NPK fertilazer, lime, water pipes) and fingerlings for raising will extract 10% of the money

earned by selling fish to the VDB. If other households within the village want to participate in fish raising, then the fish raisers should support the other households with fingerlings for raising.

II. Regulations on dead animals :

The raisers are responsible for raising rabbits , cattle , goats and pigs in a proper way to make sure they are healthy and they breed well because they are valuable animals . However , misfortune is unavoidable . Therefore , there should be solutions for misfortunes . The following are the official regulations on how to solve dead animals

* Risks on buffaloes/ Cattle/ Pigs

a. The animals die because of weather , traffic accidents,.....

- The raiser has to inform and invite VDB to come to the site as the witness. The dead should be slaughtered to sell for money (80% of money will be added into the VDB's fund , 20 % of the money will be paid to the raiser)
- If the death is considered as an unavoidable incident, the VDB will buy another animal to replace the dead unlucky animal by using its fund. During the project implementation period, the project will provide the raiser with another animal to replace the dead one.
- If it is considered that the death is a fault of the raiser and could have been avoided, the raiser will receive 20% of the money earned from sales of the dead animal and no replacing animal will be provided to the raiser.

b. The animals die because of the irresponsibility of the raisers:

- The raiser has to report to the VDB about the death of the animals and let the VDB come to the site as the witness. The dead animal should be slaughtered to sell for money (80% of the money will be added to the VDB's fund, 20% of the money will be paid to the raiser)
- After that, the way the raiser treats the animals will be inspected in the meeting held by the VDB. The raiser is only allowed to participate in the project activities again if there is a positive change from him/her and a determination to improve the way of treating the animals

- If it is considered that the raiser shows no sign of changing his or her attitude or determination to improve the way of treating the animals, the raiser will receive 20% of the money earned from the sales of the dead animal and no replacing animal will be provided to the raiser.

c. The animals die because of diseases (although the raiser tried to tend and cure the sick animal)

- If the disease is not dangerous and expected to cause an outbreak, the raiser has to report to the VDB about the death of the animals and let the VDB come to the site as the witness. The dead animal should be slaughtered to sell for money (80% of the money will be added to the VDB's fund, 20% of the money will be paid to the raiser)
- If the raiser tries to tend and cure his/her sick animal but the death of animal is unavoidable, the VDB will buy another animal to replace the dead animal by using its fund. During the project implementation period, the project will provide the raiser with another animal to replace the dead one.
- If the disease is dangerous and expected to cause an outbreak or affect the human, the dead animal must be buried (do not eat or sell the dead animal). The VDB will buy another animal to replace the dead animal by using its fund

d. The animals die because of diseases (the raiser was irresponsible in tending and curing the animal)

- If the disease is not dangerous or expected to cause an outbreak, the item (b) should be applied as the solution.
- If the disease is dangerous and expected to cause an outbreak or affect the human, the dead animal must be buried (do not eat or sell the animal) and the item (b) should be applied as the solution.

III. Comments of the VDB:

VDB members' signatures

1. A Thông
2. A Rơm
3. Y Nghien
4. A Sân
5. Y Min

CF signature :
Nguyen Thi Hong Ha

Witness by CPC: A Chan

Minute of VDB's discussion on "The Animal Bank regulations"

Vichiring Village – Hieu commune

Venue: Project office at Hieu commune

Date: July 29th, 2008

Participants: VDB members

8. Hồ Thị Thanh Nga
9. A Dích
10. A Pho
11. A Tim
12. A Triệu
13. A Dâm
14. The commune facilitator: Trần Văn Nhu

Content of the discussion: Animal Bank Regulations

I. Regulations on Animal Sharing

1. Duck raising:

The project provided participants 3 ducks/ household. When ducks provided by the project have baby ducks, the raiser will deliver 3 baby ducks to the VDB. The VDB will give baby ducks to households who are unable to pay money for raising or sell baby ducks at a cheap price from 10.000 to 15.000 VND/ baby duck (depending on big or small baby duck) to households who have ability to pay money.

2. Pig raising:

- Boar raising:

The sow pig raiser has to pay the boar raiser 10.000 VND for one time of pig mating and pay the boar raiser one-month-old piglet if the mating is successful.

- Piglet raising: When sow pig deliver piglets, the sow raiser gives the boar raiser 1 piglet as remuneration for pig mating. The remaining piglets are divided into 2 equal halves. 50% of the piglets will be kept by the raiser and 50% of piglets will be shifted to the VDB. In case, it is impossible to divide the total number of piglets into 2 equal halves because of odd number. The raiser is allowed to keep the piglet odd.

For example: Mrs. Y Tron, the sow pig raiser, has to pay 10.000 VND to Mr. A Pho, the boar raiser right after the sow was mated with the boar. It is supposed that the mating is successful and the sow pig delivers 10 piglets. Mrs. Y Tron will have to give Mr. A Pho 1 piglet when it is 1 month of age. 4 piglets will be transferred to the VDB and the 5 remaining piglets will be kept by the raiser.

The VDB has the right to sell these piglets at the price of 300.000 VND/piglet. The money earned will be added to the VDB's fund and kept by the cashier of the VDB.

The raisers of local sow pigs (not provided by the project) have to follow agreements with the boar raiser. If the mating achieve the results, the sow pig raiser will have to pay 100.000 VND to the VDB.

3. Buffalo raising:

When a buffalo provided by the project delivers one litter of baby buffalo(es), the raiser will have to return the mother buffalo to the VDB when baby buffalo weans. Then, the VDB transfers the buffalo to another household in the village, who wants to raise and have conditions for buffalo raising. The second raiser will transfer the mother buffalo to the first raiser after the second raiser has baby buffalo and it weans (this case is only applied to the 3 mother buffaloes provided by the project in 2007 because these mother buffaloes were rather small at the provision time and the raisers had to raise these buffaloes for a long time before they deliver babies). The first raisers will have to return mother buffaloes to other households who are considered and selected by the VDB for raising after the mother buffaloes deliver baby buffalo(es).

For example: Mrs. Y Nui is provided with 1 breeding buffalo for raising. She will have to transfer the mother buffalo to Mr. Dinh Xuan A who is selected by the VDB after the mother buffalo delivers baby buffalo and baby

buffalo weans. Mr. Dinh Xuan A will have to return the mother buffalo to Mrs. Y Nui for raising after Mr. Dinh Xuan A has a baby buffalo delivered by the mother buffalo and the baby buffalo weans.

4. Cattle raising:

When a cattle provided by the project delivers one baby calf, the raiser will have to return the mother vattle to the VDB when baby calf weans. Then, the VDB transfers the buffalo to another household in the village, who wants to raise and have conditions for cattle raising

II. Comments of the VDB:

We approve with the above content

VDB members' signatures

1. Hồ Thị Thanh Nga
2. A Dích
3. A Pho
4. A Tim
5. A Triệu
6. A Dâm

Signed by:

The commune facilitator: Trần Văn Nhu

Hieu's CPC vice-chairman: Nguen Thi Hoa

Minute of VDB's discussion on "The Animal Bank regulations"

Điek Nót A Village – Ngọc Tem commune

Venue: Project office at Ngọc Tem commune

Time: 8.30 am

Date: March 27th, 2008

Participants: VDB members

15. Trần Thanh Hưng

16. Đinh Hồng Quê

17. Đinh Xuân Lạc

18. A Lê

19. Y Xiêm

20. A Đào

21. The commune facilitator: Đào Bá Dũng.

Content of the discussion: Animal Bank Regulations

I. Regulations on Animal Sharing (Activities: pig, cattle, fish, duck, goat and rabbit raising)

1. Pig raising:

a. Sow pig raising:

The households provided with materials for constructing stables (bricks, cement), maize, industrial foodstuff for breeding sows in the first 2 months and foodstuff for piglets in the first 2 months/ 2 litters will have the right to keep 50% of piglets of each litter for raising and 50% of piglets will be delivered to the VDB until the mother pig die.

* Note: After the project ends, the existing raisers will continue to care and any new raisers will have to implement the Animal Bank Regulations of VDB.

b. F1 pig raising:

Households who register to raise F1 piglets need to have stables and source of foodstuff for the piglets.

c. Boar raising:

The project provides the raiser with materials for constructing stables (concrete blocks), breeding boar for raising.

The raiser is responsible for taking care of the boar in a proper way to make sure the boar is healthy enough to mate with the sows provided by the project as well as with the local sows. The boar raiser has the right to receive 1 piglet from the sow pig raiser after the sow deliver piglets

2. Cattle raising:

The households provided with materials for constructing stables (concrete blocks), grass seeds and cattle for raising at their own houses have the right to keep one litter of calf. From the second litter of calf, the raiser will have to share with VDB the money equivalent to 30% of the value of the delivered calf. Then, when the baby calf weans, the raiser will have to return the mother cattle to the VDB. Then, the VDB will provide this mother cattle to another poor household for raising (the poor household selected by the VDB). The latter raiser will get the same benefit as the first raiser
* Note: After the project ends, the existing raisers will continue to care and any new raisers will have to implement the Animal Bank Regulations of VDB.

3. Fish raising:

The households provided with materials like water pipes and fingerlings for raising should give or sell fingerlings to other households for raising after their fish deliver baby fish.

4. Duck raising:

The households provided with ducks for raising have the right to sell baby ducks at cheap price to other household for raising after the ducks provided by the project deliver baby ducks.

5. Goat raising:

The household provided with breeding goat and grass seeds for raising has the right to keep one litter of baby goats. From the second litter of baby goats, the raiser will have to share with VDB the money equivalent to 30% of the value of the delivered goats. Then, the raiser has to shift the mother goat to VDB. Then the VDB will provide that mother goat to another poor household for raising (the poor household selected by the VDB). The latter raiser will get the same benefit as the first raiser.

* Note: After the project ends, the existing raisers will continue to care and any new raisers will have to implement the Animal Bank Regulations of VDB.

6. Rabbit raising:

The households provided with net for making rabbit cages, breeding rabbits and grass seeds will have to deliver baby rabbits at the age of 2 months old to the VDB (the number of baby rabbits delivered to the VDB should be the same as the number of rabbits initially provided by the project)

For example: The project provides 3 rabbits to Mr. Đinh Hồng Quê for raising. After the rabbits deliver baby rabbits, Mr. Đinh Hồng Quê will deliver 3 baby rabbits at the age of two months to the VDB

II. Regulations on dead animals :

The raisers are responsible for raising rabbits , cattle , goats and pigs in a proper way to make sure they are healthy and they breed well because they are valuable animals . However , misfortune is unavoidable . Therefore , there should be solutions for misfortunes . The following are the official regulations on how to solve dead animals

1. The animals die because of weather , traffic accidents,.....

- The raiser has to inform and invite VDB to come to the site as the witness. The dead should be slaughtered to sell for money (50% of money will be added into the VDB's fund , 50 % of the money will be paid to the raiser)

- If the death is considered as an unavoidable incident, the VDB will buy another animal to replace the dead unlucky animal by using its fund. During

the project implementation period, the project will provide the raiser with another animal to replace the dead one.

- If it is considered that the death is a fault of the raiser and could have been avoided, the raiser will receive 20% of the money earned from sales of the dead animal and no replacing animal will be provided to the raiser.

2. The animals die because of the irresponsibility of the raisers:

- The raiser has to report to the VDB about the death of the animals and let the VDB come to the site as the witness. The dead animal should be slaughtered to sell for money (50% of the money will be added to the VDB's fund, 50% of the money will be paid to the raiser)

- After that, the way the raiser treats the animals will be inspected in the meeting held by the VDB. The raiser is only allowed to participate in the project activities again if there is a positive change from him/her and a determination to improve the way of treating the animals

- If it is considered that the raiser shows no sign of changing his or her attitude or determination to improve the way of treating the animals, the raiser will receive 20% of the money earned from the sales of the dead animal and no replacing animal will be provided to the raiser.

3. The animals die because of diseases (although the raiser tried to tend and cure the sick animal)

- If the disease is not dangerous and expected to cause an outbreak, the raiser has to report to the VDB about the death of the animals and let the VDB come to the site as the witness. The dead animal should be slaughtered to sell for money (50% of the money will be added to the VDB's fund, 50% of the money will be paid to the raiser)

- If the raiser tries to tend and cure his/her sick animal but the death of animal is unavoidable, the VDB will buy another animal to replace the dead animal by using its fund. During the project implementation period, the project will provide the raiser with another animal to replace the dead one.

- If the disease is dangerous and expected to cause an outbreak or affect the human, the dead animal must be buried (do not eat or sell the dead animal). The VDB will buy another animal to replace the dead animal by using its fund

4. The animals die because of diseases (the raiser was irresponsible in tending and curing the animal)

- If the disease is not dangerous or expected to cause an outbreak, the item (2) should be applied as the solution.
- If the disease is dangerous and expected to cause an outbreak or affect the human, the dead animal must be burried (do not eat or sell the animal) and the item (2) should be applied as the solution.

III. Comments of the VDB:

We approve with the above content

Representative of the VDB members' signatures

Đình Hồng Quê: (VDB leader)

Minute of VDB's discussion on
"The Animal Bank regulations"

KonTuc Village – DakPne commune

Venue: Project office at DakPne commune

Time: 14pm

Date: march 31st, 2008

Participants: The VDB's members

1. Đinh Đèo
2. A Dơk
3. A Hyáo
4. A Dieo
5. Y Thar

Commune facilitator of DakPne commune: Phan Huy Tuấn

Content of the discussion: Animal Bank Regulations

I. Regulations on Animal Sharing (Activities: cattle, goat, pig, fish, rabbit and duck raising)

1. Cattle raising:

The households provided with materials for constructing stables (concrete blocks, iron sheets), grass seeds and cattle for raising at their own houses have the right to keep one litter of calf. When the baby calf weans, the raiser will have to return the mother cattle to the VDB. Then, the VDB will provide this mother cattle to another poor household for raising (the poor household selected by the VDB). The latter raiser will get the same benefit as the first raiser

2. Goat raising:

The household provided with breeding goats, grass seeds for for raising at their own houses has the right to keep one litter of baby goats. When the baby goats wean, the raiser will have to return the mother goat to the VDB. Then, the VDB will provide the mother goat to another poor household for

raising (the poor household selected by the VDB). The latter raiser will get the same benefit as the first raiser

3. Pig raising:

a. Sow pig raising:

The households provided with materials for constructing stables (bricks, cement, iron sheets), sweet potato, maize, pumpkin, industrial foodstuff for breeding sows in the first 2 months and foodstuff for piglets in the first 2 months/ 2 litters will have the right to keep 50% of piglets of each litter for raising and 50% of piglets will be delivered to the VDB until the mother pig die. In case that the raiser(s) lack labors to care pigs or lack foodstuff for pigs, then the VDB will have the right to transfer the sow(s) to other raiser(s)

b. Boar raising:

The project provides the raiser with materials for constructing stables (concrete blocksiron sheets), breeding boar for raising. The raiser is responsible for taking care of the boar in a proper way to make sure the boar is healthy enough to mate with the sows provided by the project as well as with the local sows. The boar raiser has the right to receive 20.000 VND from the sow pig raiser if the pig mating is successful.

4. Fish raising:

- The households provided with materials (NPK fertilazer, lime, water pipes) and fingerlings should support other households with fingerlings for raising after their fish deliver baby fish. If the old raiser sell fingerlings to new raisers, 10% of the money earned should be delivered to the VDB for raising its fund.

5. Rabbit raising:

The households provided with net for making rabbit cages, breeding rabbits and grass seeds will have to deliver baby rabbits at the age of 2 months old to the VDB (the number of baby rabbits delivered to the VBD should be the same as the number of rabbits initially provided by the project)

For example: The project provides 3 rabbits to Mr. A Báu for raising. After the rabbits deliver baby rabbits, Mr. A Báu will deliver 3 baby rabbits at the age of two months to the VDB

6. Duck raising:

The project provided ducks to households. After the ducks provided by project have baby ducks, the raisers should give baby ducks to other people in the village if they want to raise duck.

II. Regulations on dead animals :

The raisers are responsible for raising rabbits , cattle , goats and pigs in a proper way to make sure they are healthy and they breed well because they are valuable animals . However , misfortune is unavoidable . Therefore , there should be solutions for misfortunes . The following are the official regulations on how to solve dead animals

* Risks on buffaloes/ Cattle/ Pigs

a. The animals die because of weather , traffic accidents,.....

- The raiser has to inform and invite VDB to come to the site as the witness. The dead should be slaughtered to sell for money (80% of money will be added into the VDB's fund , 20 % of the money will be paid to the raiser)
- If the death is considered as an unavoidable incident, the VDB will buy another animal to replace the dead unlucky animal by using its fund. During the project implementation period, the project will provide the raiser with another animal to replace the dead one.
- If it is considered that the death is a fault of the raiser and could have been avoided, the raiser will receive 20% of the money earned from sales of the dead animal and no replacing animal will be provided to the raiser.

b. The animals die because of the irresponsibility of the raisers:

- The raiser has to report to the VDB about the death of the animals and let the VDB come to the site as the witness. The dead animal should be

slaughtered to sell for money (80% of the money will be added to the VDB's fund, 20% of the money will be paid to the raiser)

- After that, the way the raiser treats the animals will be inspected in the meeting held by the VDB. The raiser is only allowed to participate in the project activities again if there is a positive change from him/her and a determination to improve the way of treating the animals

- If it is considered that the raiser shows no sign of changing his or her attitude or determination to improve the way of treating the animals, the raiser will receive 20% of the money earned from the sales of the dead animal and no replacing animal will be provided to the raiser.

c. The animals die because of diseases (although the raiser tried to tend and cure the sick animal)

- If the disease is not dangerous and expected to cause an outbreak, the raiser has to report to the VDB about the death of the animals and let the VDB come to the site as the witness. The dead animal should be slaughtered to sell for money (80% of the money will be added to the VDB's fund, 20% of the money will be paid to the raiser)

- If the raiser tries to tend and cure his/her sick animal but the death of animal is unavoidable, the VDB will buy another animal to replace the dead animal by using its fund. During the project implementation period, the project will provide the raiser with another animal to replace the dead one.

- If the disease is dangerous and expected to cause an outbreak or affect the human, the dead animal must be buried (do not eat or sell the dead animal). The VDB will buy another animal to replace the dead animal by using its fund

d. The animals die because of diseases (the raiser was irresponsible in tending and curing the animal)

- If the disease is not dangerous or expected to cause an outbreak, the item (b) should be applied as the solution.

- If the disease is dangerous and expected to cause an outbreak or affect the human, the dead animal must be buried (do not eat or sell the animal) and the item (b) should be applied as the solution.

III. Comments of the VDB:

We approve with the above content

VDB members' signatures

Đinh
Đèo:.....

A
Dờk:.....

A
Hyáo:.....
...

A
Dieo.....
...

Y
Thar:.....
....

Witnessed and commented by
CPC vice-chairman
A Thenh on August 22, 2008/09/01

Comments: insufficient agreement in animal bank in Kon Tuc village of Dak
Pne commune

Minute of VDB's discussion on "The Animal Bank regulations"

TuRơBang Village – ĐăkKôi commune

Venue: The Rong house of TuRơBang village

Time: 1 pm

Date: April 4th, 2008

Participants: The VDB's members

6. Y Hương
7. A Hoan
8. A Reo
9. A Bình

Commune facilitator of ĐăkKôi commune: Trần Nguyễn Mai Trâm

Content of the discussion: Animal Bank Regulations

I- Purpose

- Support the poor ethnic minorities in husbandry activities to increase their income and understand the animal bank.

II- Beneficiary

- Breeding animal : The project provides the participants with some of these animals: cattle, goats, fish, ducks, pigs, rabbits
- The participants have the right to keep offspring of animals (cattle, goats, pigs, rabbits, ducks)
- The VDB is responsible for Animal Bank Management and nominating households to participate in the husbandry activities.

III- Livestock

- cattle, pigs, ducks, fish, goats, rabbits

IV- The specific regulations of the animal bank

1- Sows :

- Responsibilities of the participants : Follow the technical instruction of the project.
- Support from the project:
 - Cement for building a pigsty
 - training on rearing the sow and its piglets
 - mixed food for the first two months if a piglet which is younger than three-month old is provided instead of the matured sow
 - insemination for one sow
 - starch food (rice, maize, cassava) for the piglets of the first two litters until they become the age of 2 months (The participants have to buy foodstuff by their own money to raise the piglets of the third or other litters.)
- The VDB has the right to sell the old sows of which reproductiveness is not good to raise VDB's fund and can use money for expenses (clarified in the item (*)).

2- Piglets :

- When the sow provided by the project delivers piglets, the raiser keeps ½ of the piglets and ½ of the piglets is handed over to the VDB (this is only applied to the first three litters of piglets). The VDB will sell these piglets at the price of 50.000 VND/ one piglet to other poor households who meet the conditions for pig raising and the money earned will be used for expenses (clarified in the item (*)).
 - The households who buy piglets at a cheap price do not have to pay anything to the VDB.
 - Requirements to the households buying piglets at a cheap price
 - The rearers should have land to plant fodder for pigs.
 - The rearers have to construct pigsties.
 - The households who are raising 2-3 sows provided by the project have to choose one of the two following options:
 - Select the best sow as the breeding sow and sell the others to get money to buy foodstuff for the breeding sow.
 - If the households want to raise all of the sows provided by the project, they have to widen their pigsties or construct more pigsties and buy foodstuff for raising sows by their own money.
-

(*) *Buy breeding sows, materials and vaccine. After the project management is transferred to the localities, The VDB members will not be provided with monthly remuneration. VDB will use its fund to pay expenses such as remuneration for VDB's members, administrative expenses, meeting fee and awards for enthusiastic members.*

3- Boar:

- The project provides one boar, concrete blocks for foundation of a pigsty and roofing irons to the participants, and each participant has to construct a pigsty by himself.
- The participant is responsible for taking care of the boar in a proper way to make sure the boar is healthy enough to mate with the sows provided by the project as well as with the local sows.
- The households raising sows have to feed the boar with 2-3 chicken eggs as a kind of tonic within 1-2 days before mating. If the mating is successful, the household raising sow has to give the boar raising household one two-month-old-piglet
- After 5 year, the boar raiser has to return the boar to the VDB

4- Breeding Cattle:

- The VDB has the right to nominate households for raising the breeding cattle provided by project.
- The households who are only provided with materials for making a stable and not provided with cattle will not have to contribute anything to the VDB. However, these households have to take part in the compost making model and apply compost made to planted trees.
- The collective households who are provided with mother cattle and materials for making public stables are allowed to keep 2 litters of calves per household for raising. When the second calf becomes 6 months of age, the raiser has to return the stable and mother cattle to the VDB. The VDB will consider to provide the cattle returned to another poor household for raising. The new participant has the right to use and maintain the cattle stable until they return the cattle to the VDB.
- In case of rearing mother cattle for following turns, the households have to return the mother cattle to VDB when its calf gets the age of 6 months.
- The breeding bull : The bull raiser is responsible for taking care of the bull in a proper way to make sure it is healthy. Mating between the

bull and the cows provided by the project or the local cows should be carried out on time. When the bull is no longer able to mate, the bull raiser is entitled to receive 70% of the value of the boar and the remaining 30% will be added to the VDB's fund.

5- Goat :

- The regulations for raising goats are the same as raising cattle/buffaloes. The project encourages the participants to make stables, plant fodder trees and follow the goat raising techniques.
- Benefit sharing:
 - The household provided with 2 mother goats for raising has the right to keep one litter of baby goats and the raiser has to shift the mother goats to another household (who wants to raise goat and follows the regulations seriously) for raising.
 - Male goat raising: The households provided with female goats are responsible to take turn to tend the male goat in a proper way to make sure that the male goat is healthy to mate with the female goats.

6- Rabbit , duck and fish :

- The project provides rabbits, ducks, fish and materials to households.
- When the duck raisers have baby ducks, each raiser will have to deliver 3 baby ducks which are two months of age to the VDB. The VDB has the right to sell baby ducks to other households who want to raise ducks. The price should be less than 50% of the market price. The money earned will be added to VDB's fund.
- When fish provided by the project deliver fingerlings, the fish raiser will sell fingerlings to other households at a cheap price.
- When rabbits provided by the project deliver baby rabbits, the rabbit raiser will have to deliver 50% of baby rabbits which have been separated from mother rabbit to the VDB (this is only applied to the first 3 litters). Then the VDB will sell these baby rabbits at a cheap price to other households who want to raise rabbits. Following are conditions to buy rabbits at a cheap price:
 - Using right techniques to make rabbit cage
 - Having land to plant fodder trees for rabbits

II. Regulations on dead animals :

The raisers are responsible for raising buffaloes, cattle, goats and pigs in a proper way to make sure they are healthy and they breed well because they are valuable animals. However, misfortune is unavoidable. Therefore, there should be solutions for misfortunes . The following are the official regulations on how to solve dead animals.

- The animals die because of diseases

The raiser has to inform the VDB about the death of animal. A representative of the VDB and the Vet. at commune level will come to the site to clarify why the animal die and the dead animal has to be buried at a place far from the area where villagers live. The dead animal has to be buried according to the Veterinarian's instructions with the observation of one VDB member who is requested by the VDB.

- Although the raiser tries to tend and cure the sick animal, the animal still dies: If the raiser still wants to continue this activity, the VDB should buy another animal by using its fund to replace the dead one and support foodstuff for animal in the first month (In the project implementation period, the project will buy a replacing animal for the raiser and provide foodstuff for animal in the first month)
- The animal die because the raiser is irresponsible in tending and curing: The raiser will only be allowed to take part in the project's activities if there is a positive change from him/her and a determination to improve the way of treating the animals. The VDB will buy another animal to replace the dead animal by using its fund (In the project implementation period, the project will buy a replacing animal for the raiser)

In case the animal die because of dangerous disease that is possible to cause an outbreak of the disease, timing of providing the replacement shall be postponed until the condition of the area becomes under control.

The replacing animal can only be provided once and if the raiser lets his or her replaced animal die again, the raiser only receive the 20 % of the money earned from sales of the dead animal.

- The animals die because of other reasons (cold weather, falling down from the mountain, its neck winded by string, falling into a vault, falling into a trap, eating strange things.....)

The raiser has to inform the VDB about the death of animal and invite the VDB to the site as the witness. The VDB has to request a representative to come to the site in order to clarify the reason why the animal die.

- If the raiser doesn't have fault in the death of the animal: the VDB has the right to slaughter the dead animal for sales. 50% of the money earned will be added to the VDB's fund and 50% will be kept by the raiser as a remuneration for tending the animal.

- The raiser is allowed to continue taking part in the project's activities. The VDB will buy another animal to replace the dead animal by using its fund (In the project implementation period, the project will buy a replacing animal for the raiser)

- If the animals die because the raiser is irresponsible in raising the animal, the VDB has the right to slaughter the dead animal for sales. 70% of the money earned will be added to the VDB's fund and 30% of the money will be kept by the raiser as a remuneration for tending the animal.

- The raiser is only allowed to continue taking part in the project's activities if there is a positive change from him/her and a determination to improve the way of treating the animals. The VDB will buy another animal to replace the dead animal by using its fund (In the project implementation period, the project will buy a replacing animal for the raiser)

-The replacing animal can only be provided once and if the raiser lets his or her replaced animal die again, the raiser only receive the 20 % of the money earned from sales of the dead animal.

All of the above regulations are the official regulations applied in TuRoBang village-DakKoi commune-Kon Ray District-Kon Tum province. If there is any sub-articles and amendment arisen through the VDB discussion, they must be added as sub-articles and signed by the VDB members and enclosed to this material.

Signed by
The VDB's members

1. A Binh
2. A Thanh
3. A Reo
4. Y Huong
5. A Duong
6. A Hoan

Witnessed by
CPC Chairman: Phan An Duoc

Signed by
CF Tran Nguyen Mai Tram

April 4, 2008

Appendix 3

REPORT ON THE TRAINING

“Training for villagers about basic economics and marketing knowledge to sell agricultural produce from project villages”



<u>LOCATIONS</u>	<u>TIME</u>	<u>PARTICIPANTS</u>
JICA PROJECT OFFICE	14/5/2008	5 PROJECT CF
KON TUC VILLAGE, DAK PNE COMMUNE, KON RAY DISTRICT	16-18/5/2008	10 VILLAGERS, 01 CPC OFFICER
KON KTAU VILLAGE, PO E COMMUNE, KON PLONG DISTRICT	19-21/5/2008	10 VILLAGERS, 01 CPC OFFICER
NUOC NOT VILLAGE, NGOC TEM COMMUNE, KON PLONG DISTRICT	16-18/6/2008	10 VILLAGERS, 01 CPC OFFICER
TRAINER		NGUYỄN CHÍ TRUNG
ASSISTANTS		TRẦN NGUYỄN MAI TRÂM PHAN HUY TUẤN NGUYỄN THỊ HỒNG HÀ TRẦN VĂN NHU ĐÀO BÁ DŨNG

Summary

The trainings on ***“Basic economics and marketing knowledge to sell agricultural produce from project villages”*** were carried out in the framework of the Project on Villagers Support for sustainable forestry management in the Central Highland. There were three trainings in three model villages for a total of 30 villagers and some officers in the local communes. On the principle of empowerment, five community facilitators (CF) had been trained in advance so that they could participate as marketing trainers in some trainings for villagers, under the supervision and support of the main trainer.

The training for the five CF was taken in one day to help them update knowledge and then to agree on the training details, making sure that the contents were suitable for villagers in their locations. At the end of this briefing, all CFs said that they could handle the tasks with high confidence.

The training for villagers were held in each village, based on their specific conditions and requirements. The main principle was to help farmers recognize their own situations/problems and then to find possible resolutions for themselves. Under this principle, there are reasons to believe that the resolutions found by villagers will be feasible in the near future.

The training materials have been adapted from two guidebooks. They are “Identify and assess market opportunities for small farmer holders” issued by CIAT; and “Basic business and marketing – a guidebook for development facilitators in the mountainous provinces in North Vietnam” issued by SNV. To be easily digested by the villagers whose educational levels are relatively low, these two materials have been arranged into short presentations with simple calculations and many pictures and photos. Additionally, the training used many video clips and photos taken in the project villages to make the lectures more visualized. Group discussions were a very important part of the training so that villagers could agree on a vision of what to grow and how to sell, as well as make their own action plans in the near future.

Within three training days, villagers received the knowledge of how to calculate production costs, make simple SWOT analysis relating to the production and selling of their farm produce, and based on their analysis made feasible action plans in the future.

In general, villagers made good assessment on the training.

1. About the training

The Project on Villagers support on sustainable forestry management in the central highland of Vietnam has been implemented by the Japanese Oversea Forestry Consultants Association (JOFCA) who has been commissioned by Japanese International Cooperation Agency (JICA) to undertake the Project. The purpose of the project was to improve the livelihoods of villagers who live in or near the forests so that the exploiting pressure on forest can be alleviated.

In the last two years, the rural infrastructure (access roads) in some project villages has been upgraded and villagers can sell their produce easier. However, most villagers are still practicing subsistent farming and do not know how to sell their produce at reasonable prices. Many villagers expressed that they were still exploited by some traders buying produce from the villages. In order to enhance farmer knowledge and help them sell their produce easier and at a higher price, the marketing trainings have been provided to some project villages.

1.1 The objectives of the marketing trainings

The trainings aim at the following objectives.

- Give farmers know-how for calculating production costs of their current crops and animals so that it must be useful when they make own decisions on what to grow and raise.
- Analyze favorable as well as unfavorable factors relating to their current farming activities and sales so that they could make use of the strengths and opportunities, as well as avoid disadvantage elements.
- Think of group activities as a feasible resolution for their current small production.
- Create a vision and then, if possible, build feasible action plans for the near future.

1.2 Training contents

As most villagers had a relatively low educational background (under class 9) and thus found it difficult to read and calculate, the lectures had been designed as simply as possible. Unnecessary theories had been cut and replaced by simple exercises and group discussions. The training contents were:

- How to calculate production cost and estimate profit. As the monetary expenses of villagers were almost negligible, farmers were guided to control their own labor day. By dividing the profit by the number of labor days, farmers knew the value of daily labor day for each

farming activity and then could make their own decisions on what to grow and raise accordingly.

- How to analyze strengths and weaknesses relating to each farming activities (make simple SWOT analysis).
- How to implement some resolutions to reduce their monetary costs such as the economics of applying composts and integrated farming (garden-fish pond-husbandry) systems. Crop diversification to reduce risks is also suggested.
- Learn basic marketing skills such as obtaining market information from different sources, practice post-harvest technologies to reduce weight and quality losses, how to use scales and how to negotiate with potential buyers.
- Think of the possibility of making a farmers' group and then group activities in production and selling of their produce..
- Make some action plans so that they could sell their produce when and if available.

1.3 Trainers

- Mr Nguyễn Chí Trung, a freelance consultant.
- 05 community facilitators (CF) as training assistants. 01 or 02 CF participated in each villagers' training.

1.4 Training schedule:

1.4.1 Training for 05 CFs was held in the project office on May 14th 2008. The main purpose were to review knowledge delivered in the marketing training in August 2007 and then to contribute to the prepared handouts in order to be sure that they are suitable for villagers.

1.4.2 Trainings for villagers were carried out in three consecutive days in each village. Each CF handle some parts of the trainings.

- **Day 1:** How to calculate production costs and estimate profit.
 - Clarify fixed and variable costs.
 - Depreciate fixed costs for each crop.
 - Calculate productivity.
 - Calculate monetary production costs and estimate profit/loss.
 - Control home labor, calculate into the number of labor-days.
 - Calculate the value of each labor-day.

- **Day 2:** Basic marketing skills
 - Find where the produce goes based on the principle of supply chains.
 - Assess favorable and difficult elements in current selling of produce.
 - Identify things to be changed.
 - Find market information from direct and indirect sources.
 - Negotiate with potential buyers.
- **Day 3:** Make a vision and action plans in the future.
 - Set up a farmer group to produce and sell a possible product.
 - Make production on market demand and implement post harvest technologies.
 - Group actions in selling produce.
 - And other parts as required by farmers.

2. The results of CF training

As mentioned, the training for five CFs was made in one day. As all CFs participated the insightful marketing training held in August 2007 and have been requested to make the literature review before this training, they found this training as a briefing. In the morning, CF listened to the lecture notes and then contributed to the contents.

The afternoon was reserved for trial training: each CF delivered some parts of the training for peer review and comments. The trainer could make an assessment that all CFs have been qualified to delivered the trainings to villagers. However, to help each CF accumulate training experience, the trainer proposed to the project that two CFs should participate in a villager training. In this case, each CF would take part in at least two trainings.

At the end of the training, all CFs expressed that they believed that they could handle the forthcoming training with confidence. Then could also work as facilitators for the establishment and implementation of a possible farmers' group.

3. The results of villager training in Kon Tuc village, Dak Pne commune

After the three-day training, most villagers have obtained the followings.

3.1 How to calculate the production cost: villagers could clarify fixed and variable expenses and knew how to make depreciation of fixed costs. They were also instructed to manage a notebook to control monetary expenses and home labor for each farming activity. The exercises were designed for maize, cassava, pig, fish and vegetable with the inputs provided by villagers so that they calculate the production costs of their products. According to their calculation, now growing cassava resulted in higher profit than growing maize. To eliminate the reducing productivity due to possible soil erosion and falling soil fertility, farmers said they could use compost and grow “boi loi” during fallow periods. Production costs of other activities such as pig and fish raising and vegetable growing were also calculated in much detail. Farmers said that if proper care was taken, these activities would make more money than growing traditional food crops.

3.2 How to get market information: villagers knew that market information should be regularly updated from both indirect sources (radio, television) and direct sources (by asking village traders, relatives and neighbors or people in the district market when and if possible). At least, market information must be obtained before making decisions on what to grow and then right before a harvest was available. Farmers knew the market prices of all produce they could sell such as cassava chips (VND 1,500/kg), maize (VND 2,000/kg), red “boi loi” (VND 10,000/kg), Mong Cai pigs (VND 20,000/kg live weight), fish (VND 14,000/kg). Farmers have not yet known the price of pineapple, just simply this crop has not given harvest yet. Villagers also knew that market prices changed along the value chains, which they simply understood as the flow of produce. For example, the buying prices at road traders and district market were generally 20% and then 50% respectively higher than that in their home venue. Villagers understood that price difference was due to transport costs, post-harvest losses and traders’ profit.

At present, the road leading to Kon Tuc village has been upgraded and trucks can come there. As a result, some small shops have been set up along the new road and farmers no longer depended on the only buyers like they did two years ago. These shop owners were competing with one another in buying produce from villagers. Farmers now knew how to bargain with potential buyers and then often sold their produce to those who offer the highest prices. As the local market has become more competitive, price collusion among buyers seldom occurs. And if farmers feel this phenomenon, they could sell their produce in the district market.

3.3 How to sell produce at a higher price: villagers have got that they should grow crops or raise animals based on market requirements and that higher prices would be obtained if their produce were in good condition. For example, farmers know that dry and white cassava chips are considered as good quality and thus have a higher price than those with fungus and/or have high moisture contents. Similarly, good maize are dry grains without foreign matters. Then, local pigs

can be sold at double the price of Mong Cai pigs. Farmers knew how to make bargain with traders to sell good quality produce at a higher price. They also knew that they could use group action and/or hire a vehicle to sell their produce in the district market. For example, villagers said that the prices of one ton of cassava chips was VND 1.5 millions in the village and VND 2.3 millions in the district market respectively. Hiring a one ton truck cost only VND 200,000, farmers could make an additional profit of VND 600,000 if they could sell in group. Though farmers realized that it was not easy to have enough produce to load a truck, they said that the idea of forming a farmer group would make them bargain easier with potential traders and they could try to form such a production and marketing group in the future.

3.4 Their action plans [Vision] for the near future: At present the volume of marketable produce from Kon Tuc village was not so much. As farmers no longer depended on a singular buyer like they did in the past, participants spent more time discussing on how to produce more commodity according to the market demand. For traditional crops such as cassava and maize, many farmers said that they would keep on growing these crops for self subsistence and only sold surplus produce, if they had of course. To enhance productivity, farmers would apply compost and more frequent weeding, continue their habit of labor exchange to reduce monetary costs. When harvest was available, they could use plastic covers to reduce post harvest losses. All surplus commodity would be sold in group for a trader who made the best offers. For newly introduced commodities, villagers said they could put more efforts on raising pigs and fish because these two products have constantly high market demand. Farmers also mentioned that they could use manure to raise fish to reduce costs and keep their village in better sanitary conditions.

3.5 Some personal assessments: among the five project villages, farmers in Kon Tuc had much easier access to the market and then market information. However, the villagers here were relatively lazy (at least by my adjustment) and many of them get used to drinking. As a result, most farming activities here resulted in very low productivity and farmers did not have enough food to eat, let alone to sell.

Another matter was that most of the elderly in the village are illiterate and could not make even simplest calculation. Therefore they were not eligible to take part in the training. In replace, many young villagers had been selected. These youngsters, unfortunately, have not obtained sufficient prestige among villagers, and as a consequent, it was difficult to believe that the vision and action plans proposed during the trainings could be put into real implementation.

Based on these reasons, the trainer assessed that the quality of this training was just above average.

4. The results of villager training in Kon Ktau village, Po E commune

Compared to that in Kon Tuc, the villager training in Po Ê commune had much better results. The participants included prestigious people such as the village head, the elderly and representative of the women union. All participants took very serious attitude: be on time, strictly followed the class regulations and especially did all the homework.

After the three-day training, villagers have got the followings.

4.1 How to calculate production costs: like the training in other project villages, farmers here liked this part very much and asked the trainers to give them more exercises as homework. Villagers could calculate the value of their labor day for each farming activity. For example, villagers now got that buy growing cassava and then maize, they could make self employment with a daily wage of VND 6,800 and VND 21,000 respectively. It should be noted that the harvesting season in the commune fall into the rainy season, making sun drying an impossible task. As a result, villagers had to sell fresh cassava and maize ears and thus often receive very low prices. In addition to the unfavorable factors of high transportation costs (due to long distance to a processing factory), farmers were generally weak in bargaining with a buyers because the quality of fresh produce could be reduced quickly. For example, if a farmer have uprooted his cassava and the buyer did not come as promise, he could be in great trouble. For villagers in Po E commune, animal and poultry husbandry, fish raising and vegetable growing might be better livelihood options. Those participated in the training have found out that they had better competitive advantages in animal raising than crop cultivating.

4.2 How to get market information: As Pò Ê commune live in the provincial border between Kon Tum and Quang Ngai, most of their produce are sold into Quang Ngai province. Besides obtaining market information from television and radio, villagers often ask people from Quang Ngai for the current prices of their produce. Villagers knew that the current buying price of cassava chips in Quang Ngai were VND 2,200 to VND 2,400 per kilo or VND 1000/kg of fresh cassava (generally 2.2 kgs of fresh cassava is needed to make 1 kg of dry chip) and that the buying price paid by tapioca starch factory in Kon Tum was about VND 1,400/kg of fresh roots. However, farmers could neither make dry cassava chips nor sell to Kontum factories, thus they could only sell fresh cassava at VND 500/kg. Fortunately, farmers did not face great obstacles on selling other commodities such as cattle, pigs and poultry, as they have learnt how to use scales and how to measure the live weight. They are getting used to asking for market information before selling a product.

4.3 How to sell produce at a higher price: villagers have got the principles that they could only ask for a higher price if their produce are in high demand and then in good quality. However, as sun drying of bulky produce is generally not feasible here, villagers have come up with the idea of putting more efforts on other farming activities such as animal husbandry and vegetable

growing. At present, the local demand for these produce has not been satisfied and villagers could sell their produce for small shops along the provincial road or even for local officers and visitors. Villagers now know that their produce are generally organically grown and thus have higher market value in town markets. Generally villagers know that good quality often result in a higher price and what they should do is to put more effort on the production side. Group activities are also mentioned as a feasible solution in increase the production volume and then their bargaining power. However, the production in this village is just started to increase, and farmers do not have much surplus produce for sales yet. Thus, it will take some time for their visions to come true.

4.4 Action plans (Vision) in the near future: Villagers have learnt to make simple SWOT analysis to make use of their strengths and opportunities as well as to reduce the weaknesses and avoid possible threats. In particular, they knew that climatic conditions in their village is not favorable for the storage of maize and cassava. However, these conditions are suitable for growing many kinds of vegetable. Additionally, their available sources of green and animal manure can be utilized for fish raising. Villagers have come up with an idea that they would rather use their cassava and maize for poultry and pig raising than to sell them as fresh produce.

For more concrete vision, some farmers said that they could focus on raising pigs and poultry, while the other wanted to expand their combined systems of gardens, fish ponds and husbandry. Farmers said that when more produce are ready, they could sell it along the provincial road which is right in front of their village. Some even dreamed of this location would develop to a small market. Again, it will take some time for farmers to turn their vision to real production and then marketing activities.

4.5 Personal assessments: So far, the project activities in Kon Ktau have resulted in some fruitful results and some villagers have produce for sale such as vegetables, fish and poultry. Farmers here put proper care on their gardens, fish ponds and stables.

The villager training in this commune was well delivered due to the efforts of both side: the trainer and the participants. With the participation of prestigious people from the village, it have firm reasons to believe that the visions and action plans proposed in the training will be put into real action.

Based on these reasons, the trainer assessed the results of this training as “very good”

5. The results of villager training in Nuoc Not village, Ngoc Tem commune

Like the participants in Po Ê commune, villagers in Nuoc Not village put proper efforts in the marketing training. The villagers have been carefully invited. All of them had reasonable educational background and more importantly they had some produce for sales. Participants kept on serious learning attitude: be on time, strictly followed the class regulations and did all the homework.

After the three-day training, villagers have got the followings.

5.1 How to calculate production costs: like the training in other project villages, farmers here liked this part very much. As there were more farming activities in Ngoc Tem (than in other project villages), it took longer time for this part. Farmers wanted to calculate the cost of different produce such as maize, cassava, fish, vegetable, pigs and cattle. They also come to the conclusion that they should put more efforts on livestock raising to make use of the favorable local conditions (warm climate, abundant grasses etc)

5.2 How to get market information: Compared to other project villages, farmers in Ngoc Tem were in the worst position of getting marketing information. The road to the village was poor, there was no telephone and the television signal is sporadic. As a result, farmers here lack of market information and they had a high dependence on village shops who, for their own benefit, seldom provide updated information to farmers. For example, in Ngoc Tem, produce is often sold in bags and nobody, possibly except the buyers know the exact weight of each bag. During group discussion, farmers said they had the feelings of being cheated on weight. They also thought that some buyers in their village might have concluded with one another in offering buying prices.

5.3 How to sell produce at a higher price: At the end of the training, farmers have got that the present transport system was the main difficulty for them to sell bulky produce like maize and cassava. In return, they should use grains and roots for livestock raising and then sell the animals. For every possible transaction, farmers would use the scale to know the exact weight of their produce. For them, market information could be obtained from radio, television, newspaper (freely distributed to the CPC) and then from CPC staff and village shops (with reducing priority).

5.4 Action plans in the near future: Villagers have learnt to make simple SWOT analysis to make use of their strengths and opportunities as well as to reduce the weaknesses and avoid possible threats. In particular, they knew it might take long time for the government to improve transportation system and information sources. To save themselves, farmers said they would focus their effort on the production side: grow more grains, roots and vegetables for self

subsistence and raise animals for sales. Group actions on production and marketing were also mentioned as a feasible solution.

5.5 Personal assessments: So far, the project activities in Ngoc Tem have resulted in some fruitful results and some villagers have produce for sale such as vegetables, fish, poultry, pigs and rabbits. Farmers here put proper care on their gardens, fish ponds and stables.

The villager training in this commune was well delivered due to the efforts of both side: the trainer and the participants.

Based on these reasons, the trainer assessed the results of this training as “very good”.

6. Training assessment by participants

6.1 In Dak Pne commune

Training assessment results											
	Average	Answers from participants (vary from 5 to 1)									
I About the training content	4.70	(points made by each participant)									
Encourage participation from learners	4.90	5	5	5	5	5	5	5	5	5	4
Activities in the training is realistic and useful	5.00	5	5	5	5	5	5	5	5	5	5
The training contents are realistic and useful	4.80	5	5	5	5	5	5	5	3	5	5
The material and handout is well prepared	4.60	4	5	5	5	4	4	5	4	5	5
Logistic facility is good for the training	4.40	5	5	5	5	3	3	5	5	4	4
The time is suitable for participants	4.50	5	5	5	5	3	4	5	4	4	5
II About the trainers	4.80										
Trainers are enthusiastic and responsible	4.70	5	5	5	5	4	4	5	5	4	5
Trainers reply all questions clearly and understandingly	4.90	5	5	5	5	5	5	5	5	4	5
Trainers encourage learners to share experience and knowledge	4.50	4	5	5	5	4	3	5	5	4	5
Trainers gave good examples and illustration	4.80	5	5	5	5	5	4	5	5	4	5
Trainers used different ways to deliver knowledge	4.90	5	5	5	5	5	4	5	5	5	5
Trainers had good knowledge and experiences	4.80	5	5	5	5	5	3	5	5	5	5
Trainers are well organised	5.00	5	5	5	5	5	5	5	5	5	5

Some qualitative assessments

- Villagers liked most the production cost calculation and profit estimation, then making action plans based on SWOT analysis.
- How to bargain with potential buyers is good

6.2 In Po E commune

Training assessment results											
	Average	Answers from participants (vary from 5 to 1)									
I About the training content		(points made by each participant)									
Encourage participation from learners	4.90	5	5	5	5	5	5	5	5	4	5
Activities in the training is realistic and useful	5.00	5	5	5	5	5	5	5	5	5	5
The training contents are realistic and useful	5.00	5	5	5	5	5	5	5	5	5	5
The material and handout is well prepared	4.70	4	5	5	5	4	4	5	5	5	5
Logistic facility is good for the training	4.40	5	5	5	5	3	3	5	4	4	5
The time is suitable for participants	4.60	5	5	5	5	3	4	5	4	5	5
Average assessment on training content	4.77										
II About the trainers											
Trainers are enthusiastic and responsible	4.70	5	5	5	5	4	4	5	4	5	5
Trainers reply all questions clearly and understandingly	4.50	4	5	5	5	4	3	5	4	5	5
Trainers encourage learners to share experience and knowledge	4.80	5	5	5	5	5	4	5	4	5	5
Trainers gave good examples and illustration	4.80	5	5	5	5	4	4	5	5	5	5
Trainers used different ways to deliver knowledge	4.70	5	5	5	5	4	3	5	5	5	5
Trainers had good knowledge and experiences	4.80	5	5	5	5	4	4	5	5	5	5
Trainers are well organised	4.60	5	5	5	5	3	3	5	5	5	5
Average assessment on trainers	4.70										

6.3 In Ngoc Tem commune

Training assessment results										
I About the training content	Average	Answers from participants (vary from 5 to 1)								
		(points made by each participant)								
Encourage participation from learners	5.00	5	5	5	5	5	5	5	5	5
Activities in the training is realistic and useful	4.90	5	5	5	5	4	5	5	5	5
The training contents are realistic and useful	4.90	5	5	5	5	4	5	5	5	5
The material and handout is well prepared	4.90	5	5	5	5	4	5	5	5	5
Logistic facility is good for the training	4.90	5	5	5	5	4	5	5	5	5
The time is suitable for participants	4.90	5	5	5	5	4	5	5	5	5
Average assessment on training content	4.92									
II About the trainers	5.00	5	5	5	5	5	5	5	5	5
Trainers are enthusiastic and responsible	5.00	5	5	5	5	5	5	5	5	5
Trainers reply all questions clearly and understandingly	5.00	5	5	5	5	5	5	5	5	5
Trainers encourage learners to share experience and knowledge	5.00	5	5	5	5	5	5	5	5	5
Trainers gave good examples and illustration	5.00	5	5	5	5	5	5	5	5	5
Trainers used different ways to deliver knowledge	5.00	5	5	5	5	5	5	5	5	5
Trainers had good knowledge and experiences	5.00	5	5	5	5	5	5	5	5	5
Trainers are well organised	5.00	5	5	5	5	5	5	5	5	5
Average assessment on trainers	5.00									

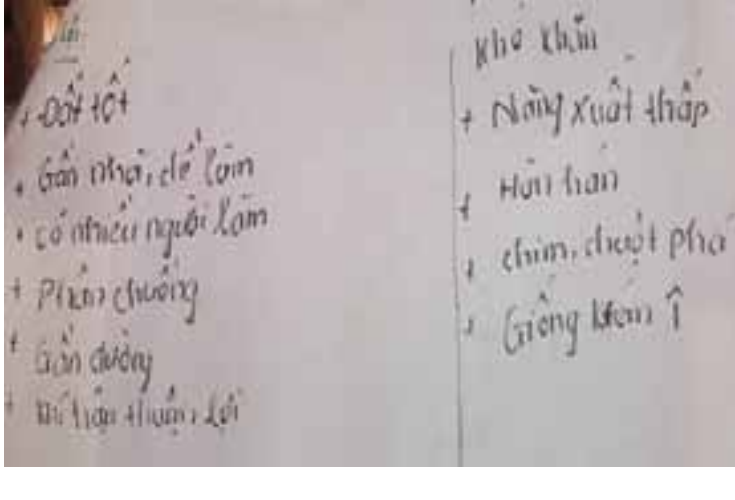
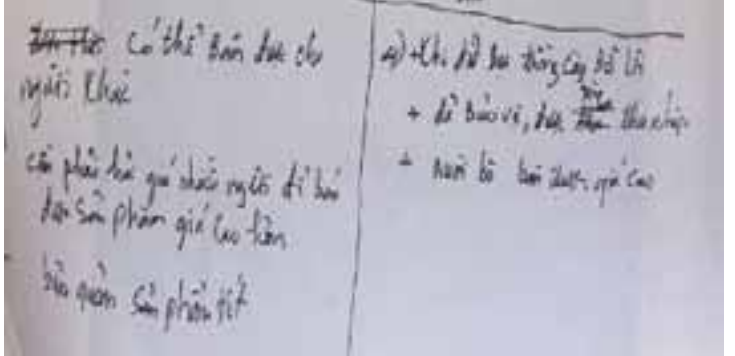


7. Training results through selected photos

7.1 CF training



7.2 Training in Dak Phe

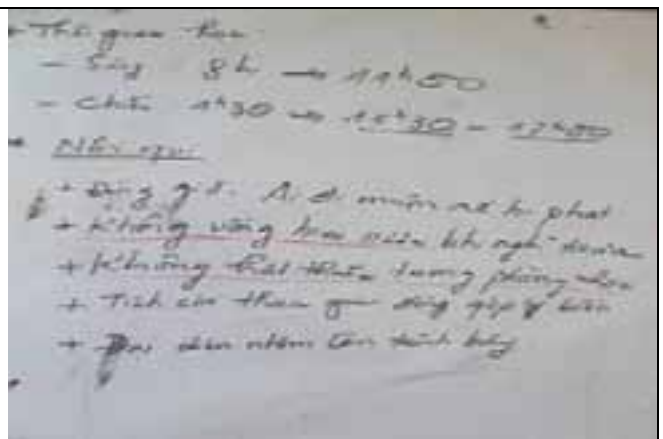
<p>Market prices of some commodities (informed by villagers)</p> <p>Maize: 2.000 đồng/kg Cassava chips: 1.500 đồng/kg Red bời lờ: 10.000 đồng/kg Green bời lờ: 4.000 đồng/kg Pig (live weight): 20.000 đồng/kg Duck: 80.000 đồng/each (2,5 kg) Fish: 14.000 đồng/kg Green coffee 10.000 đồng/kg Pineapple: not yet know</p>	
<p>How to sell cassava?</p> <ul style="list-style-type: none"> - Sell to trader Nghĩa, villagers set the price first. - Before selling, ask for current market price - In district village - At current price, villagers get some profit - Sometime, feel that prices are low - Because of low quality (green fungus, too dry result in light weight - Many buyers, price collusion hardly occur. - cheat on weight might occur -> should use own scale 	
<p>How to sell cassava at a higher price: A Hyao have a truck: Villagers can hire this truck to bring their produce to district market: Truck hire VND 200.000 (20 bags=1.000 kgs) Sell in village 1.5 millions Sell at district 2.3 millions Get more VND 800.000 (Note: in fact they got only 600.000)</p>	

<p>Strengths and weakness in growing cassava and maize</p> <p>Strengths: Good soil Near home venue, easy to work Have sufficient labor Have animal manure Near roads Favorable climate</p> <p>Weaknesses Low and reducing productivity Lack water Pest (birds, mice) Unreliable variety</p>	 <p>Handwritten notes in Vietnamese. The left side lists strengths: Đất tốt (Good soil), Gần nhà, dễ làm (Near home, easy to work), Có nhiều người làm (Have many workers), Gần đường (Near roads), Khí hậu thuận lợi (Favorable climate). The right side lists weaknesses: Khó tìm (Difficult to find), Năng suất thấp (Low productivity), Hư hao (Loss), chim, chuột phá (Birds, mice damage), Giống kém (Poor variety).</p>
<p>Resolutions: Ask different buyers to find the highest buying price Make sure good quality Grow boi loi after some seasons (when soil become infertile) Raise more cattle</p>	 <p>Handwritten notes in Vietnamese. The left side discusses asking different buyers for higher prices and ensuring quality. The right side mentions growing 'boi loi' (a type of soil) after some seasons and raising more cattle.</p>
<p>Action plans:</p> <p>For traditional crops (maize and cassava)</p> <ol style="list-style-type: none"> 1. Take proper care, weeding, apply manure. 2. Labor exchange to reduce monetary expenses 3. Ask for market price before harvesting 4. Apply post harvest techniques (using plastic covers). 5. Sell produce to those who make the best offer 6. Use scale 7. Sell in groups 	 <p>Handwritten notes in Vietnamese detailing action plans for traditional crops like maize and cassava, including steps like weeding, applying manure, and selling in groups.</p>
<p>Action plans:</p> <p>For new commodity: Raising fish Raising sow pigs!!!</p>	 <p>Handwritten notes in Vietnamese detailing action plans for new commodities like fish and sow pigs.</p>



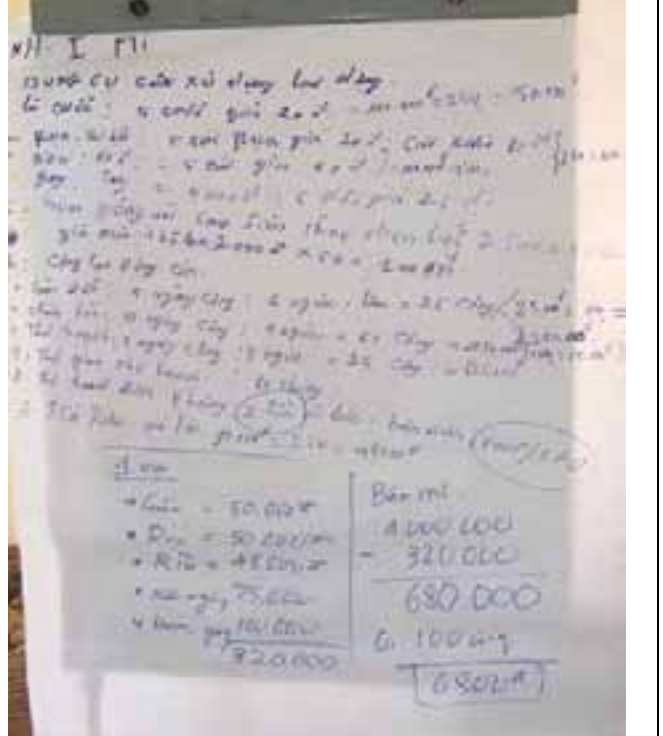
7.3 Training in Pờ Ê

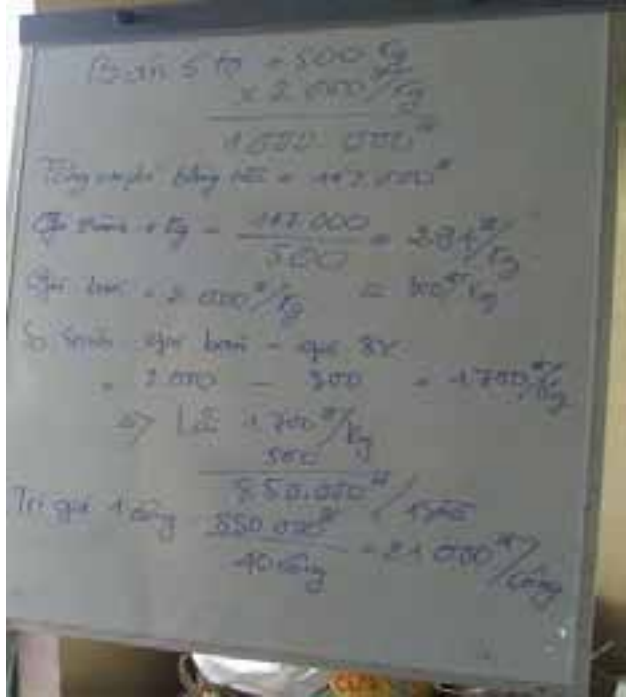
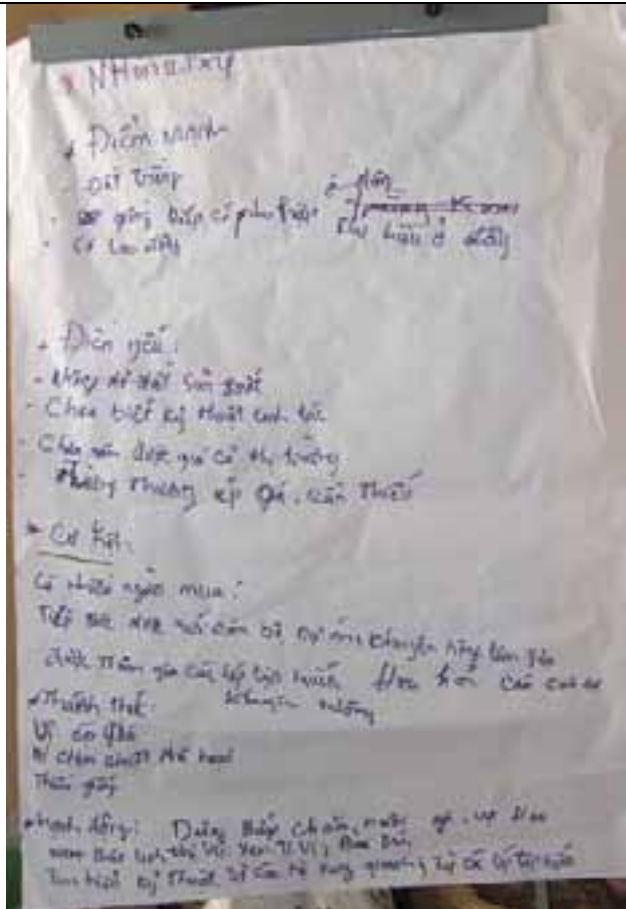
Time schedule:
 Morning 8:00-11:00
 (In fact we took 7:30-11:30 as requested by villagers)
 Afternoon: 13:00-17:00 (break at 15:30)
 Regulations:
 - Be on time, late comers punished
 - No drinks in lunch time
 - No smoking in class room
 - Be active in group discussion
 - Every one have to present in group



Production costs of cassava on 1000m²
 (Input provided by villagers)

Production: 2000 kg (fresh cassava)
 Selling price: 500 đồng/kg
 Turnover: 1.000.000 đồng
 Total monetary expenses: 320.000 đồng
 Gross margin: 680.000 đồng
 100 labor days
 Value of each labor day: 6.800 đồng



<p>Production cost of maize on 1000m² <i>(Input provided by villagers)</i> Production: 500 kg Selling price: 2.000 đồng/kg Turnover: 1.000.000 đồng Monetary expenses: 147.000 đồng Gross margin: 853.000 đồng 40 labor days Value of each labor day: 21.000 đồng.</p>	
<p>SWOT for maize growing</p> <p>Strengths</p> <ul style="list-style-type: none"> - Enough land - Local variety suitable for local conditions - Enough labor - Can intercrop in gardens <p>Weaknesses</p> <ul style="list-style-type: none"> Do not know cultivating techniques Do not know market price Be cheated on weight and prices by traders <p>Opportunity</p> <ul style="list-style-type: none"> Many buyers Supported by project CF, extension workers Visit good models <p>Threats</p> <ul style="list-style-type: none"> Price collusion by some buyers Pests (birds, mice) <p>Actions</p> <ul style="list-style-type: none"> Use maize for husbandry (pigs, poultry) Check market prices on television, radio Ask for growing techniques from good farmers, from trainings. 	

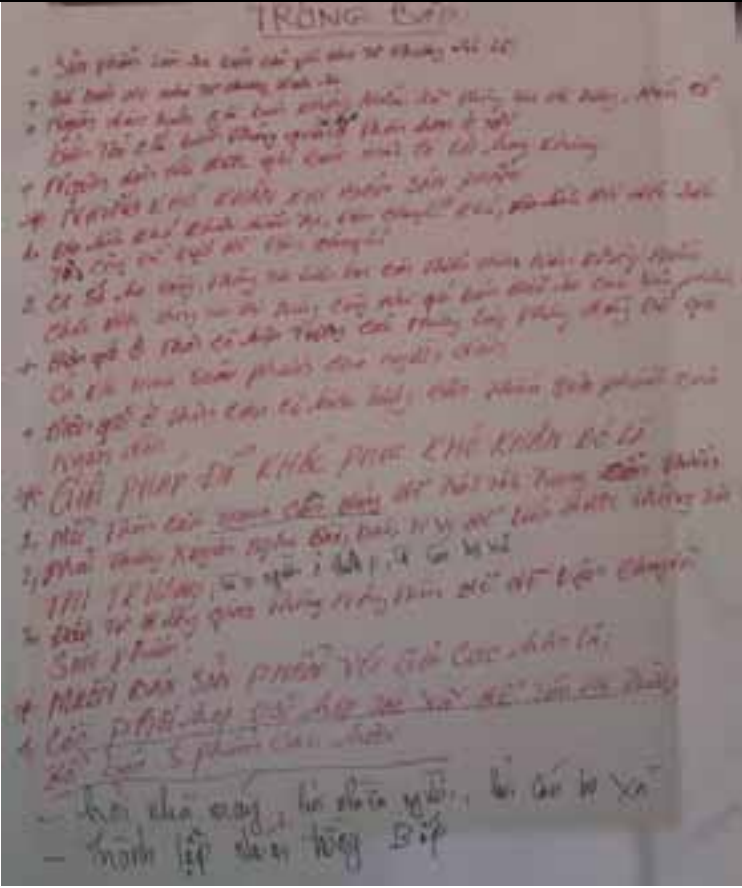
<p>SWOT for cassava growing</p> <p>Strengths</p> <ul style="list-style-type: none"> - Hand land - Variety provided by the project - Have labor - Many buyers, easy to sell <p>Weaknesses</p> <p>Cold climate, difficult in drying Lack of growing techniques Do not know market price Be cheated on weight</p> <p>Opportunity</p> <p>High market demand Supported by extensionists Be invited into trainings</p> <p>Threats</p> <p>Pests Price cheating</p> <p>Actions</p> <p>Find information from television Ask from other people, from all of the trainings. Ask for market information from television, radio, neighbors. Buy a new scale</p>	
<p>Action plans:</p> <ul style="list-style-type: none"> - Form common interest farmer groups. - Grow maize, vegetable, raising pigs. - Produce by contract/agreement with potential buyers - Take proper care to increase yield - Bargain prices with buyers - Ask for market information from different sources 	

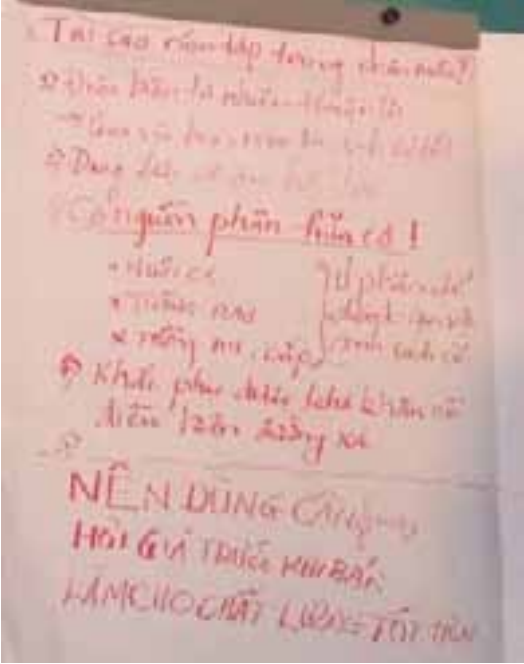
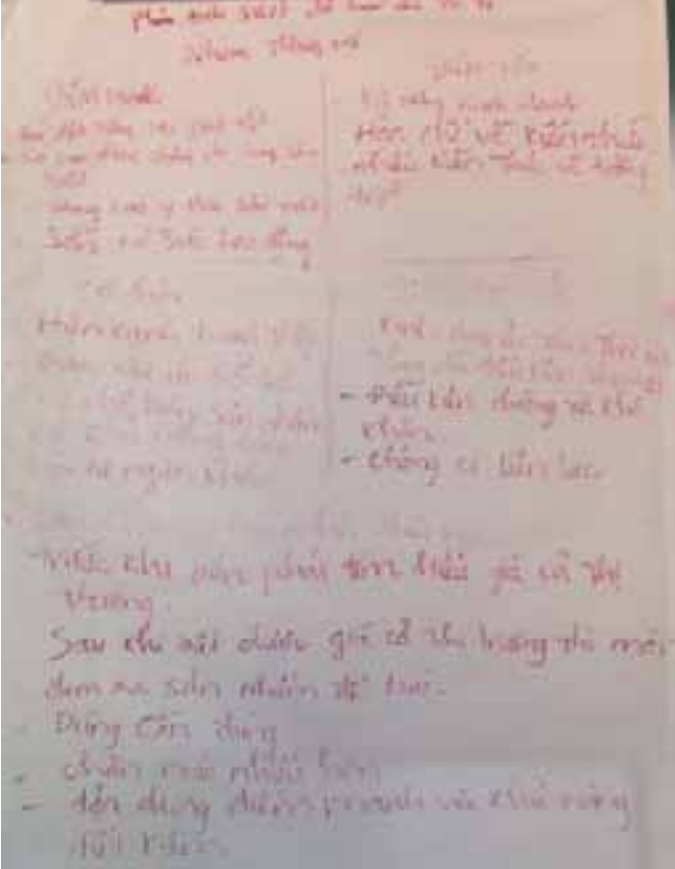
<p>Group 1: Raise pigs and poultry</p> <p>1. How to get more produce</p> <ul style="list-style-type: none"> - Take proper care so that the animals are in good conditions, no sick - Grow as much vegetable, cassava, maize as possible to feed the pigs - Grow more rice to feed poultry <p>2. Who to sell</p> <ul style="list-style-type: none"> - To local traders, commune officers, local shops. - To visitors <p>3. How to update market price</p> <ul style="list-style-type: none"> - From television, radio - Ask other people - Come to check market price <p>4. How to know whether make profit or loss</p> <ul style="list-style-type: none"> - Calculate production cost - Calculate home labor day 	<p>NHOM I. HEO, GA, VIT</p> <p>1) Làm sao để có nhiều sản phẩm để bán</p> <ul style="list-style-type: none"> - Chăm sóc tốt để lợn không bị bệnh - Trồng rau củ (khoai) nhiều để nuôi lợn - Trồng lúa để nuôi gà vịt, cho ăn bằng ngô <p>2) Bán cho ai</p> <ul style="list-style-type: none"> - Bán cho người trong vùng, bán cho xã, các quán hàng ngoài vùng - Bán cho khách hàng đến từ xa <p>3) Làm sao để biết giá thị trường</p> <ul style="list-style-type: none"> - Biết từ đài VTC - Biết từ những người bán hàng trong vùng - Từ đi thị <p>4) Làm sao để biết có lãi hay lỗ</p> <ul style="list-style-type: none"> - Tính giá thành sản phẩm - Tính công lao động
<p>Group 2: raising fish, grow vegetable</p> <p>1. How to get more produce</p> <p>Take care, weeding and apply manure for vegetable</p> <p>Use vegetable to feed pigs</p> <p>Use pig manure to feed fish</p> <p>Fence the gardens</p> <p>2. Who to sell</p> <p>To local shops and commune officers.</p> <p>To traders from Quảng Ngãi</p> <p>To visitors</p> <p>3. How to get market information</p> <p>Ask for different people who often sell</p> <p>Ask factory</p> <p>Ask commune officers</p> <p>4. How to know whether make profit or loss</p> <ul style="list-style-type: none"> - Calculate production cost - Calculate home labor day 	<p>NHOM II. CÁ, TRỒNG RAU</p> <p>1) Chăm sóc để cá tốt, cần cá, bán nhiều cho người</p> <ul style="list-style-type: none"> - Trồng rau để nuôi cá, lấy phân bón - Chăm sóc tốt - Rửa, dùng phân chuồng <p>2) Bán cho ai</p> <ul style="list-style-type: none"> - Bán cho người trong vùng, bán cho xã - Bán cho người trong vùng, bán cho người ngoài vùng <p>3) Tìm biết giá cá thị trường</p> <ul style="list-style-type: none"> - hỏi người bán hàng trong vùng - hỏi nhà máy - hỏi các bạn xã <p>4) Làm sao để biết có lãi hay lỗ</p> <ul style="list-style-type: none"> - Tính tổng công lao động ngày - Tính giá thành sản phẩm



7.4 Training in Ngoc Tem

<p>Regulations (words in red)</p> <ul style="list-style-type: none"> - Be on time - Be active in group discussion - Divide in 3 groups - Every one have to present in group - No smoking in class room - Do the homework 	
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<p>Growing maize Produce is now sold to village shops Prices are offered by buyers. Most farmers do not know market information. Only some can obtained from village meetings or via CPC staff. Farmers can now calculate production costs.</p> <p>Difficulties in selling produce 1, The transport system is poor, making it costly to sell goods. 2, Poor communications systems and farmers do not know market information. 3, Some buyers in the village have colluded (shake hands) on offer buying prices. 4, They might cheat on the weight</p> <p>Possible solutions Villagers should buy scales to protect themselves Frequently get market information from radio, television, from farmers in other village and CPC staff. (government) invest in transport system.</p> <p>How to sell produce at a higher price Cooperate with the cooperatives to sell goods. Ask for market information Form a farmer groups to grow and sell maize</p>	 <p>The image shows a piece of paper with handwritten text in Vietnamese. The title at the top is "TRUNG CẤP". The text is organized into several sections, some starting with "1.", "2.", "3.", "4." and others starting with "Hàng ngày", "Hàng tuần", "Hàng tháng". The content appears to be a list of points or instructions related to market information and transport, matching the text in the table to its right. The handwriting is in red ink on a light-colored background.</p>
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<p>Why efforts should be put on husbandry</p> <ol style="list-style-type: none"> 1. Favorable climatic conditions -> the animals are fat, grow quickly and give many young ones. 2. Receiving support from the project 3. Have organic sources To raise fish To make compost to grow vegetable To grow cassava and maize 4. To cure the present difficulty in transportation <p>How to get a higher price Use the scale Ask for market price before each transaction Have good produce</p>	
<p>SWOT for cassava growing</p> <p>Strengths</p> <ul style="list-style-type: none"> - Enough fertile land - Local variety suitable for local conditions - Enough labor - Can intercrop in gardens <p>Weaknesses</p> <ul style="list-style-type: none"> Do not know cultivating techniques Do not know market price Lack business skills <p>Opportunity</p> <ul style="list-style-type: none"> Competition is not the matter now Supported by project CF, extension workers Produce can be sold at any time <p>Threats</p> <ul style="list-style-type: none"> Price collusion by some buyers Poor transport system Poor communication system <p>Actions</p> <ul style="list-style-type: none"> Ask for market information before each transaction. Use a correct scale Put more effort on husbandry Saving. 	

Action plans

1. Sell cassava chips
2. Sell maize grain
3. Buy a scale
4. Get information from television, newspaper
5. Ask market information from other people
6. Marketing in group
7. Cooperate with processors

STT	Hành động	Lý do	Mục tiêu
1	Lên menu chi	để bán	100kg khoai
2	Đi chợ	để mua khoai	1kg khoai
3	Mua cân	để cân khoai	
4	Xem tivi	để biết giá	
5	Đi hỏi giá	để biết giá	
6	Đi bán	để bán khoai	
7	Đi hỏi giá	để biết giá	

Action plans (production side):

- Grow more vegetables
- Raise fish
- Raise honey bees
- Raise goats

STT	Hành động	Lý do	Mục tiêu
1	Tăng sản xuất	để bán	100kg khoai
2	Nuôi cá	để bán	100kg cá
3	Nuôi ong	để bán	100kg ong
4	Nuôi dê	để bán	100kg dê





8. Participants list

	Kon Tuc village, Dak Phe commune	Kon Ktau village, Po E commune	Nuoc Not village, Ngoc Tem commune
1	Y Thar	Dinh Xuan Ram	Dinh Xuan Lac
2	Y Dian	A Thi	A Le
3	A Nghiep	A Rom	Dinh Ngoc Chien
4	A Mlai	Y Min	Dinh Van An
5	A Hgiao	Y Hoa	A Doa
6	A Nghiu	Y Chanh	Y Luat
7	A Glip	A Thong	A Quyen
8	A Dok	A De	Y Len
9	Dinh Deo	A Bong	Y Lien
10	Nguyen Xuan Huy	A San	Y Te
11	A Dien	Tran Thi Hop	Tran Thanh Hung

Appendix 4

Appendix 4 The villager's idea/vision on selling farm produce (Outcome of the marketing trainings for the villagers)

To strengthen the villager's capacity for marketing agro-forestry products, the marketing trainings to the villagers were implemented in four model villages to deliver the basic knowledge/skill of marketing and to generate the villagers' idea/future vision on selling their produce. The villagers' ideas/vision in the four villages were as follows.

(1) Tu Ro Bang village, Dak Koi Commune

- Date of the training: 25- 27 February 2008

- Target commodity: Maize and Cassava *

(* Commodity for thinking of ideas/vision in the training was specified in advance only in Tu Ro Bang village. Maize and cassava were used for Tu Ro Bang village since the villagers produced relatively large volume for selling.)

➤ Sell at higher price by improving the drying method (quality)

Cassavas are harvested in February - March (dry season) and sun-dried on the ground. The quality may deteriorate (molding and turning blackish) if it rains since there is no protection against rain. The prices at farm gate are different by the quality now. This is the idea of achieving better price by improved quality; by covering cassava chips with plastic sheets during the nighttime to protect them from rain.

Maize is harvested in August during the wet season and proper drying is hard to apply. Thus, it is difficult to store the harvested maize, and the villagers sell the maize soon after the harvest. Some village traders use temporary shelter (roof) made with plastic sheets to dry collected maize. If the villagers can dry maize properly in the wet climate, it enable the villagers to store maize and to adjust selling time; have chances for selling at higher price. The villagers mentioned the use of plastic sheets to make roofed place in the training.

➤ Enhance the collection of price information

Some years ago, just a few traders came to the village to buy maize and cassava, and the villagers had no chance to bargain. At present, many traders come to the village and the villagers no longer depend on the particular traders; bargain with traders to sell their produce with better price. Regarding the price information, the villagers obtain the prices not only in the village but also at collection points outside of the village by their informal human information network. This is the idea of achieving the better bargaining by enhancing the information gathering and distributing/sharing.

Details about how to gather and distribute/share the information has not yet been discussed. It is desired that the VDB and the training participants work on it to set up a system.

- Set up the weighing service (A measure against cheating on weighing scale)

The traders use their scale to measure the weight of maize and cassava. There are traders who use cheap trick on their scale (displaying fewer than actual weight). To combat with the trader's trick, one villager bought a scale and provided the weighing service to other villagers with 1000VND/time. The villagers came up to the idea of setting another weighing service in the village for the convenience. It also expects to lower the current service fee.

To materialize this idea, the project has provided 100kg scale in the project office to the VBD.

(2) Kon Tuc village, Dak Phe Commune

- Date of the training: 16-18 May 2008
- Target commodity: Not specified in advance

- Grow crops or raise animals based on the market requirements

The villagers know that they should grow crops or raise animals based on the market requirements and higher prices can be achieved if their produce are in good condition. The villagers mentioned that the market requirements are: well-dried and white color for cassava chips; well-dried and no foreign matters for maize; and local-pig meat have higher market value than Mong cai pig.

- Skip the village traders (sell the produce at the district market)

Now, Kon Tuc village has easy access to Kon Ray town by truck since the road has been paved. The villagers presented the idea to get more profit by selling their produce directly in the district market: i.e. prices of 1 ton cassava chip were VND 1.5 millions at farm gate and VND 2.3 millions at the district market. Cost for hiring 1 ton truck was VND 200,000. Additional profit of VND 600,000 (VND 600/kg) was expected. The villagers realized that it would not be easy to have enough produce for full-load, and they cited the idea of forming a group.

- Group actions for production and marketing

The villagers cited the idea of forming a group for production and marketing; to bargain with potential traders easier/better. And added that they could try to form a group in the future.

A success in group marketing is quite a challenge. The villagers should not tackle a difficult task (group marketing) from the beginning. They should start with forming a group to help each other in production, and then move into a little more complicated collaborative efforts.

- Put more efforts in production

At present the villagers sell some crops such as cassava and maize but the marketable volumes are not so much. The villagers said that they would continue growing these crops for self-consumption and sell the surplus. The villagers showed their ideas to enhance the

productivity such as apply compost and more frequent weeding, continue their tradition of labour exchange to reduce monetary costs, and use plastic sheets to cover cassava chips/maize to reduce losses in sun-drying. For newly introduced fish and pig, the villagers mentioned that they would put more efforts on raising because these two products have constantly high market demand.

(3) Kon Ktau village, Poe Commune

- Date of the training: 19-21 May 2008
- Target commodity: Not specified in advance

➤ Put more efforts in production

At present the villagers do not have much surplus produce for sales. Therefore the principal point of their ideas was to put more efforts in production. Following ideas were mentioned in the training.

Use cassava and maize for poultry and pig raising

In Kon Ktau village, cassava cultivation for sales purpose started after the project initiation, and the production volume is still small. Moreover, sun-drying is not feasible due to wet climate in the harvest time, so that the villagers sell fresh cassava at farm gates although the price is unfavorable. Under this circumstances, the villagers came up with the idea that they would rather use cassava and maize for poultry and pig raising than sell them as fresh produce.

Produce vegetable, pig and poultry for local demand

The villagers mentioned that they would put more efforts on vegetable, pig and poultry production to sell to the local demand (small shops, CPC officers, etc.)

For the aspect of selling, following future visions were cited by referring the contents of the training.

- Group actions to increase production volume and bargaining power.
- Sell the produce at the provincial roadside if surplus production increases.

On the occasion when the villagers put their vision on roadside sales to execution, a simple shed (shop) and signboard will be required. In addition, it is believed that group operation will be required since many of the villagers are shy and not very good at math, also to save the time of individuals. To look after the shop for the benefit of the villagers, several persons who have aptitude for person-to-person selling (good with numbers/calculations and not very shy) and responsible/trusted by others will be required.

The small truck comes to Poe commune every morning from Quang Ngai to sell fresh food and daily necessities to Kin people in the commune. It must be possible to make an arrangement to

utilize this truck for shipping surplus farm products to Quang Ngai markets.

As regards the production, the villagers should make use of the cool climatic condition in the village; grow vegetables which can not be grown in Quang Ngai. For the shipping, make use of the regular truck from Quang Ngai.

(4) Nuoc Not village, Ngoc Tem Commune

- Date of the training: 16-18 June 2008
- Target commodity: Not specified in advance

➤ Make efforts to collect price information

Nuoc Not village is in the worst position of getting market information among the model villages: the road to the village is very poor, far from the markets, there is no telephone and TV signal is sporadic. As a result, the villagers lack the market information and they have a high dependence on village traders (shops). As a countermove to this situation (to do the bargaining with the traders), the villagers mentioned that they would make efforts to obtain update market information from various sources such as radio, TV, newspaper (at CPC), CPC staff and village shops.

➤ Use a scale to know the weight of their produce

Farm produce such as maize is often sold in bags and weighing is not practiced. The villagers do not know the exact weight of each bag, and they have feelings of being cheated in weight. As a countermove to this situation, the villagers mentioned that they would buy and use a scale in every transaction.

To materialize this idea, the project provided the 100kg scale in the project office to the VBD.

➤ Use cassava and maize for livestock husbandry

Poor road (transport service) hinder the bulky sales of maize and cassava. Therefore, the villagers came up to the idea that they would use maize and cassava for livestock husbandry and sell the animals.

➤ Put more efforts in production

The villagers know that it must take long time for the government to improve the road infrastructure. The villagers said that they would focus efforts on the production side: grow more grains, root crops and vegetables for self-consumption and raise animals for sales. Group action on production and marketing was mentioned as a feasible solution.

Appendix 5

**Report on
Environment Education Training Course
for villagers participating
in the project
on “Villager support
for sustainable Forest Management
in Central Highland”**

From July 3rd to July 7th, 2008

Kon Tum, March 2008

I. INTRODUCTION:

Lying on tropical climate region stretching many latitude lines, Viet Nam is considered as one of the countries having high forest cover, rich forests and many kinds of valuable wood in comparison with other countries in the region. However, forest coverage reduced to 14, 0 million hectares (account 43% of the area) in 1943 and forest coverage was greatly reduced in the following decades. According to statistics made by the MARD in 1990, the area of natural forest was reduced to 8.430 ha and the area of artificial forest was increased from 0 hectare (in 1945) to 745 hectares which accounted 27,2% of the territorial area

Understanding this actual situation, The Government launched national programmes in the field of forestry from 1993 such as 327, 556 and the National Five Million Hectare Reforestation Programme (661 programme) which aimed to regreen bare hills and rehabilitate poor natural forests. The result showed that the forest cover reached 36,1% in 2003 and 37,3% in 2004 with 12,3 millions hectares of forest. All state Forest agencies have been making the utmost efforts to increase the forest cover to 43% in 2010. The Central Highlands is the place where 22 rivers originate and help the climate of the Central Coastal Provinces, the Southeastern provinces and the lower section of the Mekong Delta be moderate. However, the Central Highlands lost 30.000 hectares of forest in decade 90 of the XX century. The forest area was separated into small forest patches. National Parks and Nature Reserve Areas have become isolated areas which limit forest animals to interact for the exchange of hereditary gene . The area of rich forests was reduced and the area of poor forests was increased quickly. Beside some subjective and objective reasons, slash and burn activities together with unreasonable farming of ethnic minorities were considered as main reasons of forest resource degradation in Kon Tum province. In order to limit this action, it is necessary to find out solutions to help villagers improve their livelihood and boost propagation campaigns which help villagers understand the roles and values of forest resources. This is the main reason why the project on “Villager support for sustainable forest management in central Highlands” carried out the Environment Education Training for villagers of the 5 model villages

II. Objectives of the training course:

The following are the main objectives of the training course:

- The awareness of participants about environment degradation, effects of forest degradation on crops, the role and importance of forest and dangerous impacts of degraded or deforested forest on villagers' lives is improved.
- The local communities understand their roles in Forest resource management and preservation and sustainable utilization of forest resource

III. PROGRAMME, CONTENT AND METHODS OF TRAINING COURSE

3.1. Training programmed:

The training course was carried out within 5 days (from March 3rd to March 7th, 2008 at the 5 villages supported by the Project.

Time and venue:

No.	Date	Village	Commune	District
1	03/3/08	Nước Nót	Ngọc Tem	Kon Plong
2	04/3/08	Vi Chiring	Hiêu	Kon Plong
3	05/3/08	Kon K Tau	Pờ Ê	Kon Plong
4	06/3/08	Kon Túc	Đăk Pnê	Kon Rẫy
5	07/3/08	Tu Ro Bang	Đăk Koi	Kon Rẫy

3.2. The training content:

3.2.1. Illustrated Lecture

3.2.1.1. Part I: The roles of Forest Resource

General awareness about Forest Resource

- The roles of Forest Resource in Social life:
 - Providing wood products
 - Providing non-timber products
 - Protecting and moderating forest climate
 - Protecting and improving forest lands
 - Protecting and managing water resources in forests
- Other positive effects of forests
 - Decreasing climate change in cities
 - Having Protective Effect to prevent sand to be mobile, restraining effects of storms and its aftermath to people
 - Having sand prevention purposes and protecting agricultural crops to gain greater yield than usual
 - Be ideal tourist sites
 - Playing an important role in National Defence and Security

3.2.1.2. Part II: Forest Resource Degradation – Actual situation, reasons and consequences

- The actual situation of Forest Resource in our country
- The reasons for the decrease of forest area
 - Changing the use purposes of forest land
 - Over exploitation of forest products (wood, firewood, non timber forest products
 - Forest fire
 - Population pressure
 - Poverty
 - Subsequent Consequences of Chemical War
 - Nomadic farming practices
- The consequences of Forest Resource Degradation on:
 - Community lives
 - Biological Diversity

- Environment

3.2.1.3. Part III: Some recommendations aiming at Sustainable Forest Resource Utilization and Management

- Recommendations on policies
 - Giving the communities more rights in forest management and protection
 - Participatory Forest Resource Management
 - Strengthening the effectiveness of issued laws and guidance documents on laws implementation
 - Effective implementation of Hunger Elimination and poverty reduction in order to strengthen villagers' livelihood
 - Checking scheme of 3 kinds of forests soon
 - Planning for groups of villagers living in mountainous areas soon
- Recommendations on technology
 - Strengthening forest enrichment and reforestation
 - Agroforestry implementation
 - Selecting suitable solutions to influence various forest types
- Some recommendations aiming at Sustainable Forest Resource Utilization
- Social solutions in Sustainable Forest Resource Utilization and Management
 - Promoting tree planting movement in holidays
 - Promoting tree planting and restoration activities in National Forests
 - Attracting interest of organizations and foreign private investors to Forest Planting and Environment Protection

3.2.2. Group discussion:

This content is to gain the 2nd objective of the training course

3.3. Implementation methods

Relying on the training content, training methods are described as followed

- **Part 1** (Lecture): The trainers used lectures which were illustrated with pictures and presented by projector on screen in order to introduce the contents mentioned in the items 3.2.1.1, 3.2.1.2 and 3.2.1.3 . In order to involve participants in the training content questions relating to the training content were inserted into the presentation part and this helped participants exercise their brain to answer the questions.

- **Part 2** (Group discussion): Time for this part was 2 and a half hour. All of the participants were divided into 2 to 3 smaller groups. The trainers were responsible for raising discussion topics for each group and these topics were based on the actual situation of the localities Therefore, the discussion topics were not the same among groups

IV. The discussion result

4.1. Nước Nót village - Ngọc Tem commune

4.1.1. Natural conditions, livelihood of the people and social and economic situation of the commune.

4.1.1.1. Natural conditions

- Geographical condition: Nước Nót village is situated next to the centre of Ngọc Tem commune and it is 43 km Eastern of the centre of Kon Plong district

- Weather condition: The area is mostly mountainous. It has 2 seasons. Dry season is from March to June and the highest temperature can reach 35°C. Rainy season is from July to the end of February of the next year and the average annual rainfall is about 3000mm and the average temperature is about 23°C. The commune usually becomes isolated from other communes in rainy season due to bad road condition. This commune has the most difficult traffic condition in comparison with the remaining communes.

- Soil condition: The commune's soil is mostly yellow brown soil affected by granite stones and alluvium clay

4.1.1.2. The livelihood of the people and social economic condition

Population: Nước Nót village has 79 households in which the ethnic minorities make up 98 %. They are mostly the Hre and Kdong people (with a total of 460). The people under the age of 45 make up 70 %.

- Social and Economic situation: According to the evaluation of the project in 2006, the poor households accounted for 100% and about 30 households usually faced severe food shortage during the between-crop period. The average income was just 5.340.000 VND/ household/ year. People's income comprises mostly of wet rice cultivation and upland crop production (rice, maize, cassava) and forest protection fee.

4.1.2. The result of the training course at the village

4.1.2.1. The participants

- Villagers of Nước Nót village: 26
- Leaders at commune level: 03
- The FPMB at district level: 01
- Commune facilitator: 01

4.1.2.2. Results

- *Lecture session*:

In this part, the trainers raised many questions relating to the roles of forest resource, the reasons and results of forest degradation.

The results showed that:



- The participants showed considerable interest and enthusiasm in the discussions and their answers to those questions were quite good

- The feedback got from participants showed that the communities worried and paid much attention to the forest degradation nowadays. They asked how to limit the amount of firewood and restore degraded forests.

• *The group discussion:*

+ Group division: All of the participants were divided into 3 groups

+ Following are the discussion topics of the three groups:

- **Group 1:** Does the village have any highly effective SLA model? What supports do the villagers need to implement such activities?

- **Group 2:** What kinds of non timber forest products does the village have? What do the villagers need to do in order to ensure the sustainable exploitation?

- **Group 3:** How to improve livelihood without destroying forests?

+ The topics determined based on:

- The area for wet rice cultivation is little. About 90 percent of cultivated land is upland fields where slope is 65 percent. The danger of soil wash-away and erosion is great .

- The main vegetable resources that the villagers get in dry seasons are from natural forests in high mountains or near streams because their land condition is poor and the weather is harsh.

- The villagers exploited non-timber forest products including both animals and plants unconsciously. Many kinds of animals like Pangolin, Porcupine... together with many kinds of valuable medicine plants have been reduced alarmingly. Therefore, it is extreme necessary to improve the awareness of villagers towards sustainable exploitation and utilization of non-timber forest products.

The preliminary survey showed that the local villagers live mainly on forest resources. Thus, the topic on how to limit the villagers' negative effects on forests and how to improve their livelihood was discussed in the training course.

* *The discussion results:*

+ **Group 1:**

The group determined that SLA activities such as Acacia, Boi Loi, pineapple, fruit tree planting (mango, longan, orange...) and coconut planting had high economic value and they could draw a transect diagram of 1 model

The group hoped to continue receiving provision of tree seedlings, animals, production tools and technical



training courses for the development of these activities.

Remarks:

- The diagram of transect walk drawn by the group closely reflected the models being implemented by the project on “Villager support for sustainable forest management in Central Highland”. However, there were 2 shortcomings which were explained to villagers as followed:

- Teprosia planting supported by the project hasn’t been mentioned yet.

- The above-mentioned 5 models are not considered as SLA models. They are considered as a simple act of forest or tree planting.

+ **Group 2:**

- 9 kinds of valuable non-timber forest products of the locality were determined: grass broom; various kinds of bamboo, rattan, orchid, Kim Coung leaves, Linh Chi mushroom, bamboo shoots and forest honey.

The group members added fruits of Scaphium Lychnophorum Kost, Chestnut seeds, Cinnamon shell, green tea and some kinds of animals to the group of non-timber forest products

- The group also offered 3 suggestions on sustainable resource utilization: (1) Selective exploitation, the unconscious actions like over-exploitation or deforestation should be banned completely, (2) Paying attention to plant kinds of trees on household scale (3) Tending and protecting them .

The discussion result showed that the villagers of Nước Nót village had a full understanding of the actual situations and solutions relating to sustainable utilization of non-timber forest products. However, non-timber forest products of the locality are being remarkably reduced. Following are the main reason for this actual situation:



- The locality hasn’t issued the management polices on exploitation of non-timber forest products and households exploited forest products unconsciously .

- Most of the villagers were aware of close relationship between forest resource and non-timber forest products. Non-timber forest products will be reduced if forest resource is deforested .

- Many households who usually lacked of food have placed great pressure on forest resource in general and non-timber forest products in particular

+ **Group 3:**

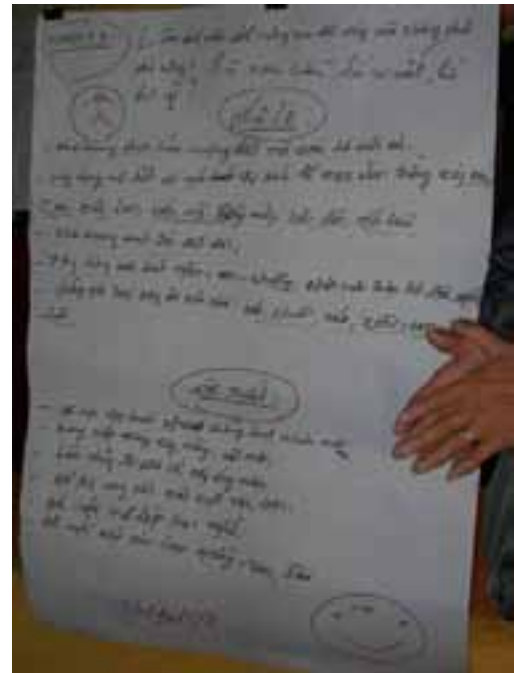
- Following are the 3 main solutions suggested by the group in order to improve livelihood of the villagers and reduce pressure on forest resource gradually.

(1) Building the garden-fish pond-stable and SLA models . Simultaneously, planting kinds of trees of high economic value (Acacia, Boi Loi, Aquilaria and kinds of fruit trees) is paid much attention

(2) Reclaiming virgin soil and rehabilitating old fields should be paid much attention.. It’s necessary to increase productivity of trees as well as crops gradually.

(3) The villagers expect to be supported with tree seedlings and livestock which have high economic value, have loaned capital to develop economy and take part in vocational training courses in order to solve the status of redundant employment nowadays.

In conclusion, the above-mentioned suggestions reflect the villagers' awareness about the relationship between Forest Resource Protection and Management and Economic Development of households. These solutions also indirectly reflect the effectiveness of 11 models including animal husbandry, fruit tree planting and SLA model which are being implemented at the locality thanks to the support of the project on "Villager support for sustainable forest management in the Central Highland".



4.1.2.3. General evaluation:

- The villagers are quite dynamic and enthusiastic . They have quite full awareness of the roles of Forest Resource toward the community live and understand negative effects caused by degraded or lost forest .

- The villagers also have a full understanding of the relationship between Household Economic Development (including the implementation of sustainable farming, selection of tree seedlings and animal livestock which have high economic value and utilization of employment resource) and the Effectiveness of Forest Protection and Management at the locality.

4.2. Vi Chiring Village - Hiếu commune:

4.2.1. Natural conditions, livelihood of the people and social and economic situation of the commune.

4.2.1.1. Natural conditions

- Geographical condition: Vi Chiring village consists of 2 areas. The new area is next to the center of Hieu commune and the old area is about 3 km from the center of Hieu commune and about 19,8 km Northeast of Kon Plong district. This village has the most convenient traffic conditions in comparison with the 4 remaining model villages of the project.

- Weather conditions: The village situated at the height of 1200-1300 m above sea level. The average annual rainfall is 2600mm . The average annual temperature is 20°C and there are 2 clear seasons. Dry season is from January to April with the average monthly rainfall of below 50 mm. Rainy season is from May to December. Fog occurs frequently .

- Soil conditions: Soil of village is mostly reddish brown soil, humus soil and alluvium clay soil.

4.2.1.2. The livelihood of the people and social economic condition

- **Population:** The village has 23 households with 103 people. Most of people are M’Nam ethnic people.

- **Social and Economic situation:** According to a survey carried out in 2006, the average income of each household was 3.000.000 VND per year. Wet rice cultivation bring villagers main income source . The extra jobs develop weakly. About 10 household faced severe food shortage during the between-crop period.

4.2.2. The training result:

4.2.2.1. Participants:

- Villagers of Vi Chiring village: 26 people
- The Forest Project Management Board at district level: 01
- Representatives from the commune: 03
- Commune facilitator: 01



4.2.2.2. Results:

- **Lecture session:**

The good answers from villagers to the questions relating to the roles of Forest resource, the reasons and consequences of forest degradation and sustainable protection and management of Forest Resource showed that the villagers were intelligent. Although the villagers of this village weren’t as dynamic and enthusiastic as the villagers of Nước Nốt village - Ngọc Tem commune, many answers exceeded the trainer’s expectation .

- **Group discussion:**

+ Group division: All of the participants of the training course were divided into 3 groups.
+ Following are the discussion topics of the 3 groups:

- **Group 1:** Are you aware of the role of organizations, communities and households and individuals in the management and protection of forest resource?

- **Group 2:** What do you have to do in order to improve living conditions without deforesting forest?

- **Group 3:** What are the responsibilities and rights of the villagers in forest resource protection and utilization?

+ The above questions determined based on:

- Among 5 model villages, training on sustainable forest management was only carried out at Vichiring village. Therefore, the villagers here have a full understanding of their role and the roles of organizations and communities in Forest Resource Protection and Management .



- This is also the only village which received the project's support to build forest development and protection regulations. These village regulations mention all of respects relating to Community Forest Protection and Management . It was clearly mentioned about what villagers are allowed to do, what villagers aren't allowed to do and the rights of villagers and communities in exploitation and utilization of forest resource. The group discussion topics were to check whether the community remember and follow the regulations made by them or not.

- Vichiring village has a great natural forest area with many kinds of valuable trees and the forests are being managed according to criterias for sustainable forest management. However, the amount of forest trees still lies below stable forests standards according to the experts' calculation. Thus, Forest Resource Protection and Management is the main responsibility of villagers. Living conditions of Villagers are really difficult because their lives depend greatly on wet rice cultivation (one crop per year) and upland field cultivation. Therefore, the topics on how to limit negative effects of communities to forests and how to improve villagers' livelihood were discussed in the training course.

* Discussion results:

+ **Group 1:**

Ven diagram was used to evaluate the various levels of influence of organizations, communities, households and individuals to forest resource. The Ven showed that 9 agencies at provincial and district levels and 16 agencies, organizations, households and individuals related directly as well as indirectly to the forest resource management of locality. Among these agencies, JICA project has been evaluated as an organization which has direct influence to community forest management through supporting techniques on animal raising, cultivation and Forest Resource Management Techniques. The group affirmed that households and Household groups have the most important role in the Forest Protection and Management and these two factors determine the existence of forest.

+ **Group 2:**

In order to improve the economic conditions of households and decrease the pressure on Forest Resource gradually, the group 2 suggested 6 main solution groups:

(1) Planting non-timber forest tree species (rattan, Amomum, Bamboo) under forest canopy.

(2) Gradually changing the structure of plants and animals in order to make it suitable for the commune's conditions. It was suggested that the villagers should utilize loaned capital actively so as to develop the animal models such as buffalo, cattle, pig, chicken, fish and bee.... raising and kinds of fruit trees which give high economic value.

(3) Sustainable SLA models are extended and Experience sharing is facilitated.

(4) Reasonable exploitation of wood and firewood and Ecological Tourism Development is considered a helpful way to protect forest biodiversity.



(5) Close attention is paid to Family planning programme and Investment in Education

(6) Close attention is paid to traditional occupation.

In comparison with the 3 solution groups suggested by the villagers of Nước Nốt village of Ngọc Tem commune, solutions suggested by villagers of Vichiring village are more all-sided and complete. However, there were several suggestions that were far from reality such as increasing the area of wet rice, the area of two-crop rice, developing coffee trees and gradually replacing manpower by machine power.

-It is really difficult to increase the area of wet rice because the villagers have already reclaimed virgin soil which can be used for wet rice cultivation.

-In the winter crop season, it is very difficult to plant rice crop and other kinds of crops at Hieu commune because of cold and foggy weather.

-Development of coffee trees relate to the change of land use purpose. Therefore, forest may be seriously deforested if there is not a concrete scheme.

-Villagers' aspiration on gradually replacing manpower by machinery is very legitimate. Nevertheless, the 3 following points are far from reality: (i) Villagers are unable to buy machines because of poor economic condition, (ii) uneven terrain , (iii) When manpower is replaced by machines, people will affect to Forest resource if they are not arranged for suitable works.

+ **Group 3:**

- The main responsibilities relating to Forest Resource Protection and Management were determined as followed: Banning Wood exploitation, banning people from hunting wild animals, preventing negative effects from outside, banning people from deforesting forest for making fields

- The group also determined the community rights in wood exploitation for family use, firewood exploitation and non-timber forest products.



The villagers have a full understanding of their responsibilities and rights presented in the Forest Protection and Development Regulations of the village. However, the responsibilities relating to Technical support for Forest Protection and Management, Annual Plan Making and the share of benefits earned from commercial wood products haven't been mentioned yet.

4.2.2.3. General remarks:

The villagers of Vi Chiring village - Hiếu commune were less ebullient than with the villagers of Nước Nốt village - Ngọc Tem commune. However, they participated the training course with serious and open-hearted attitude. The villagers' answers to the questions relating to the roles

of Forest Resource, solutions for Sustainable Forest Resource Utilization and Management were quite clear and complete.

- The villagers also found out suitable solutions so as to improve their livelihood besides technical supports from JICA project. They were fully aware of how the issues such as population, family planning, education level, Hunger Elimination and Poverty Reduction programme and Forest Resource Management are related to one another

- Through the evaluation part on the effects of organizations, households and individuals to Forest Resource Protection and Management, the villagers were awared of their role in this issue.

4.3. Kon K Tau Village - Pò Ê Commune:

4.3.1. Natural conditions, livelihood of the people and social and economic situation of the commune

4.3.1.1. Natural conditions

- Geographical condition: KonKtau village is situated next to the center of PoE commune. It is 34, 4 km northeast of the center of Kon Plong district and the Highway 24 passes the village's center.

- Weather condition: The village situated at the height of 900-1000 m above sea level. The average annual rainfall is 2800mm. The average annual temperature is 20°C and there are 2 clear seasons: Dry season is from May to December. Dry season is from January to April with low average rainfall.

- Soil conditions: Soil of the village is mostly basalt soil, yellow brown soil and sandy alluvium soil.

4.3.1.2. The livelihood of the people and social economic condition

- Population: The village has 58 households with 245. Most of people are H' Lê ethnic people.

- Social and Economic situation: According to a survey carried out in 2006, the average income of each household was 4.000.000 VND per year and this annual income was higher than the average income of each household of ViChiring village - Hiếu commune but lower than that of Nước Nốt village -Ngọc Tem commune. Wet rice cultivation and forest protection fee bring villagers main income source. About 04 household faced severe food shortage during the between-crop period.

4.3.2. The training results

4.3.2.1. Participants

- Villagers of Kon K Tau: 19
- Forest Project Management Board at district level: 01
- Commune's leaders: 02
- Commune facilitator: 01

4.3.2.2. Results

- *Lecture session:*



In the lecture part, questions were inserted into presentation part. Because of different ages and different levels of ability, the participants showed difference in their awareness to questions (2 representatives were from the CPC and Cultural Board of the commune, Mr. A Đê _ the oldest participant among the 19 remaining participants_ is 40 years old, Mr. A Thó _the youngest_ is 11 years olds and only one participant studied up to grade 9)

- *Group discussion:*

+ Group division: All of the participants of the training course were divided into 2 groups.

+ Discussion topics were as followed:

- **Group 1:** Draw Land-use Map for their own village

- **Group 2:** Make a list of what you are allowed to do and what you are not allowed to do towards Utilization, Management and Protection of Forest Resource

+ The above topics were determined based on:

- According to the JOFCA's experts and staff in forest department of the commune: Wood and firewood were exploited freely by the village people at many different places. Some village individuals had negative reactions and lacked of positive cooperation with functional agencies when they were detected to violate Forest Resource and this caused many difficulties to Forest Resource Protection and Management.

- The regulations on Forest Resource Development and Protection, which were made by the communities have been propagandized to the village people by forest Department. However, (1) these regulations were not built based on the agreement reached by community so the villagers had superficial understanding of their rights and responsibilities such as what they are allowed to do and what they are not allowed to do toward Management and Protection and Utilization of Forest Resource, (2) This was an opportunity to raise villagers' consciousness of Protection of Forest Resource and Ecological Environment because participants of the training course were at young ages

* Discussion results

- + **Group 1:**

Thanks to efficient support from the staff in Forest Department of the commune, the villagers could draw land-use map for their own village. In the map, natural forest, paddy fields and living area were drawn clearly.

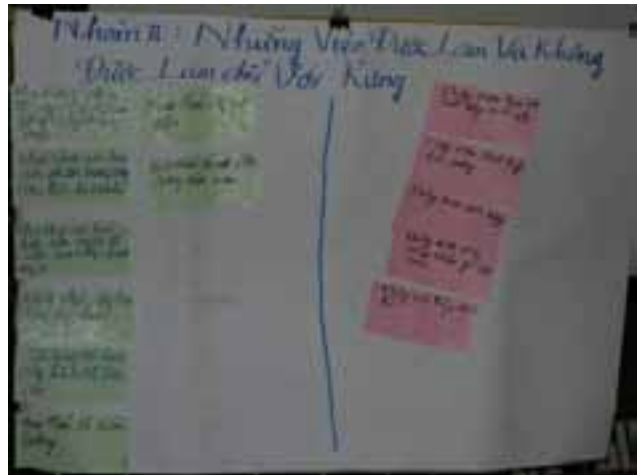
The group clearly explained the actual situation of forest resource in each area and determined the places where wood and firewood are regularly exploited. The group could give an explanation of the role of watershed forest and their effects on agricultural cultivation.

- + **Group 2:**



- This group could determine what they are allowed to do: (1) exploitation of non-timber forest products such as tree roots, Kim Cuong leave, Dón vegetables, forest mushroom, honey...; (2) exploitation of dry firewood; (3) Wood exploitation based on regulations

- Following are the things they are not allowed to do: wild animal hunting, exploitation of scarce and valuable woods, slash and burn practices and free-range raising of cattle and buffaloes.



In conclusion, the villagers are aware of their responsibilities and rights in the Management, Protection and Utilization of Forest Resource. However, in the reality, many kinds of precious wood like rosewood are usually exploited and this exploitation is uncontrollable. Slash and burn agriculture occur regularly, firewood collected includes not only dry tree branches but logs of wood felled. This showed the difference between awareness and action of the community nowadays.

4.3.2.3. General remarks:

Because of different ages and different levels of ability, there was difference in their awareness of Forest Resource and its effects on people and ecological environment. Villagers showed their enthusiasm in the training course.

The topics were discussed ebulliently with support from the trainers. However, the discussion results showed that the villagers could not exactly reflect the actual situation of the management and utilization of Forest Resource at the locality nowadays.

4.4. Đăk Pnè commune - Kon Túc village

4.4.1. Natural conditions, livelihood of the people and social and economic situation of the commune

4.4.1.1. Natural conditions

- Geographical condition: Kon Tuc village is about 2 km from the center of Dak Pnè commune and about 4, 9 km eastern of the centre of Kon Ray district.
- Weather condition: The village situated at the height of 600-700 m above sea level .The average annual rainfall is 1800mm. The average annual temperature is 24°C and there are 2 clear seasons: Dry season is from May to October. Dry season is from November to April and there is little rain.
- Soil condition: Soil of the village is mostly yellow brown soil and soil is less fertile.

4.4.1.2. The livelihood of the people and social economic condition

- Population: The village has 94 households with 445 people. Most of people are Bahnar ethnic people.
- Social economic condition : According to a survey carried out in 2006, the average income of each household was 3.400.000 VND per year. Cassava, rice and maize bring villagers main

income source. Statistics showed that about 53 household faced severe food shortage during the between-crop period.

4.4.2. Results of training course

4.4.2.1. Participants

- Villagers of Kon K Tau: 22
- Forest Project Management Board at district level: 01
- FPMB: 01
- Commune facilitator: 01



4.4.2.2. Results

- *Lecture session:*

- The villagers were very open-hearted.

Some villagers took the initiative in discussion

session of their own groups about issues relating to the content of the presentation session.

- The villagers gave full and complete answers to the questions raised. Moreover, the villagers ebulliently discussed about the locality's actual issues relating to the forest management and protection. This showed that the villagers worried much about the situation of Forest Degradation nowadays.

Group discussion:

+ Group division: All of the participants of the training course were divided into 3 groups

+ Discussion topics were as followed:

- **Group 1:** What are the roles of organizations, communities, households and individuals in Forest Resource Management and Protection?
- **Group 2:** What should be done in the Forest Fire Fighting and Prevention at the locality?
- **Group 3:** What are the responsibilities and rights of the villagers in the management, protection and utilization of Forest Resource?

+ The above discussion topics were determined based on the reality of Kon Tuc village. The village has a small area of forest in comparison with the above-mentioned villages. The forest in here is known as the tropical dry forest with a lot of oil trees so forest is easy to get burn in dry season – and in the season when the Barnar ethnic people do slash and burn agriculture. So far, forest fire has been considered as one of the main reasons that reduce the area of forest. Therefore, one of the main topics need to be discussed is to think of solutions for forest fire prevention. The villagers need to be fully aware of the roles of organizations, individuals, communities as well as the responsibilities and rights of communities in the Sustainable Management, Protection and Utilization of Forest resource.



* *Discussion results:*

- + **Group 1:**

The Ven Diagram made by the group 1 showed that 19 organizations, households and individuals directly and indirectly affect the Community Forest Resource.

Among the relevant agencies, the group assured that the policy bank of Kon Rẫy district, ADB project and JICA project have the strongest influences on communities, household groups and households through improving their livelihood and simultaneously reduce pressure on forest resources.

Unlike Vichiring's villagers, the villagers of Kon Tuc emphasized the role of Forest Fire Fighting and Prevention Board of the village, staffs of forest departments and forest enterprises in the community forest protection and management. However, the villagers of both villages assured that the individuals, households and communities have the strongest direct influences on Forest resources of the locality and they decide the existence of forest.

+ **Group 2:**

5 solutions for forest fire prevention and 4 solutions for forest fire fighting were determined. The group was praiseworthy because they could raise those solutions which were really complete, systematic and clearly explained. In order to fight and prevent forest fire, the villagers have already known how to construct fire bands (their width depends on various types of forest) and hedgerows (pineapple). It is necessary to improve the villagers' awareness of Forest Fire Prevention and Fighting through propagation



+ **Group 3:**

- The community's responsibilities were determined as followed:

(1) Taking part in the Protection and Management of forest resources and Forest fire fighting and prevention positively.

(2) The villagers are not allowed to exploit wood and hunt precious animals uncontrollably.

(3) The villagers have to plant forest trees in order to regreen the unused land and bare hills.



The villagers are aware of the importance of Forest Protection

- The villagers have a full understanding of their responsibilities towards wood exploitation and they are aware that they can only exploit wood when they receive permission from the CPC and they are allowed to exploit the non-timber forest products. Like the villagers of Vi Chiring village of Hiếu commune, the villagers of Kon Tuc village could not realize their rights in making decisions relating to Forest Management and Protection at the locality.

4.4.2.3. General remarks:

The villagers participated in the discussion and answered the questions ebulliently. The discussion results met the requirements.

4.5. Tu Ro Bang village - Đăk Kôi commune

4.5.1. Natural conditions, livelihood of the people and social and economic situation of the commune

4.5.1.1. Natural conditions

- Geographical condition: Tu Ro Bang village is about 5 km from the centre of Dak Koi commune and about 37, 9 km northwest of the centre of Kon Rẫy district.

- Weather condition: The village situated at the height of 700-800m above sea level. The average annual rainfall is from 1700mm to 1800mm. The average annual temperature is 23,5°C and there are 2 clear seasons: Dry

season is from May to October. Dry season is from November to May.

- Soil condition: Soil of the village is mostly reddy brown soil, muddy soil, sand alluvium soil and soil is less fertile

4.5.1.2. The livelihood of the people and social economic condition

- Population: The village has 21 households with 125 people. Most of people are Xê Đăng ethnic people.

- Social economic condition: According to JICA's evaluation, the average income of each household was 2.500.000 VND per year and it is difficult to determine their main income resource. Among the 5 model villages, Turobang has the most difficult economic condition and most of the households faced severe food shortage during the between-crop period.

4.5.2. The training results

4.5.2.1. Participants:

- The villagers of Tu Rô Bang village: 15
- Representative from the FPMB of the district: 01
- Representative from the commune: 01
- Commune Facilitator: 01



4.5.2.2. Results

- *Lecture session:*

Unlike the initial prediction, the villagers were serious in the training course.

The questions inserted into the presentation session were discussed in small groups before raising the final answers. The accuracy level of the answers partially reflected the actual difficulties which the villagers are facing when the forest area is remarkably reduced in terms of both quantity and quality.

- *Group discussion:*

+ Group division: All of the participants of the training course were divided into 2 groups

+ The discussion topics:

- **Group 1:** What are the responsibilities and rights of the villagers in Protection and Utilization of the Forest Resource?

- **Group 2:** What should the villagers do to improve the living conditions without destroying forest?

+ The discussion topics were determined based on:

The villagers of Tu Bo Rang village moved to the new place which is about 3 km from the old place in 2001. The paper processing company planted pine in all of their former cultivation area. About 4 years ago, they faced many difficulties after they moved to the new area because the fields surrounding their habitat did not belong to them. In addition, they were separated from the forests to which the villagers used to have strong attachment.

Receiving the support from the local authority, the villagers' living conditions are gradually improved. Each villager has on average 1000m² of wet rice, 5000m² of upland fields and 1 cow. However, the villagers have been creating great pressure on forest resources because they have not escaped from poverty. The training course helped the villagers be aware of their responsibilities and rights in the management and protection of the forest resources and how to improve their livelihood. The discussion topics were determined as followed:

* *Discussion results:*

+ **Group 1:**

- The main responsibilities relating to the management and protection of forest resources, effects of people and animals, forest fire fighting and prevention and forest tree planting were determined.

- The group determined the 3 main groups of rights including the right to exploit non-timber forest products (Amomum, honey, Bamboo, medicinal plants..), dry firewood and the right to receive forest protection fee.

+ **Group 2:**

In order to improve the villager's economic life and gradually reduce the pressure on forest resources. The group 2 raised 4 main groups of solutions:

(1) Promotion of animals, poultry, bee raising

(2) Planting vegetables and non-timber forest products which bring economic value and applying advanced techniques in sustainable cultivation.

(3) Carrying out family planning and pay much attention to education.

(4) Investment for the development of by-trade jobs.



4.5.2.3. General remarks:

The villagers had a full understanding of the meaning of the training course because they have been facing many difficulties caused by the lost forests. This was the chance for them to get together to preserve and develop the remaining forest resources and simultaneously find out the ways for economic development, improve their income and keep forests green forever.

5. CONCLUSION AND LESSONS LEARNT:

5.1. Conclusion:

Based on the results of training courses carried out at the 5 models villages of the project on “Villager support for sustainable forest management in the Central Highland”, we raised some main evaluations as followed:

- The villagers and local authorities showed different levels of enthusiasm. Nước Nót village of Ngọc Tem commune and Vi Chiring village of Hiếu commune had 29 participants in the training course. Kon K Tau village of Pờ Ê commune had 21 participants and Tu Rô Bang village of Đăk Kôi commune had 16 participants. Especially, one household of Kon K Tau village had 3 members participating in the training course and the youngest member is just 11 years old (premature age).

- There was difference in the villagers’ awareness of the roles of forest resources and aftermaths of deforestation. The participants of ViChiring village of Hiếu commune provided clear and complete answers. The villagers of Nước Nót village of Ngọc Tem commune raised questions that reflected their worries. However, villagers of Kon K Tau village of Pờ Ê commune participated in the training course passively.

- The discussion topics were plentiful and suitable to the actual situations of localities. The villagers showed their enthusiasm in the training course and the training course created a chance for the villagers to express their own ideas and suggest solutions to the actual issues of their own locality by themselves. Therefore, the villagers from different villages raised different answers to the same question and this reflected their different living environments.

Thanks to the trainers’ effort, supports from the Forest Project Management Board of Kon Tum province, JICA project and cooperation from the commune facilitators, the training course have gained the objectives.

5.2. Lesson learnt:

Following are the lessons learnt through the training course:

- *Organization:*

+ The commune facilitators should inform the villagers about the specific plans for the training activities as soon as possible in order for the villagers to arrange their time to join the training course actively

+ The trainers should spend more time researching the training places and interview the villagers to have an evaluation on the villagers’ awareness level and the actual situation of the localities. These actions help the trainers have suitable solutions.

+ The training duration should be longer in order that the villagers have more time to think of contents of training before exchanging or presenting their ideas. It will be easy for the villagers to remember the training contents.

- *Professional knowledge:*

+ The lecture session was illustrated by dynamic pictures and really effective.

+ The villagers discussed the topics relating to the actual conditions of their localities enthusiastically because they understand that this chance allowed them to find out solutions for issues directly relating to their lives.

Although the solutions suggested by the villagers were rights, but they were theoretic solutions and even contradictory with what they were doing. This is an objective shortcoming which hasn't been solved because of the training course's framework.

Appendix

Appendix 1: Handwriting materials for the commune facilitators

Appendix 2: The training presentations

APPENDIX 1

1. Part 1: The role of forest with human life

1.1. General consciousness of forest resources

Forest is the most composition of biosphere, accounting four billion hectares. It is the basic material resources and intellectual resources which fully meet human's needs who are living inside or near forest. Between the forest and human, there is a close relationship and it is very difficult to clarify them because forest is a part of society, where people are living. In reality, human need such as food, clothes, pharmaceutical material, building materials housing, house hold appliances... are coming from forests. All of these materials are the result of mutuality between two major factors labor and forest resources. Labor is the basic condition of social life, it can not be separated with the forest resources.

Base on the character and using purposes, forests are classified into three main types:

- *Production forest* is type of forest, which produce wood, forest products and NTFPs.
- *Protection forest* is type of forest which has major using purpose to improve nature, water resources conservation, soil conservation, erosion control, restrict natural calamity, climate control, biodiversity conservation, crop protection, traffic monument, an architectural are classified as: erosion control forest by the water, windbreak to protect agricultural cultivation *etc.*

- *Special - use forest*: The main using purpose of this forest is to protect forest ecosystem, gene, natural conservation, serving for scientific researches, historical vestige, culture, park, travel, famous landscape...

This classification is the important basic for quantitating value of those forests with the social life.

1.2. The role of forest with human

Comparing with the boreal forest, which has simple structure, low species composition, the structure of tropical forest is quite complex with high species diversity, number of each species and its appearance always change following the changes of climate, soil and specific topography, all lead to the change of forest value. Although, in any circumstance, tropical forests always contribute much to human and society. The role of forest is not only the capacity of supply wood, kind of materials, non-timber forest products but also ability on the soil erosion control and raising the soil fertile, as well as capacity of improving climate, restricting natural calamity, controlling cultivate water and national defending protection, landscape, entertainment, travel... and scientific research.

In the scope of this content, we will concentrate to analyze the major role of the ecosystem forest, basing on the direct and indirect effects on social life.

* *Timber supply*

Wood and its derives are very important in our life, they are main material for making houses, furniture, shipping, paper etc.

According to ITTO 2003, in 1960 total round wood harvest was 1.7 billion cubic meter, which was 2.3 in 1970 and reached to 3 billion in 2000. Together with industrialization and population blooming, demand on natural wood is increasing. Basing on estimate of scientists, in developed

countries, each person needs 0.5m³ annual and 75m³ for whole life and the forest area of 0.97ha. Meanwhile, in Vietnam wood harvest is restricted and it only gains 9.8m³ per person for whole life.

In 2004, total round wood market was 2.2 to 2,4 million m³. Of which 400,000 to 500,000 m³ were from natural forest, imported value of 300,000 to 400,000m³ and from plantation was 1.5 to 1.6 million m³, but total demand was 3.5 million m³.

In Central Highland region, this is a high value of natural wood. According to MARD (2005), total forest area are 3,140 million ha with standing value of 138 million m³ accounting for 36.3% of whole country (in which, rich forest of 41.2% and medium forest of 51.2%).

Also according to MARD, Kon Tum Province 469,000 ha of total 598,000 ha have many high valuable species such as *Dalbergia oliveri*, *Pterocarpus macrocarpus*, *Sindora tonkinensis*, *Podocarpus neriifolius*,... with standing value of 60 million m³. If applying guideline of MARD on timber harvest of production forests belong to rich and medium ones, total forest areas can be 58,800 ha with standing value of 100,000m³ and annual harvest of 63,000m³. With plantation mainly of pines and *Acacia*, annual harvest area can be 396 ha and standing value of 43,500 m³.

*** Non - Timber forest product supply**

NTFPs are deriving from others except wood, firstly they are medicinal herbs which can be used for treating many diseases, those herbs are such as *Euonymus chinensis*, *Panax pseudo-ginseng*, *Cinnamun*, *Illicium verum*, *Panax vietnamensis*, *Morinda officinalis*, *Homalomena occulta*, *Canarium album*, *Amomum xanthioides*,... There are many traditional medicines which are all from forest. In addition, pollen has high nutrition for human body, which contain 20-30% protein, 14 minerals and some vitamins *etc.*

NTFPs can be classified as following:

- + Farine supply: chestnut...
- + Protein supply: legume, mushroom, Jew's ear,...
- + Oil supply: palm butter for body shower, Olive oil with special nutrition value with the price of VND1,080/litre,...
- + Fat supply: walnut, cacao,...
- + Fiber supply: for making paper and cloth,...
- + Vitamins supply
- + Drink supply: tea, bitter tea, *sophora japonica*,...
- + Spices supply: many kinds of herbs,...
- + Food supply: forestry vegetables,...
- + Honey and cochineal,...
- + Rubber, pine resin, benzoin, paint,...

Especially, bamboo can be use for many different purposes : bamboo canes for construction, furniture ; bamboo leaves for cattle food, shoot for food *etc.*

In Vietnam, NTFPs plays an important role in sector of Agriculture and Rural Development in general and in forestry development in particular. According to MARD (2004) the value of NTFPs export gained 15-20% accounting 700-800 million \$ annual, creating 1,5 million labors. Household income from NTFPs accounted 20-25%. Basing on other investigation, it accounted 7% in some regions but in others it accounted highly 40-50%. Basing on provincial report, there are 30

provinces participating in planting and harvesting NTFPs with an area of 1.7 million ha accounting 14% total forestland area. 1.2 million ha of which is natural forest and the rest is plantation. Bamboo accounts 44% (700,000 ha), rattan for 21%, pinus merkusii for 14% and the rest for other species. There are some provinces with high area of NTFPs such as Thanh Hoa, Ha Tinh, Quang Binh, Nghe An, however there are only 6 province with area of higher than 100,000 ha each. In 5 ecological zones, NTFPs focuses mainly in Central north, North east, and Central Highland. According to Timber Import and Export Company, in 2000 export value gained 200 million \$.

In Kon Tum Province, there are many special NTFPs such as Panax vietnamensis, Pine resin, Dipterocarpus alatus, Shorea thorelii, Rattan,... in which Ngoc Linh Ginseng accounts for 73% of nationwide, which has the high value comparing to other regions of country.

The value of the non - timber forest product (NTFP) in comparison with the wood value in a tropical virgin forest is estimated by some nations as follow (table 1):

Table 1: Forest value of some nations in the world

Nations	Ecologic value (%)	Forestry value (%)		
		Total	Wood	NTFP
Japan	96	4	2.0	2.0
Germany	93	7	4.1	2.9
Russian	70	30	20.1	9.9
Finland	76	24	13.4	10.6
Vietnam	75	25	12.5	12.5
India	80	20	10.0	10.0
Laos	80	20	10.0	10.0
China	93	7	4,0	3.0

Source: Tran Thanh Binh (1999), Ngo Quang De (2001)

The above figure has shown that the value of NTFP held a relatively low rate in compared to other values of the forest but they play a significantly important role in increasing the income of the forest managers when the wood exploitation may be limited. Therefore, in many countries, NTFP conservation and development is considered as one of the key objectives in sustainable forest resource management.

** Roles on climate stabilization*

According to V.I Trankop (1988), the business operation of the human annually has been releasing into the atmosphere nearly 4 billion of polluted waste, including transport emission and some hydrocarbon substances, ozone... Additionally, carbon burning process (coal and wood burning, forest fire) has released dust, smoke and soot particles in to the air, with approximately 120 million ton of ash, 200-300 million ton of dust. Chemicals, pesticides, fertilizer and so on are also serious causes of air pollution.

Forest ecology system has been playing a significant role in living environment regulation and reducing pollution because it is a “*factory*” which produces oxygen and consumes carbon dioxide, and is considered as the lungs of the Earth. Forest can reduce disadvantageous impacts and ensure regulations and natural recovery process (including damaged impacts of human). If those impacts do not excess their stability limit and toxic substances have bad effects on one of living thing components of the ecology system, it would lead to the reciprocal force among components. These substances, in some extension, would cause damages for creatures in the ecology system. When

contaminations in the air fall on areas without floristic composition or ground, they would gather in the soil or be swept away along with eroded soil particles into rivers and springs and follow into ponds and lakes. When chemicals (pesticides) are absorbed by plants from the air and soil, they would be taken into deep ground layers through excreting of root system, which has bad effects on microorganism, subterranean animals. If they are in the areas which have high hydrophilic soil, these chemicals would be dissolved into the underground water and run into dwells of the households.

As a result, relatively self cleaning process of a component in the ecology system would cause other components polluted in both this ecology & others. That process would be continuous leading to entirely mineralisation (disintegration) of contamination (organic dirty substances) or they are separated completely in the ecology limit and its neighbor areas.

In general, bad impacts of contaminations would be non-stop, because open ecology systems always exchange energy and materials with other systems through the high-to-low movement (including on & under ground, solid, fluid and gas or mixture). Hence, contaminations can be absorbed into all components in the ecology system and located in some components. The atmosphere has ability of self - cleaning by means of wind; it removes contaminations out of the system, so this process depends on winds speed, direction, strength and distribution of contaminations in the atmosphere.

Contamination disintegration process consists of photochemical reactions under violet radiation rays. The more rays and higher temperature are, the quicker process of self - cleaning is.

The role of air sanitation and protection can be seen when the forest reduces the concentration of toxic gases: H_2S , NO_2 , NO , HF , CO , CO_2 , HCl , $NH_4...$, and prevents dust and increasing, dust accumulation and absorbs radio active substances and smelt. Additionally, phytoxit from plants can ionize Oxygen and kill bacteria. It can be said that: flora communities keep the role as "*a green filter*". S.V Belop (1981) said that 1 ha of forest can absorb 8 kg of H_2CO_3 within an hour (in acid gas form) in the city, equal to 8kg of CO_2 which 200 persons release into the air in a day. One ha of forest can absorb 220-280 kg of CO_2 and release 180-200 kg of O_2 with 24 g of O_2 /plant, while a person need nearly 500g of Oxygen, it means that 1 person needs 24 plants to live. In a year, 1 ha of chestnut forest can produce 14 ton of Oxygen but a small mount of PbO , CO (with 20mg of CO per m^3) can harm to human and the forest can remove them. PbO is harmful to nerve, especially to children, broad-leaf forest can store this in their leaves meanwhile for conifer forest this function is lower. All types of forest can filter or clean dust and poison smoke.

For example: a greened forest, artificial forest and urban plants can clean 70 - 80 ton of dust in a year and reduce by 30 - 40% of dust in the air. It is estimated that when $18m^3$ of air is cleaned, a pine forest can prevent 38 ton of dust, 1 ha of chestnut forest can prevent 68 ton of dust. It is because of larger leaf area (broad-leaf forests have an leaf area of 50-60 thousand m^2). Brush wood can absorb and prevent dust most (they live near the ground).

Many kind of species have ability of absorbing toxic gases such as C_{20} H_{12} , carbon, oil, etc, phenol compounds. Especially, some can absorb radio active substances such as mulberry, sambucus javanica... Forest can absorb radio active substances and reduces about 25% of radioactive quantity in the air. Broad forest can be imbibed radioactive substance better, more rapid coniferous forest.

The phytotoxin substance of forest plants, bacteria and fungi has effects greatly on the existing process of the ecosystem. Through researches show that one ha the broad - leaved forest can extract 2 - 3 kilograms of phytotoxin, the coniferous forest can extract 5 kilograms with high biological activity for one hectare conifer forest and the pine forest in growth season can give out slight oxidation-compound in the air from 370 to 420 kilograms. Almost phytotoxin substances affect selectively. The phytotoxin one of chestnut tree leaf can be able to exterminate dysentery-bacteria, pine phytotoxin sterilize tuberculosis bacteria and treat the heart disease...Generally, phytotoxin substances of forest plan may impact on sensation, have good effects for mental system of human, enhance important physiological activities of creature, improve air component...and good for health so it is called "Vitamin" of atmosphere. Experts calculated that only two kilograms phytotoxin ensure the fresh air of one average level city (about 1,000,000,000 people). But not anytime flora also produces phytotoxin to neutral or make good for people. In the summer, more respiration of flora increase more this substance does.

In the forest, there are many species like the pine, icterus, pedocarpus fleurgi, walnut, eucalyptus, camphor, cinnamon,... all these trees produce phytotoxin against pathogenic bacteria.

Many scientists verified that creation of Pine-walnut multi story mixture forest will make most advantageous condition of the air for people.

Biological activity of O₂ is very necessary for people and its effects belong to the ionization level, more advantageous this level is (increase slight ion and reduce heavy ion) more less polluted the air is. According to Belop and Alexcept, the air in the forests has ionization level higher two - three times than the one in the sea and yield, five – ten times than city. There are 3000 slight ion/cm³ in the forest, 1000 in the yield, 900 in the sea and 225-500 ion/cm³. The forests can form ion by producing chemical mixtures like etylen, butylen and freeing O₂ directly in the photosynthesis process.

Mostly kinds of coniferous species (pine, icterus, pedocarpus fleurgi, green cypress...) may improve the ion compound of the air, especially for the mixture of pine and broad-leave trees will create the air ionization higher (over 50%). In the summer in the broad-leaf forests, ionization volume is concentrated higher (45-90%) and pine forest higher two-three times greened ones of city,

Forest can be able to absorb from the air radioactivity agents, compositions of flora can reduce 25% the volume of radioactivity in the air, and in general, the auto-clean ability of radioactivity of large-leaf forest is faster than pointed-leaf one (Tarankop, 1989)

City's green cypress forest is the reliable mean fighting against noise. Effects of forest on the noise can happen directly/indirectly in which the direct effect is to absorb the sound wave and reduce the noise and the indirect one is revealed when the forest has advantageous impacts on the hearing and psychology of people. The anti-noise ability of forest depends on the thickness, leaf density, length of wooden tree and bush, presentation of regeneration tree and fresh rug, and weather conditions. The best anti-noise barricade hoop is the forest with high thickness, complicated form, and troublous compound for many bushes, regeneration tree and ground cover vegetation.

Nowadays, the air polluted status in Cities, towns has reached the alarm level. Rubbish like dust, toxic smooth and gas increasing many times than limited standard. Therefore, many people have been contracted diseases of eyes, nose, throat, lung, bronchi... even a lot of people died of pollution. So urban greening around the resident area, protecting and developing this forest type and

other forest types in our country is very urgent. In accordance with countries' experiences in the world, the minimum thickness of barricade forest hoops must achieve from 100m to 1500m and planted by native species with high environmental sanitation value.

** Soil conservation and nutrient improvement*

Forest cover likes a coat covering the soil surface, limiting the direct effect of raining on the land causing the soil erosion and washing away the surface layer with nutrient. Otherwise, the erosion and away washing limit is synonymous with reducing the alluvium volume extended with at electrical bowels so as to save a billion Vietnamese Dong invest for excavation, embankment, construction of dam.

Volume of dry sticks, fallen leaves, especially for the symbiosis mushroom (some species) plays a soil improvement of forest ecosystem and then enhancing productivity and quality of plants.

** Forests can play the roles of water conservation, natural disaster reduction*

With erosion limit role, after every raining, the water output sinks in soil making the soil under the forest shade increase, the evaporating water volume of surface reduce, the underground water increase. In a case study in Con Min City of China on water holding capacity of reservoir, Chinese scientists have identified that, in each hectare of forest in this area it can hold 4,653m³ equal 2,125.8 NDT.

Tay Nguyen forest maintaining water supply not only serving for Tay Nguyen but also for all coastal provinces in South central and East central through out the storing lake system and rivers including Se Sam river, Xe Re Poc river, Ba river, Dong Nai river...these rivers are watershed of 3-9 small rivers and streams. Due to characteristic of high mountain, heavy raining (over 90% rainfall on February to April) creates a value floristic composition

Other functions of forest

** Some of the other useful forest*

- *Forest can reduce temperature in urban areas*

Researches show that at 14:00 in summer days, during the temperature in the central area (less or no trees) of large urban with temperature 33,6°C, the temperature at Parks down to 31,5°C and the one at rural areas with crowded trees down to 28 - 29°C. This is also one of specific roles of parks. When the forest ecosystem makes a small scenery where temperature and moisture are always different with the non tree areas having various amplitudes of narrow, wet factors and slowly changing speed.

- *The mobile sand protection effect restrict of wind and storm for people.*

- *The wind protection of agriculture trees makes A main crop more abundant than usual*

- *The forest is a great tourist location for relaxing and rest.*

Beside dreamlike sea spa resorts, National parks, natural reserve, famous landscape sights always attract many tourists.

- *Role for the national defenses and security*

So that, the forest plays one very important role for social life, one fact going abreast the mankind society. The forest resource value is showed adequately on three sides: Economy, Society and Environment. However, besides the economic value easy to pre-estimate though wood and non wood products, the social and environmental values of the forest is unknown. This is also the matter

concerned by the forestry today. When reaching one enough answer with the general value of the forest resource will be pre-estimated, the rights and income of afforests will increase remarkably.

2. Part II: Depression of the forest resources - Real situation, reasons and consequences.

2.1. Real situation of the forest resource in our country nowadays

On the tropical temperature hoop and along a lot of latitudes, Vietnam has been assessed one of countries covered by forests highly with many valuable species of wood in the region. However, due to different reasons up to 1943 the covering level of forest downed to 14,0 million ha (achieving 43% area of territory) and continuing reducing with high speed in decades later. Before this situation, from 1993 Government has carried out big national programs in forestry as PAM, 327, 556 and the 5 million hectare reforestation program (661 program) with the target covering green uncultivated land areas, and bare hills and mountains, restoring poor natural forests. The result was that the covering level of forest increased up to 36.1% (table 02) in 2003 and 37.3% with 12.3 ha of forest in 2004. Today, whole the forestry is trying the best to directing the target raising the covering level of forest to 43% in 2010

Table 02. Changing area and forest cover in Vietnam (1943-2003)

Unit: 1,000 ha

	1943	1976	1980	1985	1990	1995	1999	2002	2003
Natural forest	14.00 0	11.07 7	10.48 6	9.308	8.430	8.252	9.444	9.865	10.00 4
Plantation	0	92	422	584	745	1.050	1.471	1.471	2.090
Total	14.00 0	11.16 1	10.90 8	9.892	9.175	9.302	10.91 5	10,91 5	12.09 4
Forest cover (%)	43,0	33,8	32,1	30,0	27,2	28,1	33,2		36,1

Based on the evaluation of Rural development and Agriculture Ministry, though the covering level increased, but the qualify is not improved. The average reserve of natural forests reached only 76.3m³/ha with over 65% area is the poor forest or restoring), while rich and medium forests reached 3,4% (in 2000) and 4,6% (in 2004) of total forest area. Almost it seems that there are no forests at low areas with the unexploited biological diversification. A chance to renew all because rich forest areas were fragments. The bare forest output reaches only 28,8m³/ha, the valuable wood become less more and more and the qualify of wood has not replaced natural one.

2.2. Reasons for degradation

* Land use purpose conversion

Land conversing is expanding the agricultural, productive, and cultivated land by encroaching into forest which is a very important reason declining the forest resource. For some coast areas, deforesting for shrimp is a typical example of this change.

Tay Nguyen area has the bazan one getting 24,54% and 42,28% of red-yellow soil of total natural land area of region. Therefore, scientists showed that Tay Nguyen is good for developing the industrial crops such as coffee, rubber, tea... and some other high valuable fruit-trees. Tay Nguyen, so can get favorable policies and measures in order to encourage.

Expansion of Agricultural land area. From 1998, coffee land passed its plan target 93.906 ha. Dak Lak is the most developing coffee area over 240.000 ha. Agricultural land area increases quickly from 548.100 ha (1995) to 924.800 ha (1998), up to 497.700 ha and the average increase 131.600 ha annual. Also other plant areas increase remarkably. This is the main reason causing the forest area decreasing quickly.

** Over harvesting*

Currently, exploiting over limited illegal forest products is a concerned matter, also a major direct reason which declined both quantities and quality.

Forest harvesting is the action caused by human under various forms, aims and effective levels. Based on the exploiting purpose, it is divided into three basic actions: exploiting of wood, firewood, and non-wood

- Illegal logging

Harvesting wood is a concentrative exploiting action on valuable wood type I (about forty species), Stable wood type II (about twenty species) and many types belonging to types from III - V. The statistic result in the period from 1986 to 1991 showed that National enterprises exploited averagely three to exploited averagely 3.5 million m³ of wood each year (80,000 ha forest areas). Illegal logging happened in any forest even in sanctuaries which quickly reduced forest areas and forest quality.

Wood is used in construction, furniture or export. Wood products are always satisfied by consumers so wood export prices are moderate at high level. For example, *Pterocarpus macrocapus* is sold to China marketers with high prices up to 600 million VND per m³. Recently, *Dalbergia tonkinensis* wood is also sold with millions per kilogram.

Because of increasing wood consumption demands, big benefits when doing business wood make people find anyway to exploit precious wood in order to sell in the market. Forest areas is rapidly decreasing. Scientists said that with current exploitation speed, Amazon tropical forest/the largest jungle in the world will be completely destroyed within 30 years and human beings will get unexpected consequences due to global weather changes.

In our country, national wood harvesting policy for economic development reduces remarkably forest areas. The great forests which are quite and unexploited changes national scale exploitation works. Furthermore, deforesters' illegal activities is more and more exploiting in any forest everyday. In Tay Nguyen, annual target which allows to exploit 200,000-300,000 m³ in jungles and illegal logging activities in 4 provinces with big volume are the main reason for regional forest areas reduction .

- Firewood collection

Besides logging precious wood used in construction, making furniture and export, there are many other kinds of wood logged to make firewood.

A national statistic showed that 90% of energy used in household come from flora. Annually, about 21 million tones of wood are exploited to meet fuel demands which are much bigger than annual wood export.

Being a developing country, therefore, human face many difficulties, poor families are lack of land for production, wood exploiting to sell is their major income. Besides this, a greater number of

people living in highland and rural areas have got a habit to use wood as a fuel. It directly and indirectly increases illegal activities.

- Non-timber forest product harvest

Non-timber forest products (NTFPs) are products having non-wood original but exploited from the forest. Beside exploiting precious and rare wood and firewood, developing of non-wood is also destroying forest. This action can be regarded as an effect declining the forest resource fastest.

Because of various kinds of non-wood forest products, all of them can be used in the family, selling and export. Therefore, exploiting conditions, illegal business and fauna- flora export are strongly happening

In our country, export activities of fauna- flora business even protected species are increasing. Due to lack of reasonable management, strict control in exploiting forest creatures, so in some areas, some animals such as rhinoceros, tiger, elephant, monkey,... some kind of species as fokienia, aquilaria, ...are becoming more and more rare. Other animals like pangolin, tortoises, snake, trionychid turtle, iguana.... are much exporting to Hong Kong, Thailand especially China. In the recent time, it has been a great danger for forest losses. High export value of these above species with the lack of awareness and greed enhance people to illegal actions everywhere.

Because of poverty, people rush into the forest to exploit sources except for wood. Now, people in mountainous areas, Vinh Thanh district (Binh Dinh province), are rushing into forest to seek for gold. These illegal activities have damaged watershed, and water reservoirs are in the risk of removing. For economic purpose, people deforest even forests which bring major income to them are in danger of serious deforestation yearly. Luong have been chopped down for trading, this makes its reserves and quality become worse and its sprout productivity reduce. Over exploitation for trading purposes in neighbor provinces and supplying materials to chopstick, sleeping mat factory and scaffolding in construction is leading to forest degradation. In addition, there are many kinds of exploited activities of other animals and plants for different purposes which have bad effect on environment. These illegal activities have happened continuously and faster more than forest recovery process could do, which makes forests degraded. It is necessary to carry out active methods to prevent and reduce these illegal activities.

** Forest fire:*

Forest fire is one of important causes which lead to natural resource degradation process very quickly. It has bad effects on living of retunes on a wide area and results in consequences such as: erosion, flood, droughts, which effects on human life. Nowadays, there are many causes of forest fire, for example: Elnino, human activities such as: burning fire to get honey, bear gall, burning incense to find revoluntary martyr tombs in the war, burning off the land for cultivation of ethnical people.

According to Department of protection forest, Ministry of Agriculture and Rural development, 56% of 9 million ha of current forest is in danger of firing in the dry season. These have been about 20.000 - 100.000 ha annually fired, particularly, in highland & central region. Forest fire has been happening regularly in many areas in the dry season. Most of the fired forests have been in sensitive areas such as: watershed forests, flooded forests, and cajuput areas used for preventing sand, flood, erosion, drought and degradation.

In Tay Nguyen, custom of burning the land for cultivation has been happening. It is the major cause of many forest fire cases. The fire and flammable material resource under the trees axial quickly expand in a wide area and it's difficult to get the fire under control and as a result, consequences are extremely serious. The recovery and reproduction under such condition may be very slow, therefore forest resources have become exhausted. In order to control degradation of forest resources area, forest management sector must pay attention and local people must be aware of protection of forest resources.

** Population pressure*

The quick population increase is one of major causes of biodiversity and environment degradation. Increase in population means increase in living needs and other necessary demand, especially soil resources for agriculture. High population density has led to deforestation and serious degradation of ecology system and natural resources. In the period without human beings, forest covered the surface of the Earth. In human history at Iron Age, human lived upon nature, they earned by picking and hunting in the forest. These activities had little bad effects on the environment.

When human began breeding and planting, there were harmful impacts on the forest but not much.

Since 3rd century BC, forest has been exploited significantly. The forest exploitation has been stronger and stronger when there have been increased in population, agriculture expand and appeared metallurgy. People have burned forest for planting and wood used for material & shipbuilding ... and forest areas have been becoming narrower and narrower.

Along with industrial development, standard of life has been improved and demand has also increased. Besides, people have gradually gathered in urban for trading easily and this has caused inequality between the country & city. People have rushed into cities for earning leading to urbanization; therefore economic development has to be more strongly developed in order to meet the demand of labors in cities, living demands has been increasing in various fields also leading to establishment of new factories, companies. However, urban areas gain a small proportion of population; all above activities including building cement, brick and sugarcane processing factories and so on are not able to carry out in urban because input materials are not meet the requirement of transportation, pollution. Consequently, they move far from urban to establish manufactured works in forests...

In Tay Nguyen, in 1995, the population reached approximately 3,1 million, in 1998 over 3.8 million, annually population increases more than 230, 000 people. In Dac lac province only, from 350,000 in 1995 increased 1,776,331 people in 1999, increasing by 48% (Tran An Phong & Cong su, 2000). In Kon Tum province, though the war affected the population growth there was no decrease in population. According to the statistics of Saigon Government under Ngo Dinh Diem's regime, in 1961 the population of Kon Tum province was estimated to be 95,710 people. But in 1970 its population increased by 106,154 people.

After 1975, the country was unified, thanks to the socio-economic development of its province, people's lives have changed, so the population has also increased at a warning speed. In 1975 the population of Kom Tum's province had 290,001 people; increasing threefold in

comparison with the estimation of Saigon government's population in 1961 (95,710 people), the population of the province reached 357,400 people.

The population increases rapidly there is also an increase in the need of employment, and housing besides the needs of entertainment, eating and drinking and traveling of man also increase. When people's lives have been improved they want to eat good, exotic things, use original products deriving from nature, want to have sources of building materials such as products from the precious and rare wood like *Pterocarpus macrocarpus*, *sindora siamensis*, *Hopea odorata*. Where there is a demand there is a supply, and man go into the forest seeking and hunting valuable and precious animals, exploiting with a purpose of selling what the market needs to get more incomes.

The forest resources are limited but man's need is increasing and in a short time, the valuable and precious animals and plants have been exhaustedly exploited, even they are wiped –out so the number and species of creature have decreased. It is possibly said that the pressure of population strongly affects the degradation of the resources of the forest; man must have a reasonable planning of exploitation to restrict the uncontrolled exploitation of the forest.

** Poverty*

Poverty in the rural areas is a major challenge for the tropical countries. There is a paradox, in many tropical countries, a large number of people in the rural areas have a great proportion of forest land. However, the decline of the forest has affected the lives of millions of people in these countries. Poverty and the disappearing of the forest in the developing countries have interwoven closely. As many people depend on the resources of the forest, mainly on wood, to maintain their lives. The disappearance of the forest has increasingly caused more poverty. The scarcer the forest products are the more precious they become.

The environmental degradation has many reasons in which there is partly poverty. Poverty always goes with the scarcity of resources to some extent that the natural resources have been exploited excessively to increase the scarcity and degradation. The approximate 80% of population live in the countryside; Vietnam is an agricultural country depending on the natural resources. There is a considerable shortage of farming land and many people have to live on the forest, their living standard is very low with approximately 50% of the families are poor. Due to lack of fields, and invested capital the poor have to emigrate to live in the unfavorably conditioned areas that need little investment so that they have to exploit land and natural resources to maintain their lives. This is why these resources have been degraded rapidly.

However, it approves that poverty is not necessarily synonymous with the deforestation such as activities of wood-exploitation, firewood, and specialties of forest.... to sell them. But because of poverty, shortage of productive land, lack of investment, they have to destroy to support themselves and their families. The amount of firewood and root that they exploited were only sold out with a price of 50,000 VND but the money could feed their family for a week. If daily income per person is lower than 15,000 is considered to be a poor household. So those families have harder lives. Their exploitation partly meets the consuming demand of the rich, and serves the business purpose of those who have money. Even though their exploitation is small, not massive it has been repeated for a long while, so it is very difficult to control and cause the exhaustion of resources of the forest. When the number of limited forestation, domestic animals, and the forest area is reduced the phenomenon of drought and flood appears, it is very unlikely to prevent the erosion. When the

natural calamity strikes the poor often bears much heavier loss as they live next to the forest. They are naturally poor now they become poorer. Poverty always surrounds their lives, they appear very difficult to get out of the live of the deforestation for wood, firewood, specialties of the forest to sell for living.

For the purpose of having income and supporting their families the poor has steadily degraded natural resources. So there should be policies to support and create employment for the poor households such as sideline-developing programs... to decrease the exploitation of the forest.

**Consequences of the chemical warfare*

The chemical warfare was those of dioxin – that the American troops used and scattered on Vietnam during the wars.

In the second Indochina war, the American troops launched a chemical war with the biggest size of all ages of the history. In this war, the American troops scattered about over 80 million liters of weed-clearing substance upon an area of 24,67% of the total area of Vietnam, most of which was Agent Orange substance. It contains dioxin. The concentration of these substance that was scattered was 20 - 40 higher than that of agriculture, and the weed-clearing substances are often dissolved after a month or less than a year, the dioxin in the Agent Orange is sustainable, with a time of half-dissolution is estimated in 15- 20 years or longer. With a great amount of the scattered toxic was repeated during a long time with a high concentration, they were absorbed and steadily dissolved in the soil. It not only ruined plants but also polluted the environment in a long time and upset the natural ecosystem.

The immediate and long term consequence of dioxin to natural resources and environment is clear. In the affected process hundreds of trees lost leaves, most importantly, the huge trees belong to those of the top floor and of the prioritized ecosystem of Dipterocarpaceae, Fabaceae. Many previous trees such as *Pterocarpus macrocarpus*, *Sindora siamensis*, *Hopea odorata*... and some of Dipterocarpaceae belong to the high family have died, that has caused the scarcity of seeds of some precious plants. The shade of the forest has been broken down, the environment of the forest has changed rapidly, the plants of the newly planted forest such as bamboos, neohouzeauas, species of plants like sunlight to grow quickly with less value of economics, and they appear and invade the indigenous plants. Many forest have been heavily destroyed due to size of large destruction repeated and lasted during many years, with other activities of wars...

Consequently, forest has died, species of weeds such as *Pennisetum polystachyon*, Imperate cylindrical, invasion of reeds, and so far forest has not yet been restored.

Besides, the chemical substance that were scattered on the forest has caused great loss for other natural resources except for wood that is not counted such as resin, medicinal plants, rattans, and other forest animals. And the consequence of the chemical war of the America has caused other damages to the environment, and the ecologic diversity, causing the massive loss of leaves to stagnate nutrition, and there are 10 -25 million bomb craters accounting for 1% area of Vietnam's forest to cause the façade soil upset and increasing the eroding process.

However, in these recent years, more care of the forest trees have been taken, more investment and development have been made in the forest but the quality and quantity have not been high. Based on the above analyses we realize that the consequences of the chemical war has decreased the forest area, causing natural resources of Vietnam's forest heavy losses. Although 30

years of war have passed that wound has not been healed, the forest area has had a lot of changes in the decreasing trends due to many other reasons such as the chemical war of the America has left a devastating consequence for the natural resources of Vietnam's forest.

** Custom of shifting cultivation of wandering hill-tribes*

Migration custom is a very old agricultural productive custom of many under-populated tribes in Vietnam that appears in the upland and mountainous areas, a place where they want to settle their lives and productive activities in a scope of fixed territory. In the dry season, and normally at the end of the winter (North of Vietnam), people often go further into the forest to find a suitable land of the forest, burn an area large enough (often not to control the purpose of the burner as the fire of the forest is affected by the wind and moisture, and temperature of the area of that forest). At the beginning of the rainy season, people go to sow the seed (mainly seed of corn), or grow the cassavas, making use of the humidity of rain, the seeds will sprout, plants grow very well due to the soil of high nutrition under the sunshade of the forest and thanks to charcoal and ash of the deforestation. People who cultivate here have little impact on plants and trees, and especially leave everything to the nature and when the crop reaps they come to harvest it. Normally, after 3 – 4 harvests, due to the eroding water, on the other hand, soil is not supplemented with nutrition, crop plants under-develop. At this time people leave the old cultivated land and look for new area of the forest and burn the forest for cultivation. Their lives attach with cultivating land so all their families and villages emigrate to clear up land for cultivation. This is the custom of shifting cultivation of wandering hill-tribes. It is an old and backward custom with low production rate; the lives of people are unstable, causing the erosion of the soil and loss of the forest. As this custom appears in the mountain area so it is understandable that they do not have land to cultivate and their level of understanding is very limited. As they lead daily lives they just focus on short term production period to meet their current demands, they leave all to the nature and do not yet have investment, have little knowledge of cultivating techniques to have higher productivity and do not realize the consequence of their mountain filed burning and land-clearing up for cultivation can destroy a large area of the forest. When they live in the mountainous area they cultivate and settle their lives there but the mountainous area is complex, difficult to cultivate on this land so they do not consider their productive activities. On the other hand, with the increase in the population the migration custom has become a serious reason for the disappearance of the forest, land erosion, and the result is that there appears an area of the eroded land and hill like that of today.

The increase in the population is synonymous with enlarging production to provide more food for the needs of hum beings. It is obvious that mountainous dwellers cannot extend the area of the farming land down to the plain delta because of their habit of life, habit of production, additionally, the area of the plain delta only account for a small part that is not enough for them to cultivate. So they have to go further into the forest to extend their productive activities and they continue to clear up land for cultivation. The forest area is continuously burnt but there is neither investment nor reproduction. Forest is certainly reduced with time.

In Tay Nguyen, the population increases rapidly, mainly in demography due to the migration based on the planning of the new economic zone development and free emigration. For Tay Nguyen, people migrate (planning and free) created new economic zones, actually a challenge for the protection of the diversity of the ecosystem and natural resources of creature in the area. The

exploitation of forest land for cultivation and firewood, exploitation of forest products has changed many large areas of the forest in Dac Min, Dac Lac with 2,904,8 ha of the forest has been destroyed, the area of the deforestation by emigrants: 2,034,2 ha accounting for 70%, of which 870,6 ha accounting for 30% by native people destroyed. On the other hand, the emigrants (uncontrolled) have pushed some of the native people further into the forest due to the long-standing farming land purchase.

On a national wide scale, since 1960 the government has encouraged about one million people from the plain delta to immigrate to the upland. This campaign has changed structure of the population and their customs in the high lands. Since 1990, there were many waves of immigration from the Northern provinces to North and Middle and Southeast areas. These emigrants have destroyed the forest to grow rice, coffee, and other industrial plants. Many people often think that the upland is still underpopulated, but nowadays, the average density of population is 75 people per km², whereas the area of the farming land is naturally narrow and constantly depredated.

Besides the emigration, the migration custom is a very old productive custom of many under-developed tribes in Vietnam. There are about 9 million people belonging to 50 under-populated tribes in Vietnam, who have a migration custom. Due to the increase in the population in which the migration custom has become an important reason for the disappearance of the forest, the land erosion, and the result is that there appears an area of the eroded land and hill like that of today.

2.2. Consequences of the forest resources degradation

** To community's life*

Forest is a source of life, both mental and physical support for the community. Once forest disappears or degrades the community living adjacent to the forest has the greatest impact.

According to the research of Ha Van Chau (2003), 35, 2% of households living in the Mountain Huong Khe, Ha Tinh are poor. They returned when the forest area was given them they cannot live on it to support their family.

Forest degrades, man's income is affected many households have left the forest to seek employment in the urban area in the hope that they may make profits to support their families.

** To biodiversity*

Approximately 700 species are threatened to become extinct in some countries, of which 300 species have been threatened to become extinct in the global scale. 49 species threatened to be extinct at the global level in Vietnam, they belong to the very critical species. It means they have to face with the high risk of extinction in the nature in the very near future. The profits of seafood has been decreasing, especially, for the aquatic species in the main land and offshore threatening the existence of some species. If with the current trends the first century of the 21st century we have to witness a wave of the extinction of some animals, wild plants of Vietnam at a level ever seen in the history, following some harmful effect of the local communities.

The consumption of wild animals, in particular the habit of eating and drinking in Vietnam has cause a great damage. Hunting is one of the greatest threats for some natural reserves and considered as one of the greatest to the ecologic diversity in South East Asia. In 2002, the domestic and inter-border wild animal purchase in Vietnam has increased by 3,050 tons, valued US\$66 million. The illegal wood exploitation took place at some tightly uncontrolled areas. From 0,5 to 2

million m³ of wood has been illegally exploited annually from all kinds of the forest. The exploitation rate has gone beyond the sustainable level by 70%.

The unnoticed activities of the infrastructure construction for the ecosystem has led to the loss of the ecologic diversity and now exposed some negative effects to the economics and the economy in general, but there have been not yet sufficient evaluations. The ecosystem of the forest has disappeared due to the invasion of land clearing for cultivation and migration custom. The under water areas of land such as grassland that is submerged under the water is threatened to be changed into the rice fields. The increase in global business, tourism and cross-border goods transport as well as infrastructure development, such as communication route has created conditions for exotic products to invade.

In Tay Nguyen, according to the assessment of the Institute of the ecology and natural resources of creature in 2000, in the strategy for the protection of the ecologic diversity in Thai Nguyen, before 1990 upwards, the forest production in Tay Nguyen was mainly that of the wood exploitation. This has decreased natural resources of the forest both the area and the quality of the forest. Since 1990 forwards, the forest production has changed its direction from the traditional forest into social forest exploitation: forestation, repair and protect the forest left, exploit forest with limit and a plan. However, during the first years of plan implementation, the forest area has been evolving.

The activities of seafood exploitation and animal-hunting have decreased the number of the rare and precious animals. The really extinct plants, some species left in Tay Nguyen such as: water pine flatted leave- pine, Da Lat pine, aloe wood, pearl-ginseng, green cypress-tree...many precious woods such as rosewood, barian kingwood, red wood, vulture.... have their allocated areas reduced and have been facing with the serious decrease of the number due to the illegal exploitation. The precious animals such as elephants, baygals, bulls and rhinos have decreased seriously, due to the decrease of their living places and division, and to the illegal hunting. Other species such as deer, and peacock, and varan.... No specific numbers are counted but they do not avoid becoming exhausted.

It can be judged that since 1995 until now all the species of economic valued animals have decreased their quantities over 50%, one of the reasons for this decrease is the effect of the planning of the economic development in the market-oriented structure.

** To the environment*

Loss of the forest and degradation of the forest are the main reasons for the expansion of the desert and land erosion, causing a series of negative effects and challenges to the socio-economic and environmental development and flooding and serious droughts, difficulties in providing seafood, decrease the area of the farming land, more poverty and unemployment in rural areas.

In Tay Nguyen, due to the effect of the loss of forest, many previous huge and rich lands have now been eroded, become impoverished to decrease productivity and production of the traditional trees of the local such as tea, coffee, and mulberry. Drought has long lasted in many locations in the dry season like Dac Lac, Lam Dong, Gia Lai, Kon Tum, Southern and Middle provinces have caused the scarcity of the drinking water for man and animals, the number of animals have decreased, in particular, precious animals as tiger, elephant, rhinoceros, python, Some of birds as peafowl, grey peacock pheasant,....

3. Part III: Some recommendations for sustainable management and utilization of forest resources

In the past, especially from 2000 to 2005, along with the mechanisms of Government, Highland provinces' authorities have issued suitable mechanisms of province levels, which contribute to improve forest protection, management and development, i.e. 1. Making forest fire fighting plans, providing technical equipments, manpower improvement, profession enhancement *etc.* Those improvements initially resulted in reducing forest destroy for shifting cultivation, fuel and wood. 2. Focusing on benefit of local people who are living in or near forest, especially ethnic minorities. 3. Forest pest and disease controls have been considered by local authorities, many stockholders and forest protection departments.

Regarding to forest development, 5 million hectare reforestation program under Decision no. 661 by the Prime Minister has changed the awareness of local authorities and brought about initial encouraging results. However, forest protection and development in highland provinces remain weak. Forest destroy is still continuing and even more seriously for example forest destroy for shifting cultivation and NTFP harvesting is still remaining in high risk. The main reasons are low intellectual standard of local people and low awareness on obligation in forest protection and management and in the other hand, because of livelihood difficulties of local people, whose is mainly based on forest for generating income.

In terms of the state management, policies on forest issued by the state in general and local authorities in particular haven't been consistent. Forest and forestland allocation have been slowly carried out. Though local authorities have innovated management mechanism and policy and reorganized forest enterprises, they have not collaborated responsibilities and interests of local people and encouraged stakeholders in forest development, management and protection. Inhabitants are in fact employed to do a specific task in a specific time, so they are not responsible for protecting forest. Those who are allocated forestland for management and protection take care mainly of exploiting forest products and cropping short-term plants for quick profit without paying attention to planting and protecting the forest. Migrants and nomadic farmers' deforestation for crops and industrial plants and forestland transfer have been continued. The demand for firewood, housing, household appliances and export has increased beyond the supply. The fact that the price of timber especially precious one has surged amid reduced local supply has imposed a pressure on forest resources. Violation related to forest protection and plantation such as illegal forest product exploitation, forest destruction for crops and illegal forestland transfer has not been ceased due to loose control and soft measures of settlement. Forestland allocation to local farmers has not been implemented completely and effectively.

3.1. Measurements of forest resources management

Vietnamese Government together with partners has worked on emergency conservation of forest. Great efforts of the Government, sponsors and international conservation organizations have resulted in fundamental achievements. Legal framework and institution has been established solidly. Since late 1980s, Vietnam has made commitments to develop laws to protect biodiversity. A national action plan of biodiversity (BAP) was approved in 1995, which guides and concentrates

conservation efforts. A new BAP until 2015 and orienting 2020 has been under development by the Ministry of Natural resources and Environment and was expected to issue in early 2006.

*** Policy-related measurements**

To cope with degraded forest resources, the Government's management policy keeps a decisive role. However, its success depends on the awareness of people who benefit from natural resources.

The government has regarded forest development in highland areas as a national urgent and long-term task in order to increase forest cover and protect water and environment.

Policy-related measurements need to be implemented as follows:

+ *Giving more right for community:*

The management imposed from the high levels to lower levels has proved ineffective. Thus, the government should hand over authority to local governments to decide how to use, manage and develop their resources. This would enhance the local officials' capacity to deal with practical problems in terms of culture, natural and socio-economic conditions. Similarly, the right to decide how to use main resources should be given to the officials who are directly in charge.

+ *Management of forest resource based on participation*

Involving local people in forest resources management is likely a proper measure to obtain a sustainable living and poverty alleviation in rural areas, which creates a more equal benefit sharing, compared with centralization management. The local involvement demonstrates the community's ownership of forest resources. Allocated forestland and crops grown on it have provided firewood, animal food and non-timber forest products; steadily increased food supply; prevented soil degradation and created jobs. All of these, in turn, contribute to poverty reduction.

The community's participation in forest resources management is vital to sustainable natural resources management and development. How much a person takes part in the activity depends on his/her influence on the community. However, the whole community has the right to participate in any decisions related to land allocation and forest management; subsidy to community forestry as a part of income extracted from timber exploitation; additive preferential support to the community; non-timber products' market establishment and expansion and support to village organizations.

Once the community's interest is claimed clearly, its ownership assurance is essential to encourage sustainable utilization of tropical forests. Applying bonus policy and safety insurance for the community dependent on forest is also a measure to gradually reduce unsustainable practices. A well-organized forestland allocation system in combination with the state regulations on bonus conservation is central to sustainable forest exploitation.

Forest resources protection is the responsibility of not only the forestry state organizations but also ethnic groups living in the areas with forest resources. Chairmen of provinces' people committees and authorities at all levels should be blamed if there are any violations of Law on forest protection and development. Besides, the protective role of forestland owners needs to be strengthened for quick response in every situation. Forest rangers should be considered a major force in forest protection and management.

With regards to social activities, it is necessary to propaganda widely and encourage enhancement of forest protection by local farmers in their living areas.

Community-based natural resources management has proved successfully to improve the effect of forest resources protections bringing a more secured life and equality among the community members to take part in effectively managing and benefit from local resources. Therefore, this model should be applied across Vietnam, especially in the context of Land Law 2003 having acknowledged the community as a nature resources management unit and initial success of community-based management in many localities.

+ *Strengthening effect of laws and decrees issued*

Laws and regulations related to forest resources having been stipulated so far includes Law on forest protection and development (1991), Law on environment protection and other regulations by the government, ministries and people's committees at all levels to conserve forest resources and wild animals. Nevertheless, they have not been completely put into practice due to loose cooperation between relevant agencies and local people. As a result, it is necessary to enhance capacities in terms of human and equipment for all level agencies that are in charge of forest protection and biodiversity development.

Furthermore, it is recommended that investment projects be planned to improve living standard of the community. Food supply is surplus nationwide, but the export faces difficulties and bears big losses. Should surplus rice be offered to upland people who concentrate on planting and protecting forest in order that highland areas would be a main material provider for forest product processing by 2010 while retaining biodiversity?

Recently, Prime Minister has enacted a Decision on fixed cultivation and resettlement for ethnic minority groups nationwide in the period 2007-2010 in order to recover forest area. Targets are 70 percent of settlement areas having necessary infrastructure including roads, hydro power stations, schools, kindergartens and community houses; 100 percent of ethnic minority settled down having access to land for housing and cultivation, water; and households in hunger disappear and poverty rate cut down to 2-3 percent annually.

+ *Policies on Hunger alleviation and poverty reduction leads to improve local household income*

Food shortage and low income push people to illegally harvest forest resources and raise crops in an unsustainable way. Hence, it is not recommended that a focus be put on forest resources, but improving the living standard of inhabitants living close to forests. An area should be specified for raising animal as well as rotating crops. Transparent regulations indicating which resources be exploited by local inhabitants in which time. These would help people particularly the poor to produce more food and generate income. It is also necessary to decrease the number of organizations and agencies involved in development projects invested by the state so as to avoid slowness to deploy projects and financial losses.

Moreover, with the aim of poverty reduction for farmers, especially ethnic minorities, it is urgent to realize support plans via social banks and non-interest or low-interest loans. Planting and raising techniques of profitable products should be transferred to local people so that they would give up destroying land and environment and participate in forest conservation and development.

+ *Rechecking the planning of 3 forest types:* special-use forest, protection forest and production forest according to criteria for each type issued by Ministry of Agricultural and rural development aimed at adjusting and specifying an obvious border line on the map and in reality and preventing fragmentation and overlapping in forest planning and management.

In terms of inspection and supervision of forest protection and development, it is essential to revamp overall land and forest to make clear which forest area is transferred to local people to hand over authority of land allocation to local governments in a soonest time. It is dispensable not to let forests owned by no one and occupied or illegally harvested.

+ *Planning settlement of villages in mountainous areas*

Encourage people from other localities to mountainous areas to earn their living while helping ethnic minorities to settle down and stop firing and destroying forests. Forest protection needs to be considered in the view of sustainable development. It means preserving existed forest patches at the same time with restoring the degraded in both natural and artificial ways.

3.2. Technical recommendations

+ *Strengthening rehabilitation, restoration, reforestation, enrichment planting and af-forestation operations*

Based on the existing land area in Kontum Province, the province would make enrichment planting and protection of 20,700ha regenerated natural forests and planting about 30,000 ha protection, special used and production forests.

To fulfill the above task, identifying suitable crops for each ecological area with different economic purposes is essential to forest plantation and restoration. Choosing a crop should consider between native plants that have been grown for thousand years and imported ones that have been tested.

+ *Agro-forestry*

Shifting forestland to cultivated land is the main reason of forest resources loss and degradation in developing countries. Demand for food continuously rises due to booming population and raising personal income. The committee believes that agro-forestry is an important solution to the headache problem. As public-owned resources are lost or degraded, farmers are obliged to shift cultivation method of valuable products on their own land by planting trees along with crops. Agro-forestry brings about a considerable potential as a common practice of land management to maintain land fertility and productivity in tropical regions.

+ *Selection of suitable solution for each type of forests*

It is the fact that the possibility of forest restoration upon interference depends on vegetation conditions, climate - hydrology and geography conditions. As a result, in order to successfully recover and develop forests, a set issue is to identify a subject for technical measures with certain criteria. The criteria must be based on quantitative research on relations between forest restoration speed and initial conditions, particularly geography, climate and vegetation. The criterion of the subject is the limits of initial conditions which allow forest restoration in a certain time with a given technical method system. The criteria must be obvious and described by simple norms that are easy to recognized and appropriate to inhabitants' knowledge. In practice, criteria of the subject have not met the above requirement, which makes it difficult to put them into practice. In some cases, ruining old flora makes af-forestation, though the possibility of its restoration is high and environmental conditions are favorable for forestation in a short time. In other cases, due to indigenous knowledge, segmentation and protection is made to poor forests or forestland whose restoration potential fails to lead to forestation in a specific time. The above fact is not only a major factor causing economic

losses, but also worsening a contradiction between inhabitants' difficult life and forest's existence and between sustainable development and degradation of forest resources and environment.

Thus, it is indispensable to classify vegetation into different groups based on soil, geographical and vegetation conditions as criteria of selecting a proper interference method to shorten restoration time and increase forest productivity.

3.3. Recommendation for sustainable utilization of forest resources

Sustainable forest management requires more social solutions than technical solution. Such problems are concerned with human such as living conditions improvement, social equality, poverty reduction and relation of power and gender roles. For an overview of the above human issues, a widespread participation of people classes is crucial for planning and decision-making of forest management.

At a national scale, sustainable and effective development and exploitation would satisfy wood demand for domestic consumption and export, contributing to national economic growth and social stability especially in mountainous areas. Meanwhile, it helps guaranteeing protective role, biodiversity conservation and providing environmental services.

Improper exploitation of forest resources for living demand must be prohibited. Forest resources utilization in upland areas has an important effect on forest ecological sustainability. It is necessary to supervise strictly forest exploitation as well as ranger stations' activities. Qualified and responsible leading rangers should be assigned to stop forest crimes.

Reasonable harvesting of forest resources should be based on the following criteria:

- Proper forest regulation
- Stable criteria of forest structure
- Light impact by exploitation

3.4. Social measurements for sustainable exploitation and management of forest resources

+ Promote tree-planting day among people on important occasions.

Regularly propagate people following the Slogan of Ho Chu Tich on tree planting in spring season. Organizing planting tree on world environmental day, Vietnam forestry day *etc.*

+ Speed up forest plantation and restoration program at national scale

In order to restore forest, the Government has promulgated various policies to further afforestation with a view of forest development and maintenance of forest functions such as protection and economic benefit provision. The state should support farmers to take care of and protect forest trees while harvest has not come yet. It is crucial to propagate and educate people about ecological benefits of forest. It's best to make use of the role of village patriarchs & leaders, family leaders and prestigious people together with local authorities to conserve forests. For production forest, forest products' consumption should be guided and supported by the government.

In many regions ranging from northern mountainous to central coastal, upland provinces have many examples of getting rich by forest plantation combined in environmental and economical targets. Cinnamon, rubber forests, paper material forest and tea hills and orchards owned by mountainous families have raised their income and contributed to poverty alleviation.

A measure to put forward contribution of forest-related jobs and poverty reduction is to develop technology and improve forest restoration skills. To realize that, it is necessary to train urgently a contingent in charge of agro-forestry encouragement and install a system that provides technical services to mountainous ethnic groups.

Promotion of forest-related jobs' contribution to poverty reduction is greatly significant in terms of science and reality. On one side, it helps to protect and develop forest resources and enrich forest biodiversity. On the other side, it demonstrates the state policy to comprehensively develop all ethnic groups, especially the poor and under-developed in the mountainous areas.

+ Attract the interest of foreign organizations and private investors in af-forestation and environment protection

To obtain the above target it is essential to create a transparent and stable investment environment. Policies to ensure land use rights and long-term forest ownership should be issued. Exact information about investment opportunities and streamlining of enterprise establishment procedures should be procured. In addition, to push deployment of af-forestation and reaf-forestation under clean development mechanism is important, as it is a base for private investors and big enterprises of developed nations to exercise their obligations to protect the environment.

Appendix 6

KON TUM PROVINCIAL PEOPLE'S COMMITTEE

Department of Agriculture and Rural Development

Project for Villagers' Support for Sustainable Forest Management in Central Highland
/JOFCA/JICA

Training Report

SILVICULTURE TECHNICAL GUIDELINES IN SELECTIVE CUTTING FOR COMMUNITY FOREST MANAGEMENT

**Vi Ch'Ring Village, Hieu Commune, Kon Plong District, Kon Tum
Province**

3rd - 14th June 2008



Consultants from Central Highland University

Dr. Prof. Associate Bao Huy, Dr. Vo Hung, M.A. Nguyen Duc Thang; Engineer: Hoang Trong Khanh

Kon Tum, June 2008

Table of contents

1	Introduction	3
2	Objectives, contents and participants of the training course... 4	
2.1	Objectives	4
2.2	The training course	4
2.3	Trainees	5
3	A summary of room-based training course.....	5
3.1	The procedure of Community forest management.....	5
3.2	Community's Forest Management Plan at Vi ChRing in 2008.....	6
3.3	The Silviculture techniques applied to community's forest.....	7
3.4	The selective cutting method in community's forest	8
4	Practising of the harvesting at the site and results achieved. 14	
4.1	Holding the first commune meeting to present log cutting for trading and related benefits; making plans to co-operate with farmers at site	14
4.2	Training the marking technique for local people and preparing logistics.....	15
4.3	Marking and cutting on forest plot of Ngoc Tu Bra B	16
4.4	Hold the second village's meeting to inform the result of tree marking and prepare harvest plan.....	16
5	Comments, lesson learnt and conclusion	20
	Annex	22
	Annex 1: List of participants to the training	22
	Annex 2: List of farmers participating to field works.....	23

1 Introduction

Kon Tum Province is in the process of pilot forest and land allocation and community forest management for long term use and doing business. The process has been implemented for more than 1 year in Vi Ch'Ring Village, Hieu Commune, Kon P'Long District with the support and advice by JICA Project. By now, the communities and stakeholders have prepared 5 year plan and year-2008 plan; established Regulations on Forest Protection and Development which have been under consideration for approval by DPC.

KonTum Province is initially implementing the plan for allocation of forest land and management of community's forest as a pilot program for the community. That is, in fact, a process of giving rights to manage forest land to the community for long using and trading purposes. This process has been carried out for more than one year as a pilot program at Vi Ch"Ring village, Hieu commune, the district of Kon P'Long with a support and consultancy by JICA. Up to now, after the forest land allocation, the five-year plan for management of community's forest and the 2008-plan have been made by the community and other relevant agencies; regulations of forest protection and development have been checked and accepted by leaders of the District People's Committee.

In order to provide favourable conditions and a legal mechanism to support the community in receiving forest land allocated from which the 2008-plan for community forest management can be well implemented, Department of Agricultural and Rural Development and leaders of the Kon Tum Provincial People's Committee agreed to give rights to the community to harvest timber so as to enlarge their income as a pilot program, and to contribute more to gain the objectives of forest sustainable management as well as to fight poverty, strengthening the faiths and responsibility of the local people and the whole community for their allocated land forest area.

But, timber harvesting is a completely new job to the community in terms of not only techniques but approaches or ways to implement for the community and other relevant agencies to carry out.

For these reasons and requirements for training personnel and staffs in related district and provincial agencies how to guide and support the community in the organizing and implementing the plan for community forest management, particularly in applying silviculture techniques into marking trees for selective cutting process, making commercial production profiles to enlarge the community's income, JICA organized and carried out a training course, ***“The implementation of community forest management – Silviculture techniques in selective cutting methods”***. Trainees will become those who then train future trainees from grassroots levels or directly support the community in the preparation of the site with an orientation of building human resources in order to carry out the plan for the community forest management of the Province. And this is also a necessary action that must be done locally among the community so as to implement the pilot program of community forest management of Kontum Province.

2 Objectives, contents and participants of the training course.

2.1 Objectives

After the course, trainees must be able to:

- Guide and help the community to apply silviculture techniques and selective cutting method
- Document and hand out harvest documents to authorities.

After the course, achievements must be completed as follows:

- A site in which trees have been marked for selective cutting at the plot of NgocTu Bra B, and that at Vi ChRing village can be also put into harvesting in 2008.
- A marking profile before the submission to authority for harvesting of 2008
- A plan for timber harvesting for commercial purposes

2.2 The training course

The training course comprises of 9 days from 3rd to 11th of June, 2008. The training content is divided into 3 stages:

- Stage 1: This stage can be started with a summary of the procedure of Community forest management. And the plan for the implementation of the Community forest management of Vi ChRing village in 2008 is strongly emphasized, especially the introduction and guidance of silviculture techniques, selective cutting method and timber harvesting in order to enlarge the community's income. Time for this stage carried out at HungYen hotel is only one day in Kon Plong district.
- Stage 2: Implementing approaches and tools for selective marking trees for cutting at the site of Ngoc Tu Bra B plot that was determined to be harvested in 2008. Trainees and other 13 core farmers from the village may have a good chance to apply and use their knowledge that they learned from the training course as well as other seven (7) criteria into selecting trees for marking before the cutting-down and marking technique. Determination of transportation of timber out of plot, places and containing sites both on map and in reality are done. Time for this stage can be only 6 days. The delegation must work at Ngoc Tu Bra B plot, Vi ChRing, Hieu commune, district of Kon Plong.
- Stage 3: Guiding trainees how to summarize and calculate the number of trees for marking and how to produce a production profile. Organizing a meeting with the attendance by the whole community in order to make a harvesting plan for commercial purposes. Time for this stage is that of last two days of the course.

The whole training course

Time (Date)	Place	Contents	Participants	Approaches
3 rd June	Kon Plong Dist	Presentation of 2008-plan Guidance of silviculture techniques	The whole trainees	Group discussion
Morning of 4 th June at 9:00 a.m	Hall of Vi Ch Ring village	Meeting with the attendance by Vi ChRing people: - Presentation of 2008-plan - Making a site implementation plan	Representatives of all households from Hieu Commune People's Committee and the whole number of	Presentati on with answers and questions

			trainees	
Afternoon of 4 th June	Hall of Vi Ch Ring village	Assigning tasks of site preparation Discussing trees and species to be harvested Planning trails, containing places	The whole trainees and 12 core farmers	General discussion
5 th – 9 th June	At plot of Ngoc Tu Bra B for 2008- harvest	Marking, reporting of the site Separating plots Determining trails and containing places	4 groups of 3 core farmers each with 4 trainees as group leaders	Practice in groups
10 th June	Hall of Vi Ch Ring village	Summarizing statistics and maps Preparing harvesting profiles	The same	Practice in groups
Morning of 11 th June at 8:00 a.m	Hall of Vi Ch Ring village	Organizing a meeting with an attendance by Vi ChRing people: - Announcing the meeting results and collecting opinions - Making plans for harvesting	Representatives of all households from Hieu Commune People's Committee and the whole number of trainees	Presentati on with answers and questions

2.3 Trainees

The course attracts 21 trainees from relevant agencies or bodies and core farmers of the village, they are:

- Management Board of Forestry Projects of Kon Tume Province: 1 person.
- Forest Protection Station of Kon Tum Province: 1 person
- Forestry Protection Station of Kon Plong district: 1 person
- Chamber of Economics of Kon Plong district: 1 person
- Forestry and Agricultural Services, Development and Investment Company of Kon Plong district: 2 people
- Presentatives of Hieu Commune People's Committee, district of Kon Plong: 01 person
- CF staffs from JICA: 1 person
- Village of Vi Ch Rin: 13 people

3 A summary of room-based training course

3.1 The procedure of Community forest management

In order that trainees can easily summarize all main stages of the procedure of the Community forest management that have been and being carried out on a pilot basis at the village for more than 1 year, lecturers should introduce and summarize the procedure, especially emphasising activities that have been managed and carried out by the Community with the help from related parties and JICA which has just been carried out therefore in terms of:



Appendix6-1

- 1) Allocation of land forest,
- 2) Building regulations for forest protection and development
- 3) Making a five-year plan for forest management (2008 – 2012) and the 2008-plan: Tasks and jobs have been also determined after the allocation.
- 4) Checking and accepting the implementation, supervision and distribution of benefits: The procedure is rebuilt at this stage.

The District People's Committee is about to grant land-use certificates and checking and accepting the regulations and the five-year plan for community forest management. From that basis, the Commune People's Committee can check and accept the plan for community forest management of 2008.

On May 37th, 2008, a meeting with participants of all related partners and agencies forwarding to the purpose of promoting the procedure of the Community forest management which is being implemented in Kon Tum as a pilot program. The conclusion minutes has shown that presentatives of KonTum Provincial People's Committee and leaders of Department of Agricultural and Rural Development have agreed to allow the harvest of timber for commercial purposes on the allocated plots at the village of Vi ChRing as a pilot program so that the local famers can have an access to benefits from timber.

The havest of timber in the community's forest is a new issue in terms of not only approaches which require the participating of the local people (farmers) but the silviculture technical solutions, especially the determining trees for the selective cutting method. This training course will focus on training and practising required skills for trainees and core farmers of the village.

3.2 Community's Forest Management Plan at Vi ChRing in 2008

Lecturers have re-introduced principle contents of the plan for Community forest management of 2008, these include:

- (i) Forest protection:
 - Making regulation table, large maps,
 - Expenditures: VND 18.5 million (Jica Project)
- (ii) Development of forest:
 - Inserting native species such as *Kinotemon Ornatum* and *Prunus arborea*:
 - harvesting seedlings at the two plots: Ngoc Chim Moc and Dak Pui
 - Inserting seedlings at two plots of: Dak Dreng and Dak Nech: 50 trees/household
 - Planting forest at stream sides (*Phyllostachys pubescens*):
 - Planting trees at plots: Dak Kiec Penh, Dak Dreng, Dak Nech.
 - 810 seedlings distributed to households: 30 trees/household
 - Seedlings: supplied by JICA in 2008 with the worth of VND 12,150,000
- (iii) Harvesting and using, benefiting:
 - Selective cutting for:
 - Using

- Commercial purposes

In 2008, the maximum number of trees that can be marked is 1,320 for the plot of Ngoc Tu Bra B. However, in order to keep up with the 7 criteria of sustainable selective cutting, the number of trees that are cut down should be equal to half of two-thirds of the above-stated number.

3.3 The Silviculture techniques applied to community's forest

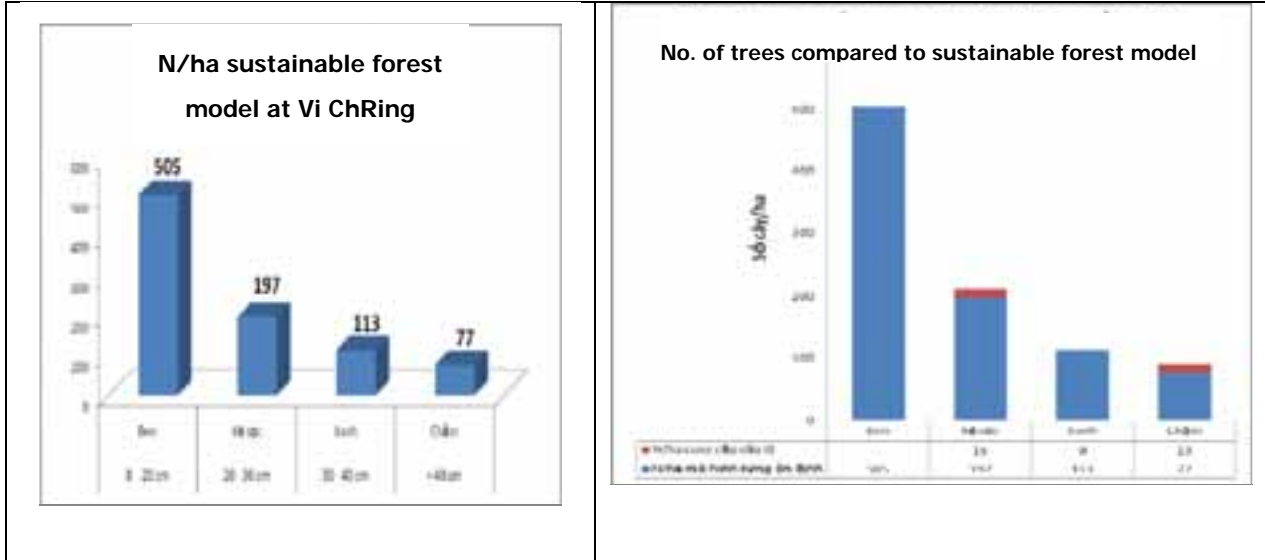
There are three principle techniques applied to natural forest:

- Selective cutting
- Enrichment of forest, development of non-timber forest products.
- Implementation of natural regeneration methods

Regulations for applying silviculture techniques in the management of community's forest

Regulations	Effects
<i>With community and farmers' participation</i>	Improving the ability of the community in forest management. And the local people can use and implement silviculture techniques on their own.
<i>Using multi-purpose and multi-target forests</i>	The management of community's forest can meet demands for diversified forests products of the community: timber, firewood, non-timber forest products (foods, medical materials and materials,..). For little impact on forest is made, forest will, therefore, maintain its numerous functions: production, prevention, gen preservation–biological diversity
<i>Applying local knowledge and skills of ecology</i>	Local knowledge and skills in using forest vegetation (herbal trees, materials, foods, ...) can be also used at the same time in order to satisfy the needs of the community and properly use the multi-purpose forest
<i>Silviculture techniques and local techniques on a scientific basis</i>	The harvesting activities do not badly affect the environment and be accordant with community's resources
<i>Matching the demands and supplies when using forest to sustainably maintain forest</i>	Permanently satisfying the demands for forest products of community as well as maintaining forest capital
<i>Effects of expenditures</i>	Making the best use of necessary time and resources to be accordant to the ability of the community.

The sustainable forest model is considered as a basis for the sustainable harvesting and using natural forests.



3.4 The selective cutting method in community’s forest

Number of trees supplied in comparison with sustainable forest model

In this section, lecturers will introduce some main contents as follows:

1. Concepts and subjects of the selective cutting method in the management of community’s forest

📌 Concepts:

- The selective cutting method in the management of community’s forest can be used in combination with two traditional technical solutions, selective harvesting and maintenance-based cutting (thinning).
- This solution should be used and applied in order to satisfy the numerous demands for timber and firewood of the local people for building houses, breeding facilities, fences and for trading purposes.

📌 Objectives:

- Harvesting a quantity of timber and firewood of different sizes and qualities for the needs of households, community and for trading.
- Gradually adjust forest structures with an orientation of stability suitable to purposes of the forest management by the community by cutting at low and permanent intensity.

📌 Subjects:

- In comparison with the number of trees in the sustainable forest model, a number of trees of different diameter training coursees can be harvested
- Households and the community, who have needs of this number of trees of different sizes and species or these can be locally traded.

2. Silviculture techniques in the selective cutting method

Regulations:

- The procedures of the implementation of the selective cutting method must be carried out based on the sustainable forest model.
- Impacts on land and streams or rivers must be minimized and mostly reduced bad impacts on the neighbouring and regenerating trees during the harvest.
- Making the best use of quantity of timber and firewood from exploited trees to increase the effects of using forest.
- Assuring the safety conditions for workers who work at the harvesting or neighbouring sites.
- **Silviculture techniques in the selective cutting method:**
- Harvesting seasons
- Determining trees that should be left from harvesting according to regulations by the State and community.
- Selecting species for harvesting.
- Number of trees for harvesting according to coloured diameter training courses
- Criteria of selection of trees for cutting.
- Determining trails for transporting timber and containing places

Questions for general discussion: How can community be able to supervise the cutting and transporting timber? (Without losses, improperly and illegally cutting or making corrupt uses? There must be a practicality!

After the discussion, some solutions have been made so that the community can use to supervise the cutting and transporting timber:

1. Properly selecting the supervisor
 - The local people who supervise are able to read the profiles or documents, and know species well
 - The supervisor must be well made to know the plan and number of trees to be harvested.
 - The supervisor should be able to number trees for supervising.
 - Trees for harvesting should have both native and King names
2. Permanent supervision with a coordination
 - The supervisor must be at the harvesting site permanently.
 - Checking and supervising the production line of cutting from the stage of cutting down to the stage of transportation.
3. The contract must be made detailed for the later supervision
 - With a supervision by the local people and rangers.
 - Making a good co-operation among the community, governmental and relevant agencies.
 - People who assist the sawyer can also work as a supervisor.
 - The cutting and transporting of timber should be reported and noted down on books by a secretary.
4. Assigning tasks and jobs for the community

- The local people and community must be well made to know the plan for harvesting,
- Tasks and obligations must be clearly assigned for the community

5. The responsibility of supervisors must be made clear

These solutions are very necessary and important and they will be, once, discussed with the whole community in the village meeting so that they can be put into implementation for the making plan for commercial harvesting of timber in 2008 at Vi Ch'Ring village.

Practicing in groups: The training course will be divided into 3 groups to do the practice "Determining kinds of harvesting trees in the community forest of Vi Ch'Ring village"

- Group 1: Trees need protecting according to State Laws in Vi Ch'Ring village.
 - Based on Decree No32/2006/NĐ-CP
 - Determining trees to be protected in Vi Ch'Ring village
- Group 2: Trees should be protected for the needs of the community
 - Making a list of highly-valuable and rare trees and trees for timber as well as other species which are used for non-timber purposes for the community (such as barks, leaves, roots, fruits, ... for medical uses, materials, foods...)
 - This kind of tree is not for harvesting
- Group 3: Trees for harvesting
 - Harvesting trees for household uses: building houses, breeding facilities, materials, tools
 - Trees for firewood
 - Trees for firewood which will be traded.

After 30 minutes of working, each group has the following results:

Group1: Species should be protected according to State Laws in Vi Ch'Ring village (according to Decree No 32/CP/ 2006)

Number	Species name (Scientific)	Species name (local)	Abundance in locality (numerous, average, little)
1	Dalbergia tonkinensis	Afzelia xylocarpa	little
2	Orchid	La doc	average (boundary area)
3	Pơ mu	Loong hy	little
4	Dalbaegia cochinchinesis		average (boundary area)
5	Cinamomum parthenoxylum	Loong ha hung	little
6	Paphiopedilum		little (boundary area)
7	Pinus taeda		little
8	Cinamomumparthenoxilum	Loong Blong	average

•

Group2: Trees should be protected for the needs of communities

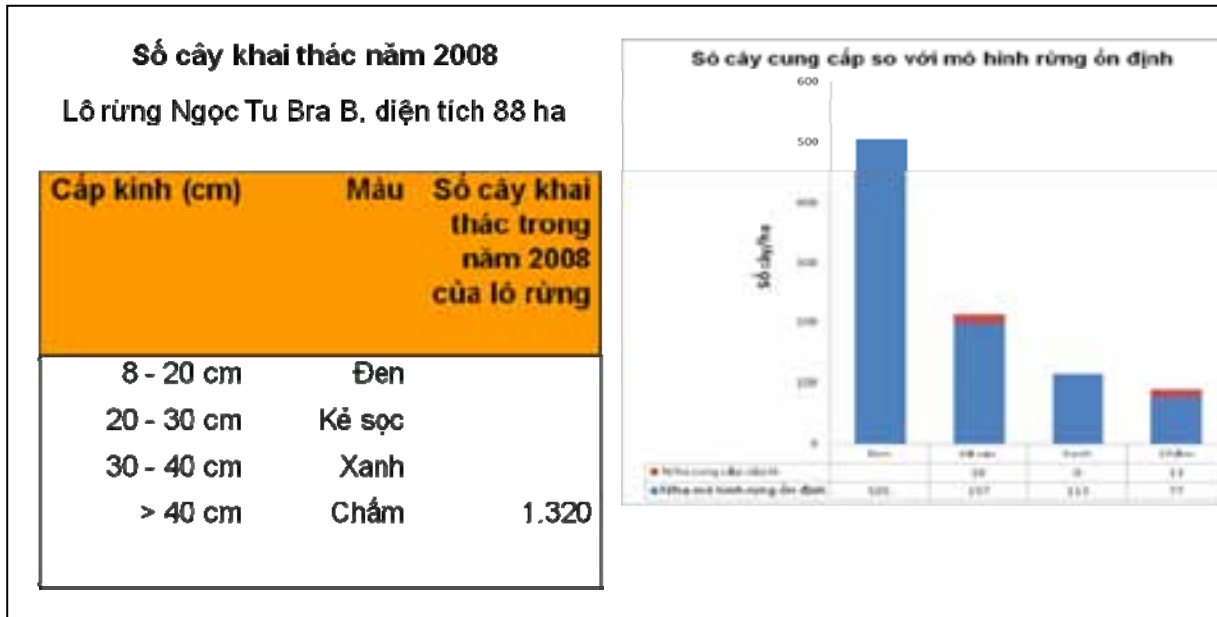
Number	Species name		Abundance in locality	Species sections for using	Use (note)
	Scientific names	Local names			
1	Gacinaoblomgifilia	Long hling	little	fruit	For fruits or food selling
2	Mangiferaminitifolia	Long po	little	fruit	For eating

Group3: Popular trees available for harvesting

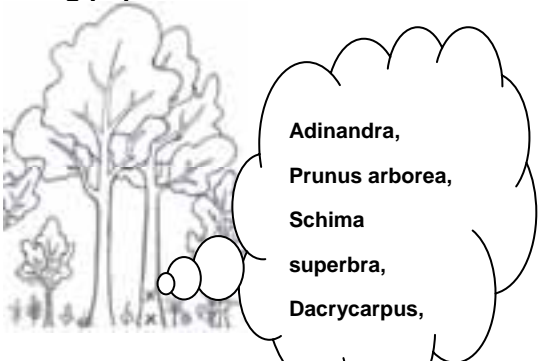
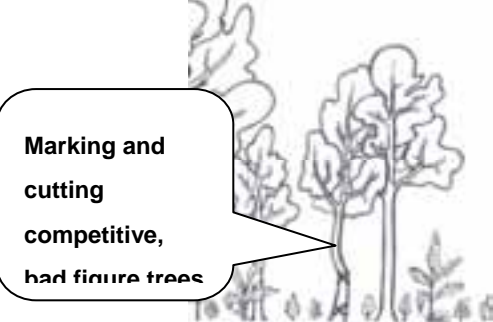
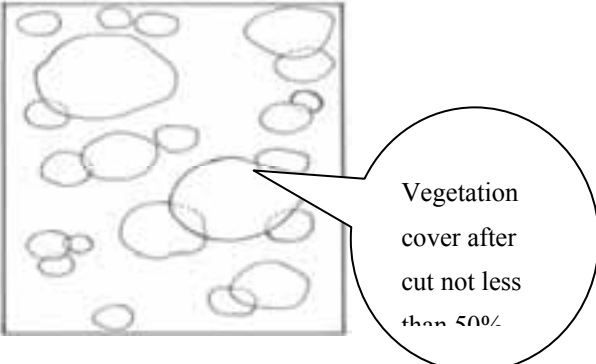
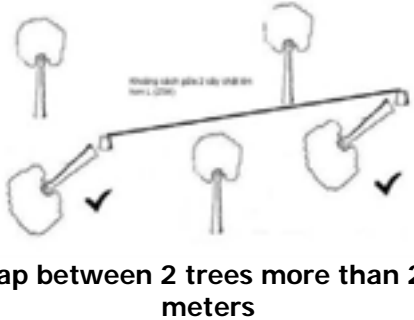



Number	Tree name		Use
	Scientific name	Native name	
1	Adinadra	Ca bonh	Building house, trading
2	Manglietia	Long ca lang	trading, building house
3	Prunus arborea	Long Hroi	trading, building house
4	Schima superba	Tø móch	Building house, trading
5	Dacrycarpus imbricatus	Long Hmea	Building house, trading
6	Combretum	Hrenh	trading
7	Lithocarpus	Long ka sa	Building house, firewood
8	Artocarpus rigidus	Long ca pong	Building house, trading
9		Long ca sim	Firewood
10		Long đúch	Making fence, firewood
11	Nephelium lappaceum	Long D Reang	Building house, firewood
12	Artocarpus	Long H móch	Building house, firewood
13	Mixed species		Firewood, fence
14		Long Pru	For timber

Results of determining the above trees will be appraised by the community and become the basis for determining names of trees chosen when harvesting in the community forest.

3. Number of harvesting trees must be made according to coloured diameter classes training course and approved plans



**7 CRITERIA FOR SELECTIVE CUTTING METHOD
IN HARVESTING COMMUNITY'S FOREST IN VI CHRING**

<p>1. Cutting popular trees</p>  <p>Adinandra, Prunus arborea, Schima superbra, Dacrycarpus,</p>	<p>2. Cutting competitive trees, bad figures.</p>  <p>Marking and cutting competitive, bad figure trees</p>												
<p>3. Cutting trees assuring the vegetation cover not less than 50%</p>  <p>Vegetation cover after cut not less than 50%</p>	<p>4. Assuring the minimum gap between 2 trees according to diameter class</p>  <p>Gap between 2 trees more than 25 meters</p>												
<p>5. Cutting trees must be carried out outside the buffer zone of rivers or streams.</p> <table border="1" data-bbox="188 1258 513 1608"> <thead> <tr> <th>The width of streams</th> <th>The width of the buffer zone of the two stream banks</th> </tr> </thead> <tbody> <tr> <td>< 1 m</td> <td>Without buffer zone</td> </tr> <tr> <td>1-10 m</td> <td>20 m</td> </tr> <tr> <td>11-20 m</td> <td>50 m</td> </tr> <tr> <td>21-40 m</td> <td>80 m</td> </tr> <tr> <td>> 40 m</td> <td>200 m</td> </tr> </tbody> </table> 	The width of streams	The width of the buffer zone of the two stream banks	< 1 m	Without buffer zone	1-10 m	20 m	11-20 m	50 m	21-40 m	80 m	> 40 m	200 m	<p>6. Not cutting in the decent, slippery, mountainous terrain.</p> 
The width of streams	The width of the buffer zone of the two stream banks												
< 1 m	Without buffer zone												
1-10 m	20 m												
11-20 m	50 m												
21-40 m	80 m												
> 40 m	200 m												
<p>7. Assuring to have enough replacing trees at the cutting point</p> 													

Following the said above, lecturers have presented and instructed in details the following contents:

- Instruct the way of marking the ready to cut trees and taking notes
- Determine the trails for log dragging and the position of log fields
- Instruct how to collect exercise results
- Techniques for harvesting trees:
 - + Techniques for tree cutting down, painting the code of log knot
 - + Log cutting, taking advantage of branch timber
 - + Forest clearing after harvesting
- Collect harvested log knot

4 Practice harvesting at the site and results achieved

Skills and methods of tree selecting and marking is implemented at the forest plot of Ngoc Tu Bra B and Vi ChRing village, Hieu commune, Kon Plong district in the period of 8 days (4 - 11/6/2008). Eight trainees joined with 13 local core farmers. The process of practising includes the following parts

4.1 Organize the first commune meeting to present commercial harvest and related benefits; making plans to co-operate with farmers at site

In Mr Dinh Xuan Do's house in Vi ChRinh village, on the morning of 4/6 a village meeting was held. After a presentation of the purpose that the delegation has, two trainees presented the following issues:

4.1.1 Reporting the results achieved in management of community's forest in the Vi Ch'Ring village so far.

Things done	Present situation
Land, forest has been allocated to the village community	Land-use certificates are granted for district people who are going to finish tasks
Making a five-year plan for the management of community's forest and the 2008-plan	Finished and waiting for the approval of the commune and district people's committees
Building a regulations for protection and development of forest	The Commune People's Committee has approved, waiting for the people's committee of district to approve
The Provincial People's Committee has agreed to initially harvest timber for trading and getting benefits	The Provincial People's Committee is about to issue its decision.

4.1.2 Report the plan of management of community's forest in Vi ChRing in 2008.

Concentrating on three main activities:

- (i) **Forest protection:** Making boards, landmarks, prints and issuing regulations for the protection and development of forest as well as delivering these to plots and establishing three forest protection teams
- (ii) **Forest development:** including two main activities
 - Digging up and planting prunus arborea, dacydium elatum, in the poor land: 30 trees/household; 800 trees each kind.

- Planting bamboo in areas by streams. Each household plant 30 trees, the whole village will, therefore, plant 810 trees. In coming July, a plan for training techniques and supporting the village in terms of seedlings will be carried out.

(iii) Training on selective cutting method, timber harvesting in order to bring benefit for local people

- Training silviculture techniques to mark trees for cutting
- Practising the process of marking trees in the plot of Ngoc Tu Bra B.
- Preparing and building harvesting profiles.

4.1.3 Prepare plans for training and practising in plots:

- Practice the selecting and marking trees process for harvesting, the meeting has made a plan of determining tasks, time, and methods to carry out ... (see the plan in the appendix.)
- The whole village selects core farmers to co-operate with the delegation from 5 - 9 of June to mark trees for harvesting in the plot Ngoc Tu Bra B. The list of 13 farmers is divided into 4 groups presented in the appendix.

4.2 Training on the marking technique for local people and preparing logistics

On the afternoon of June 4th, the delegation continued to work via a meeting in Do's house with the attendance by trainees and 13 core farmers selected. Contents of the meeting are shown as follows:

- Presenting and explaining 7 criteria for selecting trees to mark in the harvesting. With visual images easy to understand and apply.
- Discussing and checking with the people about trees marked, precious and rare trees must be remained according to Laws, and trees remained for the non-timber purposes of the community
- Instructing ways of marking trees: painting a red cross on the two faces on the two position 1.3meters on the tree body and near roots (marking 4 points on a marked tree). Identifying methods of tree marking according to each group (group1...A; group 2...B; group 3...B and group4...D), ways to write to the tree bark.
- Discussing to determine trails for log dragging: With a motto of taking advantage of car roads, available roads to limit opening more new roads to economize. The position of log fields will be chosen to make favourable conditions for collecting timber, large enough to hold timber, favourable for log collecting for checking, stamp with hampers as well as favourable for transporting when selling timber. These works will be determined on the spots, marking GPS position to map.
- Preparing logistics for 5 working days at site: tree measuring tools, paints, compasses, GPS machine, cleavers, personal equipments, canvas for making tents, hammocks, and foods...



Chọn lựa cây bài trong rừng

4.3 Marking and cutting on forest plot of Ngoc Tu Bra B

On the morning of June 5th the delegation including 26 people divided into 4 groups entered the forest plot of Ngoc Tu Bra B, camping by the stream at the mountain foot. The delegation quickly cleared up, encamped, prepared logistics, prepared lunch.

In the afternoon, lecturers guided people to exercise the technique of selecting marked tree to cut at the forest plot according to 7 indicators, ways of peeling phloem, paint and write code of marked tree on the tree trunk and write into sheet of marked tree. After 4 groups exercise and understand the way to do, these 4 groups continuously do their work until the end of afternoon.

Work that 4 groups have to work for the next 4 days (from June, 6 to June, 9) is as follows:

- Measure, take GPS coordinates of harvest road to go into forest plot to draw on map.
- Mark timbers, write the data of timber in to the sheet
- Bury 4 concrete stakes in the important land mark to identify the forest plot on the field.
- Check, peel phloem and paint the block border line in red to make it clear and the boundary between the plot of Ngoc Tu Bra B and Ngoc Tu Bra A.
- Identify timber trailing (tree trunk painted white) on the forest plot field, record the GPS coordinates in order to draw on the map.
- Identify gathering yard of timber at the border position between the plot of Ngoc Tu Bra B and Ngoc Tu Bra A; slash shrub and pant in white to mark the timber gathering yard.

As of the afternoon of 9th of June, the work was completed; delegation came back to Vi Ch'Ring village.

On the 10th of June, groups worked together at Mr. Dinh Xuan Do's house with the following contents and results:

- 4 groups classified timber group to all species of timber that group marked through classified list of 8 timber groups of State.
- Summarized the number of marked trees according to each timber group and then to all forest plots.
- Discussed, built the plan for commercial harvest of timbers in 2008 at Vi Ch'Ring village.
- Clearly discussed, built the way of sharing benefits from commercial harvest of timber.
- Discussed, identified work that needs to be done at once of agencies, authorities to promote process of community forest management in general and activity of timber exploitation in order to help villagers at Vi Ch'Ring village get benefit.
- Guided technical staff the way to write document of forest harvesting applied in community forest management.
-

4.4 Hold the second village's meeting to inform the result of tree marking and prepare harvest plan

Target of the second village's meeting is summarized all information, result of selective tree marking and other relevant issues to fully inform to all household, representative of Commune People's Committee, from that to widely discussing, amending and agreeing on the community

The second general meeting of village implemented on June, 11th 2008 with the participation of most of households in the village and representatives of Hieu Commune.

Core farmers presented major archived results as follows:

- **Result of summarizing number of trees marked according to 7 criteria**

Forest plot: Ngọc Tu Bra B

Plot: 1

Subzone: 498

Village: Vi ChRinh

Commune: Hieu

District: Kon Plong

Province:

Kon Tum

Summarist: 12 core farmers and cadres

Summarizing date: June, 10 2009

Timber group	Major species of timber	Coloured diameter class	Number of timber	Note
III	Clausena lansium, Leucaena leucocephala	Dotted	100	
IV	Dacrydium elatum, Dacrycarpus imbricatus	Dotted	75	
V	Syzygium, Lithocarpus elegans, Schima superba, Nephelium lappaceum, Shorea roxburghii, Exbucklandia populnea, Sp	Dotted	179	
VI	Garcinia oblongifolia, Prunus arborea (Betula alnoides), Bombax insigne, Artocarpus rigidus ssp, Parashorea	Dotted	83	
VII	Long hem (đp), Long tai ngheo (đp), Long ta muri (đp), Long ngu (đp), Long Kung (đp), Lithocarpus dealbatus, Long Heo, Parinari annamensis, Lithocarpus mucronatus, Sp	Dotted	94	
VIII	Long la ly (đp), Long Hlum (đp), Sterculia, Bombax malabarica*	Dotted	27	
	Total	Dotted	558	

- **Show the position of timber trailing and timber-yard on the map**
- **Plan for timber harvesting in Vi Ch'Ring in 2008**

No.	Tasks	Time	Responsibility of community	Supervision and support of specialized agencies	Ways to do
1	Select tree to harvest and survey trails, timber-yard	From June, 5 to June, 9 th 2008	Board of Community Forest Management holds tree marking	Forest ranger in local, provincial and district branches	Select tree according to 7 indicators and the number of tree is under the schedule
2	Prepare map and document to harvest timbers	June, 15 2008 Complete	Community Forest Management Board signs into document	Consultation of Thai Nguyen University	-Inform contract price about felling and transporting timber (Kon Plong Company) -Information of floor price of 8 timber groups of Kon Tum province (Provincial Project Management Board)
3	Grant license of	It is necessary		-Provincial and district branches.	

	timber harvest	to have license before July, 30 to implement in time		-District's People's Committee grants license	
4	Felling, cut into species	From August, 10 to 20 2008	Assign 4 persons to accompany, monitor and learn	Local forest ranger	Sign contract with Kon Plong Company
5	Prepare list of timber groups		Assign more than 4 persons to prepare list of knot of timber		
6	Forest cleaning		Assign 8 persons and divide into 4 group to clean forest		-do after felling -Company cuts large branches when cleaning forest
7	Trail timber to log field and handover field	15/08-15/09	-Tran Quang Hai works as accountant and secretary -Đinh Thanh Tim is common supervisor		Sign Contract with Kon Plong Company
8	stamp with forest rangers' hammer; prepare timber documents	From September, 15 to 30	Mr. Hai and Mr. Tim coordinate with local forest rangers	Local forest rangers, district forest protection station	
9	Sell timber by auction		Commune People's Committee and Community Forest Management Board hold auction	Department of Finance and Planning of District supports	Hieu Commune People's Committee submits information into district, releases information on district, Television or paper of Kon Tum.
10	benefits sharing		Community Forest Management Board, secretaries, accountants	Commune People's Committee supports the work of paying the tax of natural resource	

- *Way of benefits sharing from the commercial harvesting of timber*
- *Primarily discuss the contract of timber felling and trailing with Kon P'Long Company*

Representative of development and investment Company of Agro-Forestry and services of Kon P'Long District, Mr. Tran Van Nhu gives designed price of the company to fell and trail timber as follows:

- 1) Expense for felling and cutting into species = 45,000 VND/ m³
- 2) Expense for gathering timber = 170,000VND/m³
- 3) Timber transportation = 150,000VND/m³
- 4) Check way 3.5km + Find new way 1.5km = 150,000VND/m³
- 5) Management expense = 35,000VND/m³.

After general discussion, there are some responses and requests as follows:

- Villagers supervise themselves so there is no management expense (5).
- Expense in item (1) is reasonable and acceptable
- Expense (2) and (3) should be aggregated, and this expense is rather high because the distance rate of transporting timber is just 2.5 km and the transportation way is available and must be repaired in some sections.
- In item (4) it is necessary to specifically identify the length of the way that needs to be checked is just 1,5km; open new way to maximum transportation of timber is 3 km. This expense should be calculated according to the real length of the way and expense of construction machine but shouldn't be calculated by m³ of round timber.



Hon thôn thôn nhất kế hoạch khai thác và giám sát

General conclusion: Company should consider these above requests to reduce norm in contract, and ensure that the community will raise its benefit and the company also have acceptable interest. In order to let community forest management board signs contract with company, Commune People's committee shall need to have more support and consultation during the process of negotiation and contract signing. In addition, it is necessary that B side should ensure the rate of progress and pay more attention to the cutting of branch, chump, and limb during the forest cleaning after harvesting.

• **Discuss and agree on the work that needs to be done immediately of relevant parties**

No.	Work	Vi ChRing	Hieu Commune People's Committee	Kon Plong District	Kom Tum Provincial agencies
1	Have Decision on harvesting commercial timber and beneficial mechanism of Province		Commune gives official document to answer official document No. 13 of Department of Agriculture and requests it to give Decision on timber harvest.	District has official document to answer official No. 13 of Department of Agriculture and requests Province to give Decision on timber harvest	Department of Agriculture acts as a counsellor in order to help People's Committee of Province give Decision
2	Decision on approval of regulation on forest protection and development of Vi ChRing			People's committee of District gives decision on approval of the Regulation	
3	Decision on approval of five- year plan of Vi ChRing			People's Committee of District gives decision on	

				approval of five – year plan.	
4	Decision on approving the plan in 2008 of Vi ChRing		Commune People's Committee approves plan in 2008.		
5	Submit document and grant license of timber harvest in 2008	Board of community and village forest management sign into the document	Commune People's Committee signs into document and has statement granted by District	District People's Committee grants license of forest harvest in 2008	
6	Contract of felling, transporting	Village, Board of community forest management discuss and sign contract with company	Commune People's Committee supervises and assists.		

5 Comments, lesson learnt and conclusion

Training course has succeed and reached the expected target. To make the progress of community forest management reach the good result and fulfil the plan of harvesting timbers in order to help villagers get benefits from forest, there are some comments and requests as follows:

Community forest management is a important policy and a practical demand that needs to be strengthened. Timber harvesting to bring benefit to citizen, community allocated forest is a new work and has many challenges. To implement this plan, it is necessary to have the interest of province, district and relevant branches with the effort and high responsibility of members in the community and the support of commune leaders. During the last year, authorities has promoted the work of granting land-use certificate (red book), approval of legal documents which improve forest management of community is still very low. Relevant parties and authorities of levels should consider and implement above proposed issues as soon as possible in order to reach good result and smooth process.

Unofficial assessment shows that the training course and field activities has succeeded in various fields, however, these following issues need to be reviewed and withdrawn for necessary moral:

- The participation of some learners is not good, if they are absent in some lessons it will effect and reduce the quality and efficiency of work.
- Time for practising is at the end of weekend so it is necessary to limit the participation of trainees (who are technical staffs) due to they are busy with their work and sometime unwillingness to work at the weekend.
- It is necessary to closely coordinate between Provincial Board of project management, leader and relevant branches of district and commune to regulate the operation, better support to training process, implement work as well as collect sufficient information for better support to community.

Opinion of Technical adviser of JICA: at the end of the course, technical adviser of project has some following opinion as follows:

- Kon Tum province pays attention to implementing pilot program of community forest management. There fore, the work of holding course is very essential and useful to implement important activity in community forest management plan of Vi Ch'Ring village in 2008.
- Members of project highly appreciate the output result of training course including knowledge, training skills as well as activities reached from the field.
- JICA project will be completed in the next September. However, it is expected that learners will have chance to apply learned knowledge supporting other community to implement community forest management.
- It is expected that the process of community forest management of Vi Ch's Ring village will be maintained, develop and reach the expected target. The project will continuously supports for this process, especially training course and implementation of forest development thought planting indigenous tree and bamboo in July.

Annex

Annex 1: List of participants to the training

No.	Full name	Position	Organization
1.	Pham Duc Tu	Officer	Kon Tum Sub-DFP
2.	TranVan Thanh	Technican	Mang La Forest Enterprise, Kon Plong Company
3.	Duong Thanh Phuong	Technican	Mang La Forest Enterprise, Kon Plong Company
4.	Ho Dac Huy	Officer	Kon Tum Provincial Forestry Projects Management Board
5.	Nguyen Ngoc Xuan	Officer	Economic Division of Kon Plong District
6.	Tran Van Nhu	Officer	Mang La Forest Enterprise, JICA Project
7.	Dang Tuan	Local forest ranger	Kon Plong Forest Protection Station
8.	Dinh Xuan Do	Vice Chairman	Hieu Commune People Committee, Kon Plong District
9.	Dinh Van Dich	Head	Vi ChRing CFM Board, Hieu Commune
10.	A Pho	Farmer	Vi ChRing Village, Hieu Commune
11.	Mr. Kato	CTA	JICA Project
12.	Ms. Duong	Interpreter	JICA Project
13.	Dr. Prof. Associate Bao Huy	Consultant	Central Highland University
14.	Dr. Vo Hung	- Ditto	- Ditto
15.	M.A. Nguyen Duc Dinh	- Ditto	- Ditto
16.	Eng. Hoang Trong Khanh	- Ditto	- Ditto
17.	Pham D Quoc Vuong	Student	- Ditto

Annex 2: List of farmers participating to field works

There are 13 local farmers participating with the working group; they are divided in 4 groups:

	Group 1	Group 2	Group 3	Group 4
Farmer A Voan	A Tim (vice head) A Hong A Pho	A Trieu Dinh Xuan Hai Dinh Van Dich (vice head)	A Chieng A Sang Y Tre	Dinh Xuan Dam (vice head) Nguyen Quang Hai Y Mia
Technican	TranVan Thanh Dang Tuan (head)	Duong Thanh Phuong (head) Nguyen Ngoc Xuan	Pham Duc Tu (head) Dinh Xuan Do (vice head)	Ho Dac Huy Tran Van Nhu (head)

Kon Tum Department of Agricultural and Rural Development
Projects of Villagers' Support for Sustainable Forest Management in Central Highland –
JOECA/JICA

REPORT
on
**TECHNICAL TRAINING ON FOREST ENRICHMENT AND
PLANTING OF MAO TRÚC IN THE PLAN FOR
COMMUNITY'S FOREST MANAGEMENT IN VI CH RING
VILLAGE IN 2008**

Vi Ch'Ring Village, Hieu Commune, 20 - 23 July, 2008



Consultant: **Dr. Prof. Assoc. Bao Huy; Dr. Vo Hung**
MSc. Nguyen Duc Dinh

July of 2008

Table of contents

1	Forewords, reasons for the training course.....	3
2	Objectives, agenda, participants and training methods.	3
2.1	Objectives of the training course	3
2.2	Training Agenda	3
2.3	Participants.....	3
2.4	Training methods	3
2.5	Training materials.....	4
3	Summary of training and practice process	4
3.1	Site preparation, uprooting seedlings for training and practice	4
3.2	Training, planting practice and forest enrichment	6
4	Conclusions and recommendations	8
	Annex	10
	Annex 1: List of participants to the training course.....	10
	Annex 2: Contents of the training course of 2008 plan for community forest management.	11

1 Forewords, reasons for the training course

Since the beginning of 2007, Kon Tum Province has implemented the pilot plan for Community Forest Management in Vi Ch'Ring Village, Hieu Commune, Kon PLong District. So far significant results have been achieved: the community have been granted long-term land-use certificates. Five-year and 2008 plans for the community forest management and Regulation on Forest Protection and Development (RFPD) have been prepared and approved with assistance by related agencies.

Although waiting for the final approval from authority for the above documents, local people have actively implemented some works specified in the 2008-plan for forest management such as organize forest protection; mark boundary and construct signboards ...

In order to assist the community in implementation of 2008-plan for forest management in the remaining half year, a technical training course for implementation of forest management have been carried out from 20-23 of July, 2008 under the assistance and advice from JICA Project and technical consultants from forestry lecturers from Central Highland University. The community have been trained on techniques to plant *Phyllostachys pubescens* along streams and enrichment planting of indigenous timber species like *Dacrydium pierrei* Hickel and *Betula alnoides* at poor forest plots.

The objectives of the training course and field practice are to enable the local people from Vi Ch'Ring to understand and acquire techniques and skills to continue afforestation and enrichment activities of forests according to the 2008 plan of community forest management.

The process and outputs are being presented in this report.

2 Objectives, agenda, participants and training methods

2.1 Objectives of the training course

- To provide villagers and field staffs with techniques of forest enrichment with natural seedlings and techniques of planting mountainous bamboos of *Phyllostachys pubescens*.
- To assist Vi Ch'Ring village community to enrich forests and develop non-timber forest products in the 2008-plan for community forest management.

Expected outputs from the training course:

- The techniques for forest enrichment with natural seedlings and planting *Phyllostachys pubescens* bamboos are transferred to local people and field staffs.
- One tenth of the planned number of trees is planted by the community and the remaining of this plan will be actively implemented in September of 2008

2.2 Training Agenda

The training is designed for a 4 days from 20-23 July, 2008. The training agenda is divided into two stages:

- Stage 1: Started with the site preparation: selecting convenient area to do vegetation treatment, digging holes and selecting natural seedlings before uprooting for planting. This work is first explained and guided on site by lecturers.
- Stage 2: Classroom theoretical presentation is conducted then on site practice of planting is conducted.

(The details of the agenda is presented in Annex 2)

2.3 Participants

There are 40 trainees including all households from Vi ChRing Village, village leader of Village No. 6 in Hieu Commune and other 6 households from Po E Commune with some Hieu CPC staffs. *(The detailed list of these trainees is presented in Annex 1)*

2.4 Training methods

Learners-centered Training Method (LCTM) is used in the whole course.

- The theoretical section always includes visual aids and on job training is also conducted on site. The lecturer does the work while explaining the process to trainees; then the trainees work with the guidance from the lecturer.
- Ensure all trainees have chance to perform all learned activities. The skilled performers again help the slower performers.
- Combine technical advances with the local traditional experience.

2.5 Training materials

Trainees are provided with 3 different materials:

- (i) “Technical guidelines on planting *Phyllostachys pubescens*”;
- (ii) “Technical guidelines on planting *Betula alnoides*; and *Dacrydium pierrei* Hickel by uprooting seedlings from natural forest.
- (iii) “Technical guidelines on planting *Dacrydium pierrei* by uprooting seedlings from natural forest.

These are necessary materials for the local people to use and refer and apply not only for short-term works but also long-term future use for nursing and harvesting of bamboo shoots and forest trees...

3 Summary of training and practice process

3.1 Site preparation, uprooting seedlings for training and practice

In the morning of July 20th, the training is held at Dinh Xuan Do's house with participation of all villagers.

The objectives of the training was informed by the lecturer, then villagers are guided to implement afforestation and enrichment planting as stated in the 2008-plan for community forest management.

The agenda for four-day training is commented and agreed by the locals.

🚧 Site preparation for planting *Phyllostachys pubescens*

People gathered at the site for planting *Phyllostachys pubescens*. Requirements for planting *Phyllostachys pubescens* include soil layer of more than 1m deep; humid and spongy soil; not waterlogged in rainy season; airy planting site and unshaded area; because *Phyllostachys pubescens* is a light demanding species The planting site for *Phyllostachys pubescens* has been finally decided through a discussion. And banks of Dak Pui stream in Dak Dreng forest plot are selected as suitable planting site. The site is located 5 – 10 m from rice fields. The site has a thick basalt soil layer which is unshaded and has similar property of forest soil.



Meeting for preparing plans and objectives of the training course



Vegetation is cleared by women for digging holes



Clearing vegetation and hole digging



Digging holes and using compost for bed dressing

The vegetation clearing, shrub cuttings, weed cleaning were conducted; and 31 holes were dug with the size of 60-80cm long; 40-50cm wide and 40-50cm deep to plant seedlings. During hole digging, weeds must be cleaned, the surface soil and deeper layer soil must be kept separated. Surface soil was mixed with 5 kg of compost to fill in each hole. Remove all tree roots and rocks in holes before planting seedlings.

🚧 Seedling and site preparation for enrichment planting of indigenous species of *Betula alnoides* and *Dacrydium pierrei* Hickel

On July 21st, all trainees went to forest plots of Dak Mua and Dak Pui next to old village to collect natural seedlings to uproot for planting.

As for *Dacrydium pierrei* Hickel, this species can be easily seen along old harvest trails with a high density. Here, lecturer has delivered technical steps for uprooting seedlings and these steps can be summarized as follows:

- Clear vegetation from 0.8 to 1m wide around seedlings.
- Use hand to compact the soil round seedling roots so that soil won't break when uprooting the seedling.
- Use 30-40cm pointed knife to cut the soil around seedling roots to make a circle with 10-12 cm radius from seedling in order to cut off its around roots,
- Dig a 30 – 40cm deep hole by the circle border.
- Put a hand to the hole and insert the knife at the opposite site to smoothly uproot the seedling out of the hole
- Cutting roots and tidy the root soil package.
- Using plastic bag to cover the root soil package and tie the bag of soil package with 2 or 3 rubber strings. Make sure not to break the soil package,
- Smoothly put the soil package into a bag and place it in a cool place.

Trainees followed actions steps done by lecturer with his guidance.

By this way, the whole group of trainees have uprooted around 40 *Dacrydium pierrei* Hickel seedlings that morning and 30 of *Betula alnoides*.



On-site technical instructions



How to uproot and cover soil package with plastic bags



Digging holes under poor forest cover for planting *Dacrydium pierrei* Hickel



Women are digging holes for planting *Betula alnoides*

In contrast to *Dacrydium pierrei* Hickel, *Betula alnoides* seedlings can be only seen at place of lighting area, with much volume of sunlight. Since their seedlings are often at slope, clay and hard soil area, uprooting and forming packages are more difficult.

It is very important to keep seedlings out of intense sunlight during the transport to planting holes for these seedlings would quickly lose their water volume and wither and result in low survival, especially *Betula alnoides*.

This number of seedlings must be placed under forest cover before planting.

The selection of planting site was done on July 21st afternoon by the whole group of trainees with a suggestion that *Betula alnoides* should be placed at airy, humid and qualified land areas of much light. Mean while, *Dacrydium pierrei* Hickel should be placed under poor natural forest cover with a cover hole of 3 – 5 m wide to ensure that seedlings would be covered at their first stage of growth.

The vegetation clearing and treatment are carried out by all trainees according to a separation trench of 1.5 to 2m wide. Then holes of 40 x 40 x 40cm dimension are dug afterwards. And 40 holes for *Dacrydium pierrei* Hickel and 30 for *Betula alnoides* are completed. Pilot planting place is located near village road in poor plot of Dak Dreng so it is convenient for later watching, nursing and training visits.

3.2 Training, planting practice and forest enrichment

A room-based theory delivery was held at Dinh Xuan Do's house in mornings of the 22nd and 23rd. Contents of this delivery by the lecturer conclude:

- A general introduction of three species: *Phyllostachys pubescens*, *Dacrydium pierrei* Hickel and *Betula alnoides* in respect of their morphology and biological characteristics.
- Species allocation features, climate and planting area
- Economic value of species: for bamboo shoots, bamboo
- Seedling production techniques: for *Phyllostachys pubescens* from seeds; *Dacrydium pierrei* Hickel and *Betula alnoides* by using uprooting techniques.
- Nursing and management techniques as for forests after planting; suitable thinning, bamboo harvesting techniques to form an abundant forest of *Phyllostachys pubescens* ...

(Details of these techniques can be seen in the materials given to trainees)



Technical training on planting *Phyllostachys pubescens*, *Dacrydium pierrei* Hickel and *Betula alnoides*

Seedlings of *Phyllostachys pubescens*, fertilizer and other agricultural materials are distributed to the households before planting at site in the evening. That is:

- Each household in Vi Ch'Ring vill age is handed over 27 seedlings of *Phyllostachys pubescens*, 25 kg of phân vi sinh, 2.5 kg of NPK; 50 plastic bags and rubber strings for to cover root soil packages when uprooting.
- One hundred of seedlings are distributed to 6 households in Po E Commune in which A Phong, leader of Hamlet 6 Dak RXo) gets 16. Besides that, the project has supplied other 20 seedlings to Hieu Pepole's Commune to plant around the commune office.

The total number of seedlings that have been distributed amount to 1,000.

On 22nd and 23rd afternoons planting *Phyllostachys pubescens*, *Dacrydium pierrei* Hickel and *Betula alnoides* was carried out at the site

The model planting procedures are first done by lecturer at site with a clear explanation, and then trainees follow these steps. These steps are:

- Mixing surface soil with a quantity of fertilizer as bed-dressing application to make a new volume equal to a half hole volume; cutting roots, clearing off pebble and grass; break soils by using hoe or by hands.
- Making a hole of 20cm wide, 10 – 15 cm deep by hand, upright inserting the seedling or seedling package into hole centre. As for *Phyllostachys pubescens*, it is necessary to match the length of inner seedling body with that of the hole, and its roots should be placed naturally and conveniently at the depth of 25cm from the hole mouth. As for *Dacrydium pierrei* Hickel and *Betula alnoides*, their root necks should be placed 2-3cm lower than the ground.
- When filling the hole, considerably stuff it with soil volume round the seedling foot by hand (or root soil package); it is not necessary fill the hole with too much soil at the same time or stuffing it by using feet for it may cause seedling roots, inner body or root soil package break.

- Using volume of surface soil to fill the hole to finally make a mound round the seedling to prevent stagnation in wet season. The seedling should be tied to a stick placed beside to keep it against strong wind.
- As for *Phyllostachys pubescens* and *Betula alnoides*, they should be covered with leaves of small tree branches in a hat shape to protect seedlings from intense sunlight, and their roots with dried grass or leaves in order to keep a considerable volume of humidity at the first growth stage. As for *Phyllostachys pubescens*, since they are planted at stream banks, it is easy to water them after planting with a volume of 30 – 40litres/seedling.

Seedlings of *Phyllostachys pubescens* through a 2 day transport to the planting site, they should be planted as quick as possible. So, in order to reduce bad impacts on seedling roots by intense sunlight, local people (households) should quickly dig hole to plant after being trained.



Newly-planted *Phyllostachys pubescens* seedling should be covered with a leaf or tree branches

Newly-planted *Dacrydium pierrei* Hickel

4 Conclusions and recommendations

The training course and implementation of afforestation and enrichment planting as a part of the 2008-plan for community forest management has been successful and achieved its expected objectives and outputs. As technical consultants, we would like to address our assessments and recommendation in order to improve the effectiveness of the training for future planting and enrichment process:

- Most trainees have worked seriously during the training and had desires to achieve skills, experiences and knowledge as well as selecting methods of seedlings, uprooting and planting for future application.
- *Phyllostachys pubescens* is located mainly in the south of China. However, it is very convenient to plant these trees in high mountainous area of Vi Ch'Ring village for having the same climate and soil conditions (temperature, rainfall...) on a pilot basis, and it will therefore make a scientific base and a hoping success.

- *Phyllostachys pubescens* is a species which lives in a population with a set of abundant hidden roots, selection for planting ground of thick, potential and soft soil layer must be made. And nursing, thinning, harvesting bamboo shoots and providing for seedlings must be taken care of..
- *Dacrydium pierrei* Hickel and *Betula alnoides* are indigenous timber species of high value and naturally located with a wide range of seedlings in the community forest. It is very suitable to use such species to generate in poor forest plots and this method should be therefore strongly promoted among the community in future time. In order to ensure the planting plan for these two local species successful, techniques of uprooting, especially as for *Betula alnoides*, selecting planting site (soil condition, forest coverage...) should be seriously applied and taken.
- In respect of implementation, is it necessary to be carried out in right season, this can be done during the break of rice field season for uprooting and planting in poor plots near the village.
- Enrichment of poor forest and planting *Phyllostachys pubescens* have been almost agreed in the 2008 plan for community forest management. JICA Project has also considerably assisted necessary materials. So, Board of Community forest management should actively order the community to implement the task in right time to enable the supervision and management process. This task can be done in groups who are previously formed in order to share and learn experiences. Uprooting can be also carried out on patrol for protection. Households who actively work and are highly responsible should be noted down in terms of their contribution to raise their responsibility and awareness in planting and enrichment and especially in better management and protection./.

Annex**Annex 1: List of participants to the training course**

July 20 – 23, 2008, at Vi Ch'Ring village, Hieu commune, Kon PLng district, Kon Tum Province

No.	Name	Working agencies/ locality	Position
1.	Y On	Vi Ch'Ring Village, Hieu Commune	Farmer
2.	A Bao	Vi Ch'Ring Village, Hieu Commune	Farmer
3.	A Trieu	Vi Ch'Ring Village, Hieu Commune	Farmer
4.	A Hong	Vi Ch'Ring Village, Hieu Commune	Farmer
5.	A Pho	Vi Ch'Ring Village, Hieu Commune	Farmer
6.	Dinh Thanh Tim	Vi Ch'Ring Village, Hieu Commune	Farmer
7.	A Vang	Vi Ch'Ring Village, Hieu Commune	Farmer
8.	Tran Quang Hai	Vi Ch'Ring Village, Hieu Commune	Farmer
9.	Dinh Van Dich	Vi Ch'Ring Village, Hieu Commune	Head of Community forest management Board
10.	Dinh Xuan Hai	Vi Ch'Ring Village, Hieu Commune	Vice-Head of Community forest management Board
11.	Y Oanh	Vi Ch'Ring Village, Hieu Commune	Farmer
12.	Y Tre	Vi Ch'Ring Village, Hieu Commune	Farmer
13.	Y Mia	Vi Ch'Ring Village, Hieu Commune	Farmer
14.	Ho Thi Thanh Nga	Hieu People's Committee	Commune officer
15.	Dinh Xuan Do	Hieu People's Committee	Commune Vice- President
16.	Tran Van Thanh	Hieu People's Committee	Commune officer
17.	Y Nui	Vi Ch'Ring Village, Hieu Commune	Farmer
18.	Y Cuong	Vi Ch'Ring Village, Hieu Commune	Farmer
19.	Y Phich	Vi Ch'Ring Village, Hieu Commune	Farmer
20.	Y Ho	Vi Ch'Ring Village, Hieu Commune	Farmer
21.	Y Vit	Vi Ch'Ring Village, Hieu Commune	Farmer
22.	Y Giap	Vi Ch'Ring Village, Hieu Commune	Farmer
23.	Y Vong	Vi Ch'Ring Village, Hieu Commune	Farmer
24.	A Ru	Vi Ch'Ring Village, Hieu Commune	Farmer
25.	Y Tron	Vi Ch'Ring Village, Hieu Commune	Farmer
26.	A Vo	Vi Ch'Ring Village, Hieu Commune	Farmer
27.	Y Thi	Vi Ch'Ring Village, Hieu Commune	Farmer
28.	Y Tham	Vi Ch'Ring Village, Hieu Commune	Farmer
29.	Y Via	Vi Ch'Ring Village, Hieu Commune	Farmer
30.	Y Deac	Vi Ch'Ring Village, Hieu Commune	Farmer
31.	Y Son	Vi Ch'Ring Village, Hieu Commune	Farmer
32.	A Chuynh	Vi Ch'Ring Village, Hieu Commune	Farmer
33.	A Tem	Vi Ch'Ring Village, Hieu Commune	Farmer
34.	6 farmers	Po E Commune	Farmer
35.	Ka To	JiCa Project	Leader of consultancy group
36.	Tran Lam Dong	JiCa Project	Jica officer
37.	Tran Van Nhu	Mang La Forest Plantation	JiCa officer
38.	Associate Professor-Doctor. Bao Huy	West Highland University	Consultant
39.	Ph.D. Vo Hung	West Highland University	Consultant
40.	B.A. Nguen Duc Dinh	West Highland University	Consultant
41.	Ho Dinh Bao	West Highland University	

**Annex 2: Contents of the training course of 2008 plan for community forest management.
Enrichment – Development of non-timber forest products**

Time	Morning/ Afternoon	Place	Activities	Materials, tools	Participants
20/7	8:30am– 11:00 am	- Do's house -forest plots	Selecting suitable plots and site for planting <i>Phyllostachys pubescens</i>	GPS site map PH measuring equipment	Household's representative
	13:30pm – 17:00pm	forest plots	Vegetable clearing, digging holes for planting <i>Phyllostachys pubescens</i>	hoes, showels	Household's representative
21/7	8:30am – 11:30am	- Do's house -forest plots	Uprooting and packaging at plots -Carrying seedlings back to village	GPS site map hoes, showels knives and nylon bags Nylon strings	Household's representative
	13:30pm – 17:00pm	forest plots	Carrying seedlings and fertilizer as bed-dressing application to planting plots Vegetable clearing, digging holes	GPS site map hoes, showels knives	Household's representative
22/7	9:00am – 11:00pm	- Do's house	<i>Phyllostachys pubescens</i> planting, nursing and harvesting techniques introduction	Guiding documents on planting <i>Phyllostachys pubescens</i> And its model <i>Betula alnoides</i> seedlings	Household's representative Technical officers
	13:30pm – 17:00pm	forest plots	Planting practice at site	<i>Betula alnoides</i> seedlings Farm manure Hoes and showels	Household's representative Technical officers
23/7	8:30am – 11:00am	- Do's house	Introduction of enrichment techniques with <i>Dacrydium pierrei</i> <i>Hickel</i> , <i>Betula alnoides</i>	Guiding documents on planting <i>Dacrydium pierrei</i> <i>Hickel</i> and <i>Betula alnoides</i> Model seedlings of these two species	Household's representative Technical officers
	13:30pm – 17:00pm	forest plots for enrichment	Planting practice of enrichment	Seedlings of <i>Dacrydium pierrei</i> <i>Hickel</i> , <i>Betula alnoides</i> Hoes/showels NPK fertilizer Compost	Household's representative Technical officers

**Kon Tum Provincial Department of Agriculture and Rural Development
Project of Villagers' Support for Sustainable Forest Management in Central
Highland / JOFCA/JICA**

**REPORT ON SEMINAR RESULT OF COMMUNITY
FOREST MANAGMENT**

**Hieu Village, Kon PLong District, Kon Tum Province
24 – 25, July 2008**



Consultants: Central Highland University:
Dr. Prof. Assoc. Bao Huy
Dr. Vo Hung; MSc. Nguyen Duc Dinh

Kon Tum, July, 2008

Table of contents

1	Introduction	3
2	Seminar agenda	3
3	Seminar process and results	4
	3.1 Comments from relevant parties on the process of community forest management..	4
	3.2 Summary of the process of community forest management and the mechanism of benefit sharing.....	5
	3.3 Visiting community forest.....	6
	3.4 General report on community forest management	7
	3.5 Discussion on solutions and recommendations on maintaining and developing community forest management.....	8
4	Seminar conclusion.....	10
5	Annex.....	11
	Annex 1: List of Seminar's participants	11
	Annex 2: Seminar on Community forest management.....	13

1 Introduction

Promotion of community forestry is a major policy of the Government of Vietnam. For the past one and a half year, pilot training, human resources training, and the implementation of forest and land allocation, community forest management planning have been implemented for the first time at Vi ChRing Village, Hieu Commune, Kon PLong District, Kon Tum Province. This program has gained important support from the JICA Project and technical consultancy from lecturers of Central Highland University. So far, the process has achieved important results:

- Plan for forest and land allocation to the Vi ChRing village community
- Five-year Community Forest Management Plan (2008 – 2012) and 2008 Annual Plan.
- Regulation on Forest Protection and Development (RFPD)
- Plan of Commercial Timber Harvest for the year 2008 has been established, on the basis of silviculture training and tree marking
- Guidelines on Community Management has been prepared

So far, the plan of forest and land allocation to the community has been approved, Vi Ch'Ring village community has been granted the forest use certificate. Other results are being applied for approval of competent agencies, so as to implement in the coming time. Meanwhile, JICA Project is supporting the community to implement some activities in the plan for the year 2008 such as forest protection (constructing landmarks and signboards), enrichment planting with indigenous species such as *Prunus arborea*, *Dacydium elatum*, and planting NTFPs like *Phyllostachys pubescens* along streams.

By September 2008, JICA Project will finish. Therefore, the Seminar was held to provide information, inform achieved results of the forest management process at Vi VhRing village to the related agencies at the province, district and commune level, and propose solutions to maintain the pilot CFM in the Vi Ch'Ring Village but also look for solutions to overcome constraints and improve forestry administrative procedures so that CFM can be disseminated in other areas of Kon Tum Province.

2 Seminar agenda

Venue: the seminar on the community forest management was held for 2 days, the first day was conducted in a meeting room of the Hieu Commune People's Committee and at the forest site, the second day was conducted in Hung Yen 3 hotel – Kon PLong District, Kon Tum Province

Time: 2 days, 24 – 25 July, 2008

Seminar chairing: Project Management Boards of Forestry Projects of Kon Tum Province

Consultants: Dr. Prof. Assoc. PGS.TS Bao Huy and the colleagues from the Faculty of Agriculture and Forestry, Central Highland University

Participants:

- Representatives of JICA project in Viet Nam and chief advisor of JICA project in Kon Tum Province.
- Kon PLong District leaders
- Representatives from provincial agencies: Sub-DoF, Sub-Department of Forest Protection, DONRE, Kon Tum Province Television.
- Economics Divisions, District DONREs, Forest Protection Stations of Kon Plong and Kon Ray districts
- Representatives of Hieu CPC, Community Forest Management Board and representatives of Vi ChRing Village.
- Some officers and farmers from other villages, communes in the Kon PLong District (*refer to attached list in the annex*)

Objectives:

- To provide information, share experience on Vi ChRing community forest management to other villages and communes and stakeholders.

- Promote the dissemination of community forest management in Kon Tum in the future

Expected outputs:

- Site, knowledge, experience in Vi Ch'Ring CFM is shared among stakeholders and other villages and communes
- Recommendations/solutions for developing community forest management

This report presents the process and achieved results of the seminar provided by the consultants.

Seminar contents:

- A farmer summarizes briefly the process of community forest management and the mechanism of benefit sharing from commercial timber harvest
 - Summarize the process of Vi Ch'Ring community forest management, Hieu Commune, Kon PLong District
 - Plan for forest and land allocation
 - Plan for 5 year community forest management (2008 – 2012)
 - Silviculture technique applied for tree marking when preparing timber harvest plan, and the mechanism of benefit sharing from community commercial timber harvest.
- Visit forest plots and some results of forest protection, model of forest enrichment and NTFPs development.
- General introduction to the Vi Ch'Ring community forest management and guidelines.
- Discuss and agree upon solutions and recommendations to maintain and develop methods of the Vi Ch'Ring community forest management and disseminate to other localities.
-

3 Seminar process and results

3.1 Comments from relevant parties on the process of community forest management.

Dr. Prof. Assoc. Bao Huy, the consultant, during the process of community forest management commented on the important achievements. Through training courses which include field activities, Vi Ch'Ring community and related parties have participated actively and enthusiastically as well as contributed opinions to the process of establishing plan for forest and land allocation, plan for community forest management and regulation on forest protection and development.

However, the plans and RFPD have not been approved; especially, plan for commercial timber harvest is under constraints of existing procedures and mechanism. Therefore, relevant authorities such as leaders of district agencies, DARD and FPMB are requested to discuss and find satisfactory solutions and support the community in implementing community forest management.

JICA Project representatives, Mr KaTo, the chief advisor highly appreciates the results of community forest management that Vi Ch'Ring village has achieved in the past one and a half year. These results have been documented systematically and expressed fully and clearly on forest site. Implementing the process of community forest management has improved the capacity of local residents and field staffs of related parties from commune, district, and provincial level through training and practice. It is hoped that these are the basic factors for the model dissemination to other localities in district and province. By September 2008, JICA Project shall officially finish, but it is expected that the process of community forest management shall be maintained and developed; this is also the project target for many years.

Representative of Forestry Project Management Board of Kon Tum Province, Ms. Ho Thi Quy Phi commented:

Implementing the Vi Ch'Ring commune forest management is the first pilot program in Kon Tum Province. So far, achieved results shall be valuable lessons which will be reviewed to apply in other localities.

To implement this program, authorities expected that the forest area allocated to the community shall be managed and used effectively and sustainably to contribute to locals' livelihood improvement. FPMB expects that district leaders, relevant parties, communes and villages, the Board of community forest management and villagers shall pay more attention on forest management and protection, enhance responsibilities, and focus on supervision during the process, especially the of timber harvest and benefit sharing...

JICA project is about to complete, however, the provincial FPMB will make the best effort to support the CFM process to achieve visible results and the model to other localities.

Leader from Kon PLong District, Mr Nguyen Ngoc Anh – DPC Vice Chairman thanks multi-sided and effective support from the JICA project. The project has implemented many agriculture and forestry activities in Kon PLong District. The district agrees and supports the commune forest management program which the project has facilitated in Vi Ch'Ring village in the past years, especially during the climate change is getting worse. Implementing community forest management shall provide the locals opportunities to get benefit from forest, contribute to poverty alleviation, this is really significant for the majority of the local residents who depend on one crop paddy production with low productivity. The project is an example, and the district shall review the lessons learnt to disseminate the models to other localities.



Provincial forestry project management board is delivering a speech



Leader of Kon PLong District is delivering a speech

3.2 Summary of the process of community forest management and the mechanism of benefit sharing

Four members of community forest management board and farmers of Vi Ch'Ring village used A0 color Poster to present the 4 following topics:

- Summarize the process of community forest management in Vi Ch'Ring Village, Hieu Commune, Kon PLong District – Presenter: Dinh Van Dich – Head of Community Forest Management Board
- Forest and land allocation plan – Presenter: Tran Quang Hai
- Five-year CFMP (2008 – 2012) – Presenter: A Pho – member Community Forest Management Board
- Silviculture techniques applied in tree marking when establishing harvest plan; benefit sharing mechanism from harvesting commercial timber among the community – Presenter: Dinh Thanh Tim.

Through the above presentation, farmers have opportunities to remind the works that they were trained and instructed during the past one and a half year, from that they are more confident on the results that the community has implemented together.



Dinh Van Dich is presenting the process of Community Forest Management



Dinh Thanh Tim is presenting the mechanism of benefit sharing

After the above presentations, participants discussed and commented with following ideas:

- Participatory community forest management in locality
- At the moment, other villages and communes are interested in the process of the community forest management in Vi Ch'Ring Village.
- Residents and leaders from Hieu Village are expecting the Kon Plong DPC to approve the plan of community forest management and Regulation on Forest Protection and Development.
- What supports from policy side are necessary for commercial timber harvest in community forest?
- Which methods should be used to maintain and develop local community forest management?
- The last two questions were discussed in the working group in the second day seminar in the district.
-

3.3 Visiting community forest

In the afternoon of 24th July, a field visit to allocated forest for CMF was held a bit behind the schedule.

The participants stopped behind the communal house, at a high elevation location to watch the community forest. Here, the head of the community forest management board introduced on map the forest area, roads, streams and boundaries between forest plots, positions of landmarks, sign boards...

After that, participants visited to the site of *Phyllostachys pubescens* planting, at Dak Dreng forest, along the Dak Pui stream, next to the rice paddle. Here, consultants and farmers explained why they chose *Phyllostachys pubescens* for pilot planting, techniques of site selection, planting techniques, and use seedlings source for dissemination.

After that participants went along a path to cross the Dak Dreng forest, and visited the plot of *Prunus arborea* and *Dacydium elatum* planting. There, farmers explained why they used indigenous species for forest enrichment; techniques of uprooting seedlings, planting site selection, planting techniques... Most of the participants highly appreciated the planting results, especially the success of planting *Dacydium elatum* in the poor forest.



Visit to *Prunus arborea* planting site



Newly planted *Dacydium elatum*

3.4 General report on community forest management

Associate Dr. Prof. Assoc. Bao Huy presented the overall process of community forest management supported by the JICA project implemented Vi Ch'Ring Village during the past one and a half year and instructions. After every content of the process, the consultants emphasized lessons learned after implementation, and key matters to pay attention to maintain and develop the community forest management. The contents are summarized as follows:

- Objectives of community forest management: Emphasize on the 5 objectives of the process, of which improvement of farmers and officers' capacity at all levels is the most important; at the same time, community forest management must create new livelihoods for the local residents; therefore, benefit sharing mechanism must be established clearly and easy to apply.
- 4 guidelines have been prepared based actual implementation in Vi Ch'Ring Village as well as summary of lessons learnt from other localities. The documents were prepared systematically and updated new policies. So, provincial authorities are requested to approve the plans as soon as possible to apply in other localities of Kon Tum Province.
- Forest and land allocation should be done in 9 steps, of which paying special attention to:
 - ✓ Participation of locals and relevant stakeholders.
 - ✓ Determining the modes of forest and land allocation to household or community
 - ✓ Forest resources assessment must done using participatory approach
 - ✓ Reform the procedures, and form of Land Use Certificate: should include forest status and use ha unit for forest area allocated
 - ✓ To maintain the results of forest and land allocation, we should pay attention to: management of land use certificate, landmarks, signboards... and pay attention on the supporting role of relevant parties.
 - ✓ To disseminate the model of forest and land allocation, it is necessary to have plans of forest land at commune, district level to implement the forest and land allocation in other localities.
- When it is important to notice followings matters when using guidelines on CFM:
 - ✓ Participation of locals and relevant stakeholders
 - ✓ Using stable forest model as basis for calculation of supply capacity of a forest plot. The model ensures the stable timber structure and has stable forest ecology like NTFPs, wild animals...

- ✓ The plan feasibility must be based on resources, and management and organization capacity of the community
- ✓ In the implementation arrangement of community forest management plan, we need to pay attention to:
 - Assign specific tasks for households and board of community forest management
 - Support from relevant parties and administrative procedures
- Establishment and implementation of Regulation on Forest Protection and Development should concern about:
 - ✓ Cycle for Establishment and implementation of Regulation on Forest Protection and Development
 - ✓ Topics to for RFPD establishment
 - ✓ When implementing RFPD, we need to pay attention to:
 - The role of board of community forest management in implementation and monitoring
 - Schedules, working plans and meetings with villagers must be clear and well informed
- Pay attention to document approval procedures because this is the basis for implementation and monitoring and benefit sharing.
- When using silviculture technique guidelines on selective cutting in community forest management, we need to pay attention to:
 - ✓ Applying principles
 - ✓ Basis and methods of calculating number selective logged trees
 - ✓ Tree marking must be complied with 7 criteria
 - ✓ On-site training
 - ✓ Notice the minimum distance between the two marked trees
- When preparing and implementing the plan of timber harvest in community forest, we need to pay attention to:
 - ✓ Maps
 - ✓ Number of marked trees, harvest volume
 - ✓ Plan of timber harvest and responsibilities of relevant parties
 - ✓ Organize to implement and supervise as planned
 - ✓ Conduct benefit sharing as specified in the RFPD
 - ✓ Administrative procedures for commercial timber harvest
- Introduce the use of Mobile Sawmill to apply in timber harvest and processing in Vi Ch’Ring community forest: advantages, price, and suggestions for the community to use forest effectively, raise income from forest, create jobs for young people, gain stable income, reduce pressure on forest harvest.

After the presentation of Dr. Prof. Assoc. Bao Huy, participants understood the process, results as well as agreed upon the recommendations to maintain and disseminate the model of community forest management in Central Highland. Especially, farmers and leaders of Hieu Commune really concerned and expect to use Mobile Sawmill for harvesting in coming times.

3.5 Discussion on solutions and recommendations on maintaining and developing community forest management

Through facilitated group discussion after all participants having full information on the process, results of community forest management in localities: achievements and difficulties, Vi Ch’Ring

villagers, Hieu CPC leaders and villagers from other communes, villages, staff and leaders relevant parties discussed and agreed upon the measures and recommendations to maintain and develop the model of community forest management in coming time:

Subjects	Measures	Recommendations
Related staff, departments at district, provincial levels	<ul style="list-style-type: none"> - Establish specific regulations for the operation of the Board of community forest management - Set up village management and protection station - The spending of the Village Development Fund must be approved by the Commune People's Council - CPC must set up a spending mechanism from contribution of the Commune forest fund - The People's Committee of commune must have plan to supervise and support the Board of commune forest management - Setting up a team of sawing. - Training carpentry to villagers. - Practicing villages the way to manage community forest. 	<ul style="list-style-type: none"> - Provincial leaders must prepare project in order to continue the assistance for the community forest management for four years at Vi Ch'Ring village. - A program for guiding how to use automatic sawing machines must be prepared by Province. - There must be a supporting policy for local rangers in order to carry out the supervision and management of community forests. - Issue guiding documents on management community forests and application in other places. - The total area should be defied in hectare with map of plot status in the land-use certificate. - The community should be allowed to commercially harvest timber. - Province People's Committee should allow community to open account and use commune's seal.
Villagers and authorities of commune, villages	<ul style="list-style-type: none"> - Setting up 3 teams of forest protection, with a monitoring book of names and responsibilities... At least one member of the board of community forest management in the team - Planning and supervising the protection teams (duty allotment, timekeeping.) - Completing the marking the community forest in august 2008. - One meeting a month to report the forest management and protection, informing calendar so that forest wardens could attend 	<ul style="list-style-type: none"> - Commune should strengthen the supervision and assistance. - Procedures for acceptance and approval or regulations should be carried out by related agencies - A plan for commercial harvest of timber must soon be accepted by authority. - The 2008 plan for community forest management must be accepted by Commune People's Committee. - Combine the State programs and projects to promote forestry for community of Vi Ch'Ring community.
	<ul style="list-style-type: none"> - Allow to harvest forest with commercial target in order to have village's forest development fund to pay activities. - Community implements the work of forest enrichment according to 5- year forest management plan. - Implement well the work of forest management. - Educate children to have awareness of forest protection. - Assign patrol groups to protect forest periodically 10 – 15 days/time. - 	<ul style="list-style-type: none"> - Authorities approve the community forest management plan in 2008. - Inform clearly the forest management plan to all villagers. - Functional branches support community in the forest protection and management. - Continuously support community to implement forest after JICA finishes. - Supply tools to do patrol, protect forest such as global positioning system, electric whip... -

4 Seminar conclusion

Although some participants who are provincial leaders and officers from relevant departments could not attend the seminar, the Seminar succeeded and achieved its expected objectives and outputs.

Representative of JICA highly appreciated pilot results of community forest management implemented at Kon Tum Province. To have this success, besides the effort of villagers in Vi Ch'Ring, there are the support of local authorities, technical consultants of Central Highland University and relevant departments. Head of consultants expects that when the project finishes in the next September, the process of community forest management will be maintained and developed.

Ms. Ho Thi Quy Phi, representative of management board of forestry projects – Department of Agricultural and Rural Development, Kon Tum Province summarized and concluded the seminar. Management Board of provincial forestry projects will suggest Department of Agricultural and Rural Development, Sub-Department of Forestry and provincial, district department to support the work of preparing document to submit to province for approval of prepared project, especially the method of commercial timber harvest for community forest to better support the process of forest management which has been implemented as a pilot program in Vi Ch'Ring; and at the same time to remind relevant parties from villages, communes, districts to pay attention to enhance the implementation and supervision to ensure the success of the process of community forest management at Vi Ch'Ring village, this shall expand the community forest management to other areas in Kon Tum Province.

5 Annex

Annex 1: List of Seminar's participants

No.	Full name	Office/ area	Position
1.	Ho Thi Quy Phi	Kon Tum Provincial FPMB	Vice director
2.	Ho Đac Huy	Kon Tum Provincial FPMB	Officer
3.	Tran Van Thanh	Hieu Commune People's Committee	Commune cadre
4.	A Bi	Village 10, Hieu Commune	Villager
5.	Nguyen Thi Hoa	Hieu Commune People's Committee	Vice Chairman of Commune People's Committee
6.	Đinh Ngoc Huong	Hieu Commune Party Committee	Party Committee secretary
7.	A Luong	Village 8, Hieu Commune	Villager
8.	A Be	Village 6, Hieu Commune	Villager
9.	A Khan	Village 9, Hieu Commune	Villager
10.	A Gio	Village 2, Hieu Commune	Villager
11.	Tran Van Manh	Dak Koi Commune	Villager
12.	A Thanh	Dak Koi Commune	Villager
13.	A Thanh	Dak Koi Commune	Villager
14.	A Thong	Bo E Commune	Villager
15.	Y On	Vi Ch'Ring Village, Hieu Commune	Villager
16.	A Bao	Vi Ch'Ring Village, Hieu Commune	Villager
17.	A Trieu	Vi Ch'Ring Village, Hieu Commune	Villager
18.	A Hong	Vi Ch'Ring Village, Hieu Commune	Villager
19.	A Chieng	Vi Ch'Ring Village, Hieu Commune	Villager
20.	A Pho	Vi Ch'Ring Village, Hieu Commune	Villager
21.	Dinh Thanh Tim	Vi Ch'Ring Village, Hieu Commune	Villager
22.	A Vang	Vi Ch'Ring Village, Hieu Commune	Villager
23.	Tran Quang Hai	Vi Ch'Ring Village, Hieu Commune	Villager
24.	Dinh Van Dich	Vi Ch'Ring Village, Hieu Commune	Director of Community Forest Management Board
25.	Dinh Xuan Hai	Vi Ch'Ring Village, Hieu Commune	Vice director of Community forest management board
26.	Y Oanh	Vi Ch'Ring Village, Hieu Commune	Villager
27.	Y Tre	Vi Ch'Ring Village, Hieu Commune	Villager
28.	Ho Thi Thanh Nga	Hieu Commune People's Committee	Commune cadre
29.	Dinh Xuan Do	Hieu Commune People's Committee	Vice Chairman of Commune
30.	Po Ly Chau	Natural Resource – Environment Department – H Kon Ray	Officer
31.	Nguyen Ngoc Xuan	Agricultural and Rural Development of Kon Plong Village	Officer
32.	Đang Tuan	Kon Plong Provincial Forest Protection Station	Officer

No.	Full name	Office/ area	Position
33.	Nong Van An	Kon Plong Provincial Forest Protection Station	Officer
34.	Le Xuan Hung	Kon Tum Provincial Forest Protection Branch	Officer
35.	Bui Van Nhiem	Kon Tum Provincial Forest Protection Branch	Officer
36.	Tran Ngoc Thanh	Kon Plong Agro forestry and service development	Officer
37.	Duong Anh Hung	Hieu Commune People's Committee	Chairman of Commune
38.	Nguyen Ngoc Anh	Kon PLong District People's Committee	Deputy chairman
39.	Nguyen Hai Van	Kon Tum Provincial Natural Resource – Environment Department	Officer
40.	Nguyen Xuan Huy	Dak P'Ne Commune	Villager
41.	A Nghiep	Dak P'Ne Commune	Villager
42.	Ka To	JICA Project	Head of Consultancy
43.	Tran Lam Dong	JICA Project	JICA Officers
44.	Tran Van Nhu	Mang La Forest Plantation	JICA Officers
45.	Associate professor - Doctor Bao Huy	Central Highland University	Consultant
46.	Doctor Vo Hung	Central Highland University	Consultant
47.	MA Ng Duc Dinh	Central Highland University	Consultant
48.	Ho Dinh Bao	Central Highland University	
49.	1 representative	Kon Tum Provincial Television Station	Television reporter

Annex 2: Seminar on Community forest management

Time	Length of time	Place	Content/ activities	Method	Materials/ tools
July, 27 th	9:00 a.m – 11:30 a.m	Vi ChRing Village, Hieu Commune, Kon PLong District Forest plots near harvesting areas	Villagers introduced briefly the process of community forest management, benefit sharing mechanism from timber Patrol all forest plots which near the timber exploiting area in 2008	Present by Poster, Discussion Discuss on the field	Community forest map, Posters Documents related to community forest management
	13:30 p.m– 16:00 p.m	At plots of forest for wealthy, planting <i>Phyllostachys pubescens</i>	Go on patrol of the site for forest enrichment, planting <i>Phyllostachys pubescens</i>	Discuss on the site	Map, Guideline document for technique of forest enrichment and <i>Phyllostachys pubescens</i> planting
July, 27 th	8:30 a.m– 11:30 a.m	Hotel at Kon PLong District	General of community forest management in Vi ChRing: - Introduce 4 constructions (forest and land allocation, prepare plan, regulation, silviculture technique) - Process – Result – New point – Challenges Summarize all results of discussion on site at July, 24 th	Present method of giving question and answer	Projector, display screen
			Issues withdrawn and challenges	Brainstorming work according to 2 groups	Pin board Color card, marker
	13:30 p.m– 16:00 p.m		Solutions/ suggestions	General suggestion	Pin board Color card, marker
	Express of leaders of province, District, Commune and project				

